

Solid Dispersion Compositions and Uses Thereof

[0001] Oral delivery of a therapeutic compound is the most preferred route of administration and accounts for eighty percent of all the pharmaceutical compositions on the market. The underlying premise of traditional oral delivery is that the therapeutic compound must first be released from the composition into the gastrointestinal fluids being absorbed by capillaries lining the duodenum of the small intestine and then distributed systemically by the bloodstream. However, the effectiveness of oral delivery typically relies on the pharmacokinetic properties of the pharmaceutical composition and the therapeutic compound formulated therein, with the amount of therapeutic compound released from the pharmaceutical composition (dissolution rate) and the amount of the therapeutic compound absorbed into systemic circulation and made available to the body (or bioavailability) being two primary critical factors.

[0002] Poorly water soluble or hydrophobic therapeutic compounds both present particularly difficult oral delivery challenges due to their poor aqueous solubility and slow dissolution rate in the aqueous gastrointestinal environment. To solve these problems, the pharmaceutical industry has traditionally focused on optimizing the formulation of a pharmaceutical composition in a manner that 1) improves the dissolution rate of a hydrophobic therapeutic compound within the formulation to increase the amount released into the gastrointestinal tract; and/or 2) improves the bioavailability of the hydrophobic therapeutic compound to increase the amount systemically delivered to the body.

[0003] For hydrophilic therapeutic compounds, the formulation challenges are different. Although these compounds are readily soluble in the aqueous gastrointestinal environment, many are poorly absorbed, due to poor membrane permeability and/or enzymatic degradation. Many solid dosage formulations of hydrophilic therapeutic compounds exhibit poor or no absorption of the therapeutic compounds.

[0004] One approach to improve the pharmacokinetics of a pharmaceutical composition comprising hydrophobic therapeutic compound has been the requirement to ingest the pharmaceutical composition with a high fat content meal to facilitate absorption in the small intestine and thus increase its bioavailability. Ingestion of the meal triggers the digestive process in the stomach which includes release of bile from the gall bladder into the duodenum, where it breaks down and absorbs fats from food. Although such meals do not generally influence dissolution rates, the absorption of the therapeutic compound that is released enters the systemic circulation in higher amounts due to the concomitant absorption of fats from the meal.

[0005] Another approach to improve the pharmacokinetics of a pharmaceutical composition comprising hydrophobic therapeutic compound has been the use of phospholipid-based formulations, including macroemulsion, microemulsion, self-emulsifying drug delivery systems (SEDDS), self-microemulsifying drug delivery systems (SMEDDS), self-nanoemulsifying drug delivery systems (SNEDDS), solid-lipid nanoparticle (SLN), liposomes and lipoplexes. These surfactant-based formulations create oily emulsions with the therapeutic compound which facilitates its absorption by the small intestine into systemic circulation, and thus increases bioavailability of the therapeutic compound. However, besides not generally affecting dissolution rates, such surfactant-based formulations also destabilize membrane lining in the

stomach causing irritation. Additional limitations associated with this approach include, *e.g.*, *in vivo* drug precipitation, formulation handling issues, limited lymphatic uptake, lack of predictive *in vitro* tests and oxidation of unsaturated fatty acids, which restrict their potential usage. Accordingly, wide variability of the bioavailability of therapeutic compounds remains a daunting hurdle.

[0006] The present specification provides an alternative approach where pharmaceutical compositions disclosed herein are formulated to rely on physiological lipid digestion and absorption systems to achieve absorption and enhanced efficacy and increase bioavailability of therapeutic compounds to better facilitate treatment of a disease or disorder. In addition, such formulations are not only applicable to highly lipophilic therapeutic compounds but also provide a means to increase the solubility of therapeutic compounds that are generally less soluble in both aqueous and lipid matrices.

SUMMARY

[0007] Aspects of the present specification disclose, in part, a pharmaceutical composition comprising a) one or more therapeutic compounds comprising a solid particle component and a solubilized component, b) one or more glycerolipids, and c) one or more digestion enhancers. A therapeutic compound disclosed herein is formulated either as a mixture of solubilized therapeutic compound and solid therapeutic compound particle or entirely as solid therapeutic compound particles. The solubilized component of one or more therapeutic compounds is dissolved in the liquid components comprising one or more glycerolipids and one or more digestion enhancers while the solid therapeutic compound particle component is dispensed in the liquid components comprising one or more glycerolipids and one or more digestion enhancers. A therapeutic compound disclosed herein can be a hydrophilic therapeutic compound, a hydrophobic therapeutic compound, or a pharmaceutical active agent or ingredient, a diagnostic agent or ingredient, a cosmeceutical active agent or ingredient, or a nutraceutical active agent or ingredient. In some aspects, the solubilized component consists of a therapeutic compound that is different than the therapeutic compound contained within the solid particle component. A glycerolipid disclosed herein includes hard fats and liquid fats. A hard fat is a glycerolipid that is solid at 18°C and includes triglycerides. A liquid fat is a glycerolipid that is liquid at 18°C and also includes partially hydrolyzed glycerolipids and monoglycerides. Digestion enhancers disclosed herein include one or more bile acids, one or more phospholipids, one or more free C₁₄₋₂₄ fatty acid surfactants, one or more fatty acid salts, one or more fatty acid derivatives with a polyhydroxylated head group, one or more steroidal surfactants, or any combination thereof.

[0008] Other aspects of the present specification disclose a method of treating an individual with a disease or disorder, the method comprising the step of administering to the individual in need thereof a pharmaceutical composition disclosed herein, wherein administration results in a reduction in a symptom associated with the disease or disorder, thereby treating the individual.

[0009] Other aspects of the present specification disclose, in part, a pharmaceutical composition for use in treating a disease or disorder, the pharmaceutical composition comprising a) one or more therapeutic

compounds, b) one or more glycerolipids, and c) one or more digestion enhancers. A therapeutic compound disclosed herein can be a hydrophilic therapeutic compound, a hydrophobic therapeutic compound, or a pharmaceutical active agent or ingredient, a diagnostic agent or ingredient, a cosmeceutical active agent or ingredient, or a nutraceutical active agent or ingredient. A glycerolipid disclosed herein includes hard fats and liquid fats. A hard fat is a glycerolipid that is solid at 18°C and includes triglycerides. A liquid fat is a glycerolipid that is liquid at 18°C and also includes partially hydrolyzed glycerolipids and monoglycerides. Digestion enhancers disclosed herein include one or more bile acids, one or more phospholipids, one or more free C₁₄₋₂₄ fatty acid surfactants, one or more fatty acid salts, one or more fatty acid derivatives with a polyhydroxylated head group, one or more steroidal surfactants, or any combination thereof. A composition disclosed herein may further comprise one or more pharmaceutically acceptable stabilizing agents.

[0010] Other aspects of the present specification disclose a use of a pharmaceutical composition disclosed herein in the manufacture of a medicament for the treatment of a disease or disorder.

DESCRIPTION

[0011] The present specification discloses pharmaceutical compositions formulated for oral delivery in a manner where the therapeutic compound present in the pharmaceutical composition is preferentially taken up into the lymphatic system. The pharmaceutical compositions disclosed herein comprise one or more therapeutic compounds, one or more glycerolipids, and one or more digestion enhancers. The pharmaceutical compositions disclosed herein is formulated as a dual or mixed phase composition comprising a solid particle component having a therapeutic compound present as a solid dispersion within a lipid matrix comprising one or more glycerolipids and a solubilized component having dissolved therapeutic compound within the lipid matrix. A glycerolipid disclosed herein facilitates dissolution of a therapeutic compound disclosed herein into solution and/or acts as a stabilizing agent that prevents a disclosed therapeutic compound from precipitating out of the pharmaceutical composition. A digestion enhancer disclosed herein increases the solubility of the one or more therapeutic compounds in the glycerolipid matrix, in conjunction with the glycerolipids, increases absorption of these compounds into the lymphatic system, and increases availability of these compounds to their therapeutic target. As shown herein, a disclosed pharmaceutical composition formulated using one or more glycerolipids and one or more digestion enhancers disclosed herein increases bioavailability of a therapeutic compound minimally by maintaining higher levels of the therapeutic compound over extended time period as well as increasing the directed bio-distribution of the therapeutic compound to its therapeutic target. Furthermore, besides achieving the greatest amount of therapeutic compound exposure over time to its therapeutic target, in many cases, a disclosed pharmaceutical composition enables a therapeutic compound to also reach its maximum concentration in the shortest period of time. Overall, a disclosed pharmaceutical composition exhibits a superior pharmacokinetic and pharmacodynamic profiles over current formulations of the same therapeutic compound making the disclosed pharmaceutical compositions more effective and efficacious for its intended use.

[0012] The majority of the digestion of dietary organic macromolecules and almost all absorption of the resulting breakdown products, occurs in the small intestine. The luminal wall of the small intestine is lined with many projections called villi, each of which comprises intestinal cells called enterocytes. Enterocytes not only secrete enzymes that digest proteins (polypeptides), carbohydrates (polysaccharides), and fats (lipids) but these cells also absorb the amino acids, monosaccharides and fatty acid breakdown products. Interestingly, however, enterocytes process these breakdown products differently with amino acids and monosaccharides being taken up by capillaries and transported systemically by the blood system and fatty acids being taken up by blind ended lymphatic vessels called lacteal and then transported systemically by the lymphatic system. The disclosed pharmaceutical compositions take advantage of this differential processing by formulating therapeutic compounds that are preferentially processed by enterocytes in a manner where these compounds are taken up and transported into the lymphatic system.

[0013] Dietary lipids typically consumed by a mammal comprise 90% triglycerides as well as small amounts of cholesterol esters and phospholipids. Unlike proteins and carbohydrates, dietary lipids are hydrophobic molecules that cannot dissolve in the fluids present in the lumen of the small intestine and instead aggregate together to form fat globules. Pancreatic lipase is a water-soluble enzyme that cleaves ester bonds and breaks down lipid triglycerides into fatty acids and glycerol. However, due to its hydrophilic character lipase remains in the intestinal fluids, are unable to dissolve into fat globules and as such can only access and cleave triglycerides located at the surface where fat globules and intestinal fluids interface. In order to increase efficiency and cleavage rate at which lipase can breakdown lipids in the small intestine, the liver produces a fluid called bile. Bile contains amphipathic molecules such as bile salts including sodium cholate and sodium chenodeoxycholate, phospholipids including lecithin, as well as the hydrophobic steroid cholesterol. When bile is excreted into the small intestine it mixes with the fat globules in a manner where bile salts and phospholipids intercalate with and break apart these structures into smaller units called emulsion droplets as well as recruits an amphipathic molecule called colipase. Colipase is a protein co-enzyme that binds lipase to the emulsion droplets and stabilizes the enzyme in its active conformation. As such, emulsification greatly increases the surface area of which lipases can act upon triglycerides as well as increases its efficiency and catalytic rate thereby enabling sufficient amounts of lipid digestion to occur in the small intestine.

[0014] As lipid triglyceride digestion proceeds, the resulting free fatty acids, which are also hydrophobic and insoluble in the intestinal fluids, associate with the phospholipids from the bile to form tiny droplets called mixed micelles having a phospholipid and bile salt composition which encapsulates the free fatty acids. Mixed micelles, which are about 200 to 500 times smaller in size than emulsion droplets, fuse with the membranes of enterocytes where the free fatty acids enter the cytosol of these cells. Once inside the enterocytes, the free fatty acids are transported to the lumen of smooth endoplasmic reticulum and are transformed back into triglycerides and are assembled with cholesterol and phospholipids into spherical lipid structures. These lipid structures are transported to the rough endoplasmic reticulum where apoprotein Apo B-48 is attached to the surface to form large lipoproteins called chylomicrons. Chylomicrons are then packaged in the Golgi apparatus and exit the basolateral side of the enterocytes via exocytosis. Since chylomicrons are too large to be taken up by blood capillaries, these lipoproteins enter the lymphatic system

via the lacteal in a process that depends on Apo B-48. The chylomicrons then circulate through the lymph vessels and drain into the blood system via the thoracic duct bypassing the liver circulation. Once chylomicrons are in the blood system, these lipoproteins travel to various extrahepatic tissues where their triglycerides are hydrolyzed by the activity of the lipoprotein lipase, allowing the released free fatty acids and glycerol to be absorbed by the tissues. When a large portion of the triglycerides has been hydrolyzed, chylomicron remnants are formed and are taken up by the liver, thereby also transferring dietary fat to this organ.

[0015] The present specification discloses pharmaceutical compositions formulated for oral delivery in a manner where the therapeutic compound present in the pharmaceutical composition is preferential taken up into the lymphatic system. The pharmaceutical compositions disclosed herein comprise one or more therapeutic compounds, the one or more therapeutic compounds comprising a solid particle component, one or more glycerolipids, and one or more digestion enhancers. A digestion enhancer disclosed herein increases the solubility of the one or more therapeutic compounds in the glycerolipid matrix, in conjunction with the glycerolipids, increases absorption of these compounds into the lymphatic system and increases availability of these compounds to their therapeutic target.

[0016] Natural digestion processes rely upon the secretion of bile onto the ingested gut contents and rely upon their mixing with the gut contents to initiate emulsification and access to other digestion processes such as the activity of lipases. These processes must be completed for the drug to be absorbed. A full gall bladder response in relation to the ingestion of lipids will secrete up to 50-60 mL of bile into the duodenum. The present invention relies upon the intimate mixing of digestion enhancers with the therapeutic compound in the preparation of a pharmaceutical composition disclosed herein that can then be taken orally by the patient. The therapeutic compound is then presented to the gut lumen in a form that is immediately ready for uptake. This process is highly efficient as the digestion enhancers are intimately mixed with the formulation lipid excipients. Without wishing to be limited by any theory, the pharmaceutical compositions disclosed herein employ components that are the products of triglyceride digestion to mimic the conditions created by a high fat meal. These formulations enable the one or more therapeutic compounds contained therein to be bundled along with the free fatty acids into micelles and absorbed by the enterocytes which then package the one or more therapeutic compounds into chylomicrons. The therapeutic compound loaded chylomicrons are then transported by the lymphatic system to their target cells where the therapeutic compounds are taken up by these cells to exert their beneficial effects. In essence, the chylomicrons are being co-opted as a drug delivery system for the one or more therapeutic compounds contained in a pharmaceutical composition disclosed herein. By controlling the components and amounts of the one or more glycerolipids and one or more digestion enhancers, the disclosed pharmaceutical compositions provide a more consistent and predictable bioavailability of the one or more therapeutic compounds disclosed herein that could ever be achieved by reliance on a high fat meal.

[0017] The pharmaceutical compositions disclosed herein are advantageous for several reasons all of which ultimately increase the bioavailability and efficacy of the one or more therapeutic compounds contained therein. For example, a pharmaceutical composition disclosed herein delivers its therapeutic

compounds via the lymphatic system. The use of the lymphatic system to deliver therapeutic compounds is beneficial for several reasons. First, the lymphatic system avoids pre-systemic metabolism that reduces the bioavailability of many therapeutic compounds administered using a traditional oral delivery approach. Also called first pass effect or first-pass metabolism, a therapeutic compound absorbed by the digestive system must first enter the hepatic portal system before reaching systemic circulation. While in the hepatic portal system, a therapeutic compound can be metabolized by hepatic enzymes of the liver which reduce the amount of therapeutic compound that enters systemic circulation. As such, delivery of therapeutic compounds via the lymphatic system acts as a bypass to the hepatic portal system for therapeutic compounds susceptible to hepatic metabolism. The lymphatic uptake system represents an attractive opportunity for the preferential delivery of drugs. However, small water-soluble molecules that obey the rules for paracellular absorption (such as Lipinski's Rules) are not ideal substrates for lymphatic uptake. Additional highly lipophilic molecules which are often poorly and variably bioavailable even when absorbed by lymphatic uptake. This invention uses a wide family of digestion enhancers in a lipidic delivery system, to allow both the small molecule Lipinski compliant drugs and the highly lipophilic drugs to be effectively delivered through the lymphatic uptake route.

[0018] Additionally, the lymphatic route of administration can aid delivery of therapeutic compounds directly to its target cells, thereby increasing its bioavailability and decreasing its clearance rate. For example, therapeutic compound loaded chylomicrons transported into the lymphatic system would drain into the thoracic artery and circulate throughout the body via the arterial system until reaching a capillary bed where the therapeutic compound loaded chylomicrons extravasates into the surrounding tissue to be taken up by target cell. Therapeutic compound loaded chylomicrons not taken up by target cells are cleared from the extracellular environment by interstitial fluid where they are taken up by lacteals, transported by the lymphatic system, and drained into the thoracic artery where the therapeutic compound loaded chylomicrons would once again be systemically recirculated throughout the body. Such lymphatic-based administration results in more therapeutic compound being delivered to the various systems, organs, and tissues due to the avoidance of the hepatic portal system discussed above. Additionally, since more therapeutic compound enters the general circulatory system, its elimination, i.e., metabolism and excretion, is prolonged, thereby decreasing the clearance rate of this compound which effectively increases its half-life.

[0019] Another advantage of the disclosed pharmaceutical compositions is the use of chylomicrons to selectively distribute the one or more therapeutic compounds contained therein to immune cells such as, e.g., macrophages and dendritic cells. For example, there are several processes whereby macrophages can take up chylomicrons. First, macrophages circulating in the lymph and blood secrete lipoprotein lipase and chylomicrons are substrates for this enzymatic activity resulting in the uptake of chylomicron proteins and lipids, and by extension any therapeutic compounds contained within the chylomicrons. Additionally, the exogenous lipoprotein metabolism pathway through a series of processing events converts chylomicrons to LDL particles which become oxidized by ROS to create oxidized LDL particles. FAT/CD36 scavenger receptor located on membrane of macrophages bind to and endocytose these oxidized LDL particles including any therapeutic compounds contained therein. Ultimately, these therapeutic compound-

loaded macrophages will be directed to cells undergoing pathologic distress where the therapeutic compounds can be delivered to these distressed cells.

[0020] Additionally, when processed in the small intestine into micelles, components of the disclosed pharmaceutical compositions are believed to mimic pathogen-associated molecular patterns (PAMPs). Absorption of these micelles by gut-associated lymphoid tissue (GALT) of the small intestine results in the subsequent uptake by immune cells like macrophages and dendritic cells by a pattern recognition receptor-mediated process. It is also suspected that since these micelles share structural similarities to chylomicrons, these micelles can also be taken up via the macrophage lipoprotein lipase process discussed above.

[0021] The disclosed pharmaceutical compositions are also advantageous because the components used for its formulation mimic the signals that trigger bile and pancreatic lipoprotein lipase secretion, enhance the rate of micellular formation, and increase the enterocyte absorption rate of micelle above that achieved with the use of the digestion enhancers in the formulation alone. Such characteristics increase the speed and amount of therapeutic compound entering the lymphatic system and thus its bioavailability.

[0022] Besides the preferential uptake into the lymphatic system and selective biodistribution to immune cells, the disclosed pharmaceutical compositions have several additional advantages. For example, therapeutic compounds are poorly water soluble or hydrophobic therapeutic compounds that heretofore have proven difficult to formulate in a therapeutically effective manner due to, e.g., their insolubility or instability in solution resulting in precipitation. Additionally, it has surprisingly been found that significantly higher concentrations of therapeutic compounds can be formulated in a pharmaceutical composition disclosed herein relative to currently known formulations. In addition, a disclosed pharmaceutical composition comprising one or more therapeutic compounds dramatically increases the dissolution rate and bioavailability of these compounds.

[0023] Yet another advantage of the disclosed pharmaceutical compositions is enhanced specificity for the cellular targets of the one or more therapeutic compounds. Chylomicrons comprise membrane-bound proteins which function as ligands which associate with their cognate receptors located on the membrane surface of cells. One such ligand of these large lipoprotein particles are proteins that interact with lipid transport proteins. As therapeutic compound-loaded chylomicrons are shed for absorption, cells that express high levels of lipid transport proteins on the cellular membrane preferentially bind and internalize these lipoprotein particles. For example, the brain has high levels of lipid transport proteins on the cellular membrane allowing passage across the blood brain barrier, and other epithelial tissue such as the choroid plexus. This mechanism thereby increases the efficacy of these compounds. Other cells that express high levels of lipid transport proteins on the cellular membrane include, immune, heart, adipose, hepatic, and cancer cells. Heart cells express high levels of lipid transport proteins on their surface, and we may therefore anticipate an increased cardiotoxicity for therapeutic compounds delivered through the lymphatic pathway. However, cardiotoxicity of therapeutic compounds is commonly caused through a high C_{max} concentrations of free compound, resulting in GPCR or ion channel related pathologies. Surprisingly

therefore lipid delivery of therapeutic compounds can result in lower-than-expected cardiotoxicity as these targets are protected from high concentrations of free compounds, as they are only slowly released from the chylomicron phase. Thus, the use of a pharmaceutical composition disclosed herein can also be associated with reduced cardiac side effects and diminished toxicity. In addition, upon ingestion, therapeutic compounds remain embedded in the oily/fatty excipients, limiting opportunity for the compounds to become solubilized in the aqueous gut contents, thereby avoiding contact toxicities such as gastric erosion and other localized damage or harm. As well as avoiding first pass metabolism and local toxicities, the enhanced uptake through the lymphatic pathway also minimizes the contact and availability of free therapeutic compound further down the alimentary canal. In this way interaction and disruption of the gut microbiome can be minimized. This is a particular benefit in using the technology with antimicrobial agents. Furthermore, due to the anatomy of the lymphatic system, the lungs can be effectively targeted with appropriate medications. For example, anti-inflammatory, antifibrotic, antimicrobial and bronchodilatory medications can be considered lung targeting through lymphatic delivery, using this technology.

[0024] Furthermore, the disclosed pharmaceutical compositions are unlike current surfactant-based formulations, such as, *e.g.*, macroemulsion, microemulsion, self-emulsifying drug delivery systems (SEDDS), self-microemulsifying drug delivery systems (SMEDDS), self-nanoemulsifying drug delivery systems (SNEDDS), solid-lipid nanoparticle (SLN), liposomes and lipoplexes. The disclosed pharmaceutical compositions are not emulsions or self-emulsifying compositions, and as such avoid the side-effects associated with these formulations like destabilizing the membranes lining in the stomach causing irritation. Additionally, the disclosed pharmaceutical compositions avoid the manufacturing issues associated with current surfactant-based formulations, such as, *e.g.*, formulation handling issues and no predictive *in vitro* testing. The disclosed pharmaceutical compositions also avoid the problems associated with current surfactant-based formulations include, *e.g.*, *in vivo* drug precipitation, limited lymphatic uptake, and lack of and oxidation of unsaturated fatty acids. Surprisingly, by mimicking the microenvironment of a mixed micelle, the disclosed pharmaceutical compositions completely bypass the dissolution phase of drug uptake resulting in significantly greater bioavailability of one or more therapeutic compounds contained therein. Unlike the self-emulsifying systems above the formulations disclosed herein are designed to avoid the formation of stable emulsions and when added to water, do not undergo spontaneous emulsification (exhibit the Ouzo Effect). Rather, when added to water these materials are clearly immiscible.

[0025] Another additional advantage relates to a pharmaceutical composition disclosed herein formulated as a solid dispersion disclosed herein which further increases bioavailability of a therapeutic compound contained within. For example, as the composition is processed in the small intestine, the digestion of the composition allows the particles to dissolve and associate themselves digestive components resulting micelles contain a higher concentration of a therapeutic compound due to the fact that a portion exists a micronized particles and not just solutes dissolved in a solvent. These micelles are then absorbed into the enterocytes where the high concentration, therapeutic compound-loaded micelles are either 1) processed into chylomicrons and released into the lymphatic system cells, or 2) stored by the enterocyte for future processing. The high concentration, therapeutic compound-loaded chylomicrons are subsequently processed by lipocytes, macrophages, and other cell types capable of chylomicron processing and the

contents of these chylomicrons, including therapeutic compound, are stored by these cells. This creates a distribution of "therapeutic compound depots" within the enterocytes and cell types capable of chylomicrons processing that enables a continuous release of therapeutic compound over time. This release establishes a systemic equilibrium of therapeutic compound that results in greater bioavailability due to increased plasma concentration as well as decreased clearance rate of the therapeutic compound.

[0026] Another additional advantage to a pharmaceutical composition disclosed herein formulated as a solid dispersion disclosed herein involves the exploitation of two different lymphatic uptake mechanisms at the same time which results in more therapeutic compound being absorbed thereby increasing bioavailability. The first uptake mechanism is the use of the enterocyte uptake of a therapeutic compound contained in micelles while the second uptake mechanism employs Peyer's patches to uptake solid particles of a therapeutic compound. Peyer's patches are known to be a part of lymphatic uptake mechanisms and evidence has suggested that these structures can uptake particles of a therapeutic compound, see Jenkins, et al., *Microparticulate Absorption from the Rat Intestine*, J. Controlled Release 29(3): 339-350 (1994). The employment of two independent lymphatic uptake mechanisms results in greater bioavailability due to increased plasma concentration as well as decreased clearance rate of the therapeutic compound.

Pharmaceutical Composition

[0027] Aspects of the present specification disclose, in part, a composition. A composition disclosed herein is generally administered as a pharmaceutical acceptable composition. As used herein, the term "pharmaceutically acceptable" refers to any molecular entity or composition refers any molecular entity or composition useful in preparing a pharmaceutical composition that is generally safe, non-toxic, and neither biologically nor otherwise undesirable and includes that which is acceptable for veterinary use as well as human pharmaceutical use. As used herein, the term "pharmaceutically acceptable composition" is synonymous with "pharmaceutical composition" and means the combination of one or more therapeutic compounds disclosed herein that are combined with one or more glycerolipids, one or more digestion enhancers, and other components disclosed herein to form the product that is administered to an individual. A pharmaceutical composition disclosed herein is useful for medical and veterinary applications. A pharmaceutical composition may be administered to an individual alone, or in combination with other supplementary active ingredients, agents, drugs or hormones.

[0028] The present specification discloses pharmaceutical compositions formulated as a dual or mixed phase composition comprising a solid particle component having a therapeutic compound present as a solid dispersion within a lipid matrix comprising one or more glycerolipids and a solubilized component having dissolved therapeutic compound within the lipid matrix. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more glycerolipids, and c) one or more digestion enhancers, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having

the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more glycerolipids, c) one or more bile acids and/or one or more bile salts, one or more free C₁₄₋₂₄ fatty acids, one or more phospholipids, one or more free C₁₄₋₂₄ fatty acid surfactants, or any combination thereof, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more glycerolipids, and c) one or more free C₁₄₋₂₄ fatty acids, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more glycerolipids, c) one or more bile acids and/or one or more bile salts; and d) one or more free C₁₄₋₂₄ fatty acids, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more glycerolipids, c) one or more bile acids and/or one or more bile salts; d) one or more free C₁₄₋₂₄ fatty acids; and e) one or more free C₁₄₋₂₄ fatty acid surfactants, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In all the above embodiments, one or more therapeutic compounds disclosed herein can comprise one or more hydrophilic therapeutic compounds, one or more poorly water soluble or hydrophobic therapeutic compounds, or any combination thereof.

[0029] In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and c) one or more digestion enhancers, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, c) one or more bile acids and/or one or more bile salts, one or more phospholipids, one or more free C₁₄₋₂₄ fatty acids, one or more free C₁₄₋₂₄ fatty acid surfactants, or any combination thereof, wherein the one or more therapeutic compounds comprise a solid particle component having the one or

more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and c) one or more free C₁₄₋₂₄ fatty acids, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, c) one or more bile acids and/or one or more bile salts; and d) one or more free C₁₄₋₂₄ fatty acids, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, c) one or more bile acids and/or one or more bile salts; d) one or more free C₁₄₋₂₄ fatty acids; and e) one or more free C₁₄₋₂₄ fatty acid surfactants, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In all the above embodiments, one or more therapeutic compounds, the one or more therapeutic compounds comprising a solid particle component disclosed herein can comprise one or more hydrophilic therapeutic compounds, one or more poorly water soluble or hydrophobic therapeutic compounds, or any combination thereof.

[0030] In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more triglycerides, one or more partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, or a combination of one or more triglycerides and one or more partially hydrolyzed glycerolipids, and c) one or more digestion enhancers, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more triglycerides, one or more partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, or a combination of one or more triglycerides and one or more partially hydrolyzed glycerolipids, c) one or more bile acids and/or one or more bile salts, one or more phospholipids, one or more free C₁₄₋₂₄ fatty acids, one or more free C₁₄₋₂₄ fatty acid surfactants, or any combination thereof, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion

within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more triglycerides, one or more partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, or a combination of one or more triglycerides and one or more partially hydrolyzed glycerolipids, and c) one or more free C₁₄₋₂₄ fatty acids, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more triglycerides, one or more partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, or a combination of one or more triglycerides and one or more partially hydrolyzed glycerolipids, c) one or more bile acids and/or one or more bile salts; and d) one or more free C₁₄₋₂₄ fatty acids, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more triglycerides, one or more partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, or a combination of one or more triglycerides and one or more partially hydrolyzed glycerolipids, c) one or more bile acids and/or one or more bile salts; d) one or more free C₁₄₋₂₄ fatty acids; and e) one or more free C₁₄₋₂₄ fatty acid surfactants, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In all the above embodiments, one or more therapeutic compounds, the one or more therapeutic compounds comprising a solid particle component disclosed herein can comprise one or more hydrophilic therapeutic compounds, one or more poorly water soluble or hydrophobic therapeutic compounds, or any combination thereof.

[0031] In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more triglycerides, one or more monoglycerides, or a combination of one or more triglycerides and one or more monoglycerides, and c) one or more digestion enhancers, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more triglycerides, one or more monoglycerides, or a combination of one or more triglycerides and one or more monoglycerides, c) one or more bile acids and/or one or more bile salts, one or more phospholipids, one or more free C₁₄₋₂₄ fatty acids, one or more free C₁₄₋₂₄ fatty acid surfactants, or any combination thereof,

wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more triglycerides, one or more monoglycerides, or a combination of one or more triglycerides and one or more monoglycerides, and c) one or more free C₁₄₋₂₄ fatty acids, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more triglycerides, one or more monoglycerides, or a combination of one or more triglycerides and one or more monoglycerides, c) one or more bile acids and/or one or more bile salts; and d) one or more free C₁₄₋₂₄ fatty acids, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In some embodiments, a pharmaceutical composition disclosed herein comprises a) one or more therapeutic compounds, b) one or more triglycerides, one or more monoglycerides, or a combination of one or more triglycerides and one or more monoglycerides, c) one or more bile acids and/or one or more bile salts; d) one or more free C₁₄₋₂₄ fatty acids; and e) one or more free C₁₄₋₂₄ fatty acid surfactants, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In all the above embodiments, one or more therapeutic compounds, the one or more therapeutic compounds comprising a solid particle component disclosed herein can comprise one or more hydrophilic therapeutic compounds, one or more poorly water soluble or hydrophobic therapeutic compounds, or any combination thereof.

[0032] A pharmaceutical composition disclosed herein is formulated as an anhydrous solid, a solid dispersion, or a molecular dispersion. As such, the formulations of the disclosed pharmaceutical compositions lack any water. In addition, as discussed above, the disclosed pharmaceutical compositions are not emulsions or self-emulsifying compositions. As such, a pharmaceutical composition disclosed herein will maintain its hydrophobic lipid characteristics when in an aqueous environment, behaving just like fats and oils and requiring the lipid digestive process to be broken down for absorption. Only when exposed to pancreatic juices from the small intestine will emulsification occur. One reason is that the one or more glycerolipids and the one or more digestion enhancers used are not sufficiently amphiphilic to initiate emulsification and require the action of bile secreted by the gall bladder during the digestion process in order for these components to contribute to the formation of micellar structures. Another reason is that the bile acid, fatty acid surfactants, phospholipids, and any other digestion enhancer are all individually and in combination below the critical micellar concentration necessary for emulsification to occur.

Therapeutic Compound

[0033] Aspects of the present specification disclose, in part, a therapeutic compound. A therapeutic compound is a compound that provides pharmacological activity or other direct effect in the diagnosis, cure, mitigation, treatment, or prevention of disease, or to affect the structure or any function of the body of man or animals. A therapeutic compound includes both a small molecule therapeutic compound that is synthesized and a synthetic peptide, a biologic therapeutic compound manufactured in, extracted from, or semi synthesized from biological sources including vaccines, whole blood, blood components, allergenics, somatic cells, gene therapies, tissues, recombinant therapeutic protein, and living medicines used in cell therapy.

[0034] The present specification discloses pharmaceutical compositions useful to formulate a wide variety of therapeutic compounds. Non-limiting examples of a therapeutic compound include, a pharmaceutical active agent or ingredient, a diagnostic agent or ingredient, a cosmeceutical active agent or ingredient, and a nutraceutical active agent or ingredient. A therapeutic compound disclosed herein may be used in the form of a pharmaceutically acceptable salt, solvate, or solvate of a salt, e.g. the hydrochloride. Additionally, therapeutic compounds disclosed herein may be provided as racemates, or as individual enantiomers, including the R- or S-enantiomer. Thus, the therapeutic compound disclosed herein may comprise an R-enantiomer only, a S-enantiomer only, or a combination of both an R-enantiomer and a S-enantiomer of a therapeutic compound. A therapeutic compound disclosed herein can be a hydrophilic therapeutic compound or a hydrophobic therapeutic compound.

[0035] A pharmaceutical composition disclosed herein may comprises one or more therapeutic compounds based on Biopharmaceutics Classification System (BCS) Class I-IV drugs. The BCS is a scientific framework for classifying drug substances based on based on its minimum aqueous solubility in the pH range of 1 to 7.5, dose and human fraction absorbed or intestinal membrane permeability, see U.S. Department of Health and Human Services Food and Drug Administration Center for Evaluation and Research (CDER), *Waiver of in vivo Bioavailability and Bioequivalence Studies for Immediate-Release Solid Oral Dosage Forms Based on a Biopharmaceutics Classification System, Guidance for Industry* (2017), which is hereby incorporated by reference in its entirety. When combined with the dissolution of the drug product, the BCS takes into account three major factors that govern the rate and extent of drug absorption from IR solid oral dosage forms: (1) dissolution, (2) solubility, and (3) intestinal permeability. This system categorizes drugs into four classes according to their permeability and solubility. BCS Class I drugs are therapeutic compounds that have high solubility and high permeable and are generally absorbed completely. BCS Class II drugs are therapeutic compounds that have low solubility and high permeable and would be absorbed completely, if in solution. BCS Class III drugs are therapeutic compounds that have high solubility and low permeable and have difficulty being absorbed completely, even though the agent is in solution (high dissolution rate). BCS Class IV drugs are therapeutic compounds that have low solubility and low permeable and are difficult to get in solution and once in solution are difficult to get absorbed. Subclassification have also been proposed based on whether a therapeutic compound from

BCS Class I or III is an acid, a base or neutral, see Tsume, et al., *The Biopharmaceutics Classification System: Subclasses for in vivo predictive dissolution (IPD) methodology and IVIVC*, Eur. J. Pharm. Sci. 57: 152-163 (2014), which is hereby incorporated by reference in its entirety.

[0036] In some embodiments, a pharmaceutical composition disclosed herein may comprises one or more BCS Class I therapeutic compounds, BCS Class II therapeutic compounds, BCS Class III therapeutic compounds, BCS Class IV therapeutic compounds, or any combination thereof. In aspects of these embodiments, a pharmaceutical composition disclosed herein may comprise one or more BCS Class I therapeutic compounds. In aspects of these embodiments, a pharmaceutical composition disclosed herein may comprise one or more BCS Class II therapeutic compounds. In aspects of these embodiments, a pharmaceutical composition disclosed herein may comprise one or more BCS Class III therapeutic compounds. In aspects of these embodiments, a pharmaceutical composition disclosed herein may comprise one or more BCS Class IV therapeutic compounds.

[0037] A pharmaceutical composition disclosed herein may comprise one or more hydrophilic therapeutic compounds. A hydrophilic therapeutic compound disclosed herein includes amphipathic therapeutic compound and are water soluble compounds with appreciable or substantial water solubility. In some embodiments, a hydrophilic therapeutic compound disclosed herein has an intrinsic water solubility (i.e., water solubility of the unionized form) of, e.g., at least 0.1 % by weight, at least 0.5 % by weight, at least 1 % by weight or, and more typically at least 10% by weight.

[0038] A pharmaceutical composition disclosed herein may comprise one or more hydrophobic therapeutic compounds. A hydrophobic therapeutic compound disclosed herein includes lipophilic therapeutic compounds and are poorly water-soluble compounds having little or no water solubility. In some embodiments, a poorly water soluble or hydrophobic therapeutic compound disclosed herein has an intrinsic water solubility (i.e., water solubility of the unionized form) of, e.g., at most 1 % by weight, at most 0.5% by weight, at most 0.1 % by weight, and more typically at most 0.01 % by weight.

[0039] In some embodiments, a therapeutic compound disclosed herein is a therapeutic compound comprising an organic acid functional group, such as, e.g., a carboxylic acid functional group or sulfonic acid functional group. Examples of a disclosed therapeutic compound comprising an organic acid functional group include a free acid form of a therapeutic compound (i.e., a therapeutic compound having a free organic acid) and a salt form of a therapeutic compound (i.e., a therapeutic compound having an organic acid salt). An organic acid salt form of a therapeutic compound includes any therapeutic compound associated with an alkali metal, such as, e.g., lithium (Li), sodium (Na), potassium (K), rubidium (Rb), cesium (Cs), and francium (Fr), or alkaline earth metal, such as, e.g., beryllium (Be), magnesium (Mg), calcium (Ca), strontium (Sr), barium (Ba), and radium (Ra).

[0040] In some embodiments, a therapeutic compound disclosed herein is a therapeutic compound comprising an organic base functional group, such as, e.g., an amine functional group. Examples of a disclosed therapeutic compound comprising an organic base functional group include a therapeutic

compound containing an organic base functional group capable of donating ions. In some embodiments, a therapeutic compound containing an organic base functional group capable of donating ions is a therapeutic compound containing an amine functional group capable of donating ions including, without limitation, a primary amine, a secondary amine, a tertiary amine, amide, amidine, amido, amino, imidate, imide, imine, imino, iminohydroxyl, and a quaternary salt.

[0041] Non-limiting examples of a therapeutic compound include those classified by the United States Pharmacopeia (USP) including analgesics (including opioids and non-opioids), anesthetics, antibacterials (including antibiotics), anticonvulsants, antidementia agents, antidepressants, antidotes and antitoxins, antiemetics, antifungals, anti-inflammatory agents (including corticosteroids, disease-modifying antirheumatic drugs (DMARDs), and nonsteroidal anti-inflammatory drugs (NSAIDs)), antimigraine agents, antimyasthenic agents, antimycobacterials, antineoplastics, antiparasitics, antiparkinson agents, antipsychotics, antivirals (including HIV antiretrovirals and direct-acting hepatitis C drugs), anxiolytic (anti-anxiety) agents, bipolar agents, blood glucose regulators (including insulin and other diabetes medications), blood products (including anticoagulants), cardiovascular agents (including beta-blockers, ACE inhibitors, and lipid management drugs such as statins and PPAR agonists), central nervous system agents (including amphetamines), dental and oral agents, dermatological (skin) agents, enzyme replacement agent, gastrointestinal agents (including H2 blockers and proton pump inhibitors), genitourinary (genital and urinary tract) agents, hormonal agents (adrenal, pituitary, prostaglandins, sex hormones, including estrogen, testosterone, and anabolic steroids, and thyroid), hormone suppressant (adrenal, parathyroid, pituitary, sex hormones, and thyroid), immunological agents, inflammatory bowel disease agents, metabolic bone disease agents, nootropic agents, ophthalmic agents, otic agents, respiratory tract agents (including antihistamines and bronchodilators), sedatives and hypnotics, skeletal muscle relaxants, and therapeutic nutrients, minerals, and electrolytes.

[0042] Non-limiting examples of a therapeutic compound include those classified as 5-alpha-reductase inhibitors, 5-aminosalicylates, 5HT3 receptor antagonists, adamantane, adrenal cortical steroids, adrenal corticosteroid inhibitors, agents for hypertensive emergencies, agents for pulmonary hypertension, aldosterone receptor antagonists, alkylating agents, allergenics, alpha-glucosidase inhibitors, alternative medicines, amebicides, aminoglycosides, aminopenicillins, aminosaliclates, amphetamines, AMPA receptor antagonists, amylin analogs, analgesics, androgens, anabolic steroids, Angiotensin Converting Enzyme (ACE) inhibitors, angiotensin II inhibitors, angiotensin receptor blockers, anorexiant, antacids, antiadrenergic agents, antiandrogens, antianginal agents, antiarrhythmic agents, antiasthmatic agents, antianxiety agents, antibiotics, anticholinergic agents, anticoagulants, anticoagulant reversal agents, anticonvulsants, antidepressants, antidiabetic agents, antidiarrheals, antidotes, antiemetic agents, antifungals, antigonadotropic agents, antigout agents, antihelminthic agents, antihistamines, antihyperlipidemic agents, antihypertensive agents, antihyperuricemic agents, antiinfective agents, antimalarial agents, antimanic agents, antimetabolites, antimigraine agents, antineoplastic agents, antineoplastic detoxifying agents, antineoplastic interferons, antiparkinson agents, antiplatelet agents, antipseudomonal penicillins, antipsoriatics, antipsychotics, antirheumatics, antirosacea agents, antiseptic and germicides, antispasmodics, antithyroid agents, antitoxins and antivenins, antituberculosis agents,

antitussive agents, antivertigo agents, antiviral agents, antiviral boosters, anxiolytics, sedatives, and hypnotics, aromatase inhibitors, astringents, atypical antipsychotics, azole, barbiturates, BCR-ABL tyrosine kinase inhibitors, benzodiazepines, beta blockers, beta-adrenergic blocking agents, beta-lactamase inhibitors, bile acid sequestrants, bisphosphonates, bone morphogenetic proteins, bone resorption inhibitors, bronchodilator combinations, bronchodilators, BTK inhibitors, calcimimetics, calcineurin inhibitors, calcitonin, calcium channel blocking agents, carbapenems, carbonic anhydrase inhibitors, cardiac stressing agents, cardioselective beta blockers, cardiovascular agents, catecholamines, CDK 4/6 inhibitors, central nervous system agents, cephalosporins, cerumenolytics, CFTR potentiators, CGRP inhibitors, chelating agents, chemokine receptor antagonist, chloride channel activators, cholesterol absorption inhibitors, cholinergic agonists, cholinergic muscle stimulants, cholinesterase inhibitors, chronotropic agents, CNS stimulants, coagulation modifiers, colony stimulating factors, corticosteroids, corticotropin, coumarins and indandiones, cox-2 inhibitors, decongestants, diarylquinolines, dibenzazepine, diagnostic dyes, dipeptidyl peptidase 4 inhibitors, disease-modifying antirheumatic drugs (DMARDs), diuretics, echinocandins, EGFR inhibitors, erythropoiesis agents, estrogen receptor antagonists, estrogens, expectorants, factor Xa inhibitors, fibric acid derivatives, first generation cephalosporins, fourth generation cephalosporins, functional bowel disorder agents, gallstone solubilizing agents, gamma-aminobutyric acid analogs, gamma-aminobutyric acid reuptake inhibitors, gastrointestinal agents, genitourinary tract agents, GI stimulants, glucocorticoids, glucose elevating agents, glycoprotein platelet inhibitors, glycylicyclines, gonadotropin releasing hormones, gonadotropin-releasing hormone antagonists, gonadotropins, group I antiarrhythmics, group II antiarrhythmics, group III antiarrhythmics, group IV antiarrhythmics, group V antiarrhythmics, growth hormone receptor blockers, growth hormones, guanylate cyclase-C agonists, H. pylori eradication agents, H2 antagonists, hedgehog pathway inhibitors, hematopoietic stem cell mobilizer, heparin antagonists, heparins, HER2 inhibitors, herbal products, histone deacetylase inhibitors, hormones, hydantoin, hydrazide derivatives, immunologic agents, immunostimulants, immunosuppressive agents, impotence agents, incretin mimetics, inotropic agents, insulin, insulin-like growth factors, integrase strand transfer inhibitor, interferons, interleukin inhibitors, interleukins, intravenous nutritional products, investigational drugs, iodinated contrast media, iron products, ketolides, leprostatics, leukotriene modifiers, lincomycin derivatives, local injectable anesthetics, lymphatic staining agents, macrolide derivatives, macrolides, magnetic resonance imaging contrast media, malignancy photosensitizers, mast cell stabilizers, meglitinides, melanocortin receptor agonists, metabolic agents, methylxanthines, mineralocorticoids, minerals and electrolytes, mitotic inhibitors, monoamine oxidase inhibitors, mTOR inhibitors, mucolytics, multikinase inhibitors, muscle relaxants, mydriatics, neprilysin inhibitors, neuraminidase inhibitors, neuromuscular blocking agents, neuronal potassium channel openers, NHE3 inhibitors, nicotinic acid derivatives, NK1 receptor antagonists, non-opioids, NNRTIs, non-cardioselective beta blockers, non-sulfonylureas, nonsteroidal anti-inflammatory drugs, nootropic agents, NS5A inhibitors, nucleoside reverse transcriptase inhibitors (NRTIs), nutraceutical products, nutritional products, ophthalmic agents, opioids, otic agents, oxazolidinone, parathyroid hormone and analogs, PARP inhibitors, PCSK9 inhibitors, penicillins, peripheral opioid receptor antagonists, peripheral opioid receptor mixed agonists/antagonists, peripheral vasodilators, peripherally acting antiobesity agents, phenothiazine, phenylpiperazine, phosphate binders, PI3K inhibitors, plasma expanders, platelet aggregation inhibitors, platelet-stimulating agents, polyenes, probiotics, progesterone receptor modulators, progestins, prolactin

inhibitors, prostaglandin D2 antagonists, protease inhibitors, protease-activated receptor-1 antagonists, proteasome inhibitors, proton pump inhibitors, PPAR agonists, psoralens, psychotherapeutic agents, purine nucleosides, pyrrolidine, quinolones, radiocontrast agents, radiologic adjuncts, radiologic agents, radiologic conjugating agents, radiopharmaceuticals, renal replacement solutions, renin inhibitors, respiratory agents, rifamycin derivatives, salicylates, sclerosing agents, second generation cephalosporins, selective estrogen receptor modulators, selective immunosuppressants, selective phosphodiesterase-4 inhibitors, selective serotonin reuptake inhibitors, serotonin-norepinephrine reuptake inhibitors, serotonergic neuroenteric modulators, sex hormones, SGLT-2 inhibitors, skeletal muscle relaxants, smoking cessation agents, somatostatin and somatostatin analogs, spermicides, statins, streptogramins, streptomyces derivatives, succinimide, sulfonamides, sulfonylureas, sympathomimetic amines, synthetic ovulation stimulants, tetracyclines, therapeutic radiopharmaceuticals, thiazide, thiazolidinediones, thioxanthenes, third generation cephalosporins, thrombin inhibitors, thrombolytics, thyroid drugs, TNF α inhibitors, tocolytic agents, transthyretin stabilizers, triazines, urea cycle disorder agents, urinary pH modifiers, uterotonic agents, vasodilators, vasopressin antagonists, vasopressors, VEGF/VEGFR inhibitors, viscosupplementation agents, vitamin, and VMAT2 inhibitors.

[0043] A therapeutic compound disclosed herein may be a Fibrate. Fibrates are a class of amphipathic carboxylic acids having PPAR α agonist activity. These therapeutic compounds are used for a range of metabolic disorders. One non-limiting use is as an anti-hyperlipidemic agent where it lower levels of, *e.g.*, triglycerides and LDL as well as increase levels of HDL. Non-limiting examples of a fibrate include, without limitation, a bezafibrate, a ciprofibrate, a clonofibrate, a clofibrate, a clofibrade, an etofibrate, a fenofibrate, a fenofibric acid, a gemfibrozil, a nafenopin, a ronifibrate, and a simfibrate. Fibrates are higher lipophilic or hydrophobic, with bezafibrate having a logP of 4.0, ciprofibrate having a logP of 3.6, clonofibrate having a logP of 7.5, clofibrate having a logP of 3.4, clofibrade having a logP of 2.8, etofibrate having a logP of 3.5, fenofibrate having a logP of 5.3, fenofibric acid having a logP of 4.4, gemfibrozil having a logP of 4.4, nafenopin having a logP of 4.9, ronifibrate having a logP of 3.9, and simfibrate having a logP of 6.2. With respect to the other fibrates, bezafibrate, ciprofibrate, and gemfibrozil, these compounds exist in acid form whereas, like fenofibrate, clofibrate, ronifibrate, and simfibrate are fibric acid derivative esters. Besides being a PPAR α agonist, bezafibrate may also have some agonistic activity on PPAR γ and PPAR δ .

[0044] A therapeutic compound disclosed herein may be a statin. Statins (or HMG-CoA reductase inhibitors) are a class of therapeutic compounds used to lower LDL and/or cholesterol levels by inhibiting the enzyme HMG-CoA reductase, which plays a central role in the production of cholesterol in the liver. To compensate for the decreased cholesterol availability, synthesis of hepatic LDL receptors is increased, resulting in an increased clearance of LDL particles from the blood. Non-limiting examples of a statin include, without limitation, Atorvastatin, Fluvastatin, Lovastatin, Pitavastatin, Pravastatin, Rosuvastatin, and Simvastatin.

[0045] A therapeutic compound disclosed herein may be an insulin sensitizer. Non-limiting examples of an insulin sensitizer includes a biguanide, a thiazolidinedione (or glitazone), a dual PPAR- α/γ agonist (a glitazar), a lyn kinase activator, or any combination thereof. Biguanides are a class of therapeutic

compounds that reduce hepatic glucose output and increase uptake of glucose by the periphery and/or have anti-malarial activities. A biguanidine includes, without limitation, buformin, chlorproguanil, metformin, phenformin, and proguanil. A thiazolidinedione includes, without limitation, Ciglitazone, Darglitazone, Englitazone, Lobeglitazone, Netoglitazone, Pioglitazone, Rivoglitazone, Rosiglitazone and Troglitazone. A dual PPAR agonist includes, without limitation, Aleglitazar, Muraglitazar, Saroglitazar, and Tesaglitazar. A lyn kinase activator includes, without limitation, tolimidone.

[0046] A therapeutic compound disclosed herein may be a secretagogue. Non-limiting examples of a secretagogue include a sulfonylurea, a nonsulfonylurea, a meglitinide (or glinide), a Glucagon-like peptide-1 (GLP-1) receptor agonist, a dipeptidyl peptidase 4 (DPP-4) inhibitor (or gliptin), and a Free fatty acid receptor 1 (FFAR1) agonist. A sulfonylurea includes, without limitation, a first-generation sulfonylurea like acetohexamide, carbutamide, chlorpropamide, glycyclamide, metahexamide, tolazamide, and tolbutamide, and a second-generation sulfonylurea like glibenclamide (glyburide), glibornuride, glicaramide, gliclazide, glimepiride, glipizide, gliquidone, glisoxepide, glyburide, and glyclopyramide. A meglitinide includes, without limitation, mitiglinide, nateglinide, and repaglinide. A GLP-1 receptor agonist includes, without limitation, albiglutide, dulaglutide, exenatide, liraglutide, lixisenatide, semaglutide, and taspoglutide. A DPP-4 inhibitor includes, without limitation, alogliptin, anagliptin, evogliptin, garvagliptin, gemigliptin, gosogliptin, linagliptin, melogliptin, omarigliptin, saxagliptin, septagliptin, sitagliptin, teneligliptin, trelagliptin, and vildagliptin. A FFAR1 agonist includes, without limitation, fasiglifam.

[0047] A therapeutic compound disclosed herein may be a benzimidazole-containing compound. A benzimidazole-containing compound is a class of heterocyclic aromatic organic compounds comprising a fused rings of benzene and imidazole. Non-limiting examples of a benzimidazole-containing compounds include, without limitation, the anthelmintic agents (or bendazoles) albendazole, benzimidazole, ciclobendazole, fenbendazole, flubendazole, mebendazole, oxfendazole, oxbendazole, thiabendazole, and triclabendazole. This benzimidazole-containing compound selectively inhibits the formation of microtubules via binding to colchicine binding site of β -tubulin, thereby blocking polymerisation of tubulin dimers. Disruption of cytoplasmic microtubules leads to blocking the uptake of glucose and other nutrients, resulting in the gradual immobilization and eventual death of the helminths. Other benzimidazole-containing compounds include, without limitation, the angiotensin II receptor blockers azilsartan, candesartan, and telmisartan; the antihistamines astemizole, bilastine, clemizole, emedastine, mizolastine, and oxatomide; the benzimidazole fungicides such as benomyl, carbendazim, fuberidazole, and thiabendazole; the benzimidazole opioids such as bezitramide, brorphine, clonitazene, etodesnitazene, etonitazene, etonitazepipne, etonitazepyne, isotonitazene, metodesnitazene, and metonitazene; the proton-pump inhibitors such as dextansoprazole, esomeprazole, ilaprazole, lansoprazole, omeprazole, pantoprazole, rabeprazole, and tenatoprazole; the typical antipsychotics such as benperidol, clopimozide, droperidol, neflumozide, and oxiperomide, and pimozide as well as abemaciclib, bendamustine, dabigatran, daridorexant, and glasdegib.

[0048] A therapeutic compound disclosed herein may be a Phosphodiesterase inhibitor. Examples of a suitable Phosphodiesterase inhibitor include, without limitation, a PDE 1 selective inhibitor, a PDE 2

selective inhibitor, a PDE 3 selective inhibitor, a PDE 4 selective inhibitor, a PDE 5 selective inhibitor, and a PDE 10 selective inhibitor. A PDE1 selective inhibitor includes Vinpocetine. A PDE2 selective inhibitor includes BAY 60-7550 (2-[(3,4-dimethoxyphenyl)methyl]-7-[(1R)-1-hydroxyethyl]-4-phenylbutyl]-5-methylimidazo[5,1-f][1,2,4]triazin-4(1H)-one), EHNA (erythro-9-(2-hydroxy-3-nonyl)adenine), Oxindole, and PDP (9-(6-Phenyl-2-oxohex-3-yl)-2-(3,4-dimethoxybenzyl)-purin-6-one). A PDE3 selective inhibitor includes Anagrelide, Cilostazol, Enoximone, Inamrinone, and Milrinone. A PDE4 selective inhibitor includes Drotaverine, Ibudilast, Luteolin, Mesembrine, Piclamilast, Roflumilast, and Rolipram. A PDE5 selective inhibitor includes Avanafil, Dipyridamole, Icarin, 4-Methylpiperazine, Pyrazolo Pyrimidin-7-1, Sildenafil, Tadalafil, Udenafil, and Vardenafil. A PDE10 selective inhibitor includes Papaverine.

[0049] A therapeutic compound disclosed herein may be an adrenergic receptor antagonist. An adrenergic receptor antagonist comprises an α 1-adrenergic antagonist, an α 2-adrenergic antagonist, and a β -adrenergic antagonist. An α 1-adrenergic antagonist includes, without limitation, Abanoquil, Ajmalicine, Alfuzosin, Anisodamine, Anisodine, Atiprosin, Atypical antipsychotics (e.g., brexpiprazole, clozapine, olanzapine, quetiapine, risperidone), Benoxathian, Beta blockers (e.g., adimolol, amosulalol, arotinolol, carvedilol, eugenodilol, labetalol), Buflomedil, Bunazosin, Corynanthine, Dapiprazole, Domesticine, Doxazosin, Ergolines (e.g., acetergamine, ergotamine, dihydroergotamine, lisuride, nicergoline, terguride), Etoperidone, Fenspiride, Hydroxyzine, Indoramin, Ketanserin, L-765,314, mCPP, Mepiprazole, Metazosin, Monatepil, Moxisylyte, Naftopidil, Nantenine, Neldazosin, Niaprazine, Niguldipine, Pardoprinox, Pelanserine, Perlazine, Phendioxan, Phenoxybenzamine, Phentolamine, Phenylpiperazine antidepressants (e.g., hydroxynefazodone, nefazodone, trazodone, triazolidione), Piperoxan, Prazosin, Quinazosin, Quinidine, Silodosin, Spegatine, Spiperone, Talipexole, Tamsulosin, Terazosin, Tiodazosin, Tolazoline, Tetracyclic antidepressants (e.g., amoxapine, maprotiline, mianserin), Tricyclic antidepressants (e.g., amitriptyline, clomipramine, doxepin, imipramine, trimipramine), Trimazosin, Typical antipsychotics (e.g., chlorpromazine, fluphenazine, loxapine, thioridazine), Urapidil, WB-4101, and Zolertine. A α 2-adrenergic antagonist includes, without limitation, 1-PP, Adimolol, Amesergide, Aptazapine, Atipamezole, Atypical antipsychotics (e.g., asenapine, brexpiprazole, clozapine, lurasidone, olanzapine, paliperidone, quetiapine, risperidone, zotepine), Azapirones (e.g., buspirone, gepirone, ipsapirone, tandospirone), BRL-44408, Buflomedil, Cirazoline, Efaroxan, Esmirtazapine, Fenmetozole, Fluparoxan, Idazoxan, Ketanserin, Lisuride, mCPP, Mianserin, Mirtazapine, NAN-190, Pardoprinox, Phentolamine, Phenoxybenzamine, Piperoxan, Piribedil, Rauwolscine, Rotigotine, Setiptiline, Spegatine, Spiroxatrine, Sunepitron, Terguride, Tolazoline, Typical antipsychotics (e.g., chlorpromazine, fluphenazine, loxapine, thioridazine), and Yohimbine. A β -adrenergic antagonist includes, without limitation, Acebutolol, Adaprolol, Adimolol, Afurolool, Alprenolol, Alprenoime, Amosulalol, Ancarolol, Arnolol, Arotinolol, Atenolol, Befunolol, Betaxolol, Bevantolol, Bisoprolol, Bopindolol, Bornaprolol, Brefonalol, Bucindolol, Bucumolol, Bufetolol, Bufuralol, Bunitrolol, Bunolol, Bupranolol, Butaxamine, Butidine, Butofilolol, Capsinolol, Carazolol, Carpindolol, Carteolol, Carvedilol, Celiprolol, Cetamolol, Cicloprolol, Cinamolol, Cloranolol, Cyanopindolol, Dalbraminol, Dexpropranolol, Diacetolol, Dichloroisoprenaline, Dihydroalprenolol, Dilevalol, Diprafenone, Draquinolol, Ecastolol, Epanolol, Eriolol, Ersentilide, Esatenolol, Esprolol, Eugenodilol, Exaprolol, Falintolol, Fleistolol, Flusoxolol, Hydroxycarteolol, Hydroxytertatolol, ICI-188,551, Idropranolol, Indenolol, Indopanlol, Iodocyanopindolol, Iprocrolol, Isoxaprolol, Isamoltane, Labetalol, Landiolol, Levobetaxolol, Levobunolol,

Levomoprolol, Medroxalol, Mepindolol, Metipranolol, Metoprolol, Moprolol, Nadolol, Nadoxolol, Nebivolol, Nifenalol, Nipradilol, Oxprenolol, Pacrinolol, Pafenolol, Pamatolol, Pargolol, Penbutolol, Pindolol, Practolol, Primidolol, Procinolol, Pronethalol, Propafenone, Propranolol, Ridazolol, Ronactolol, Soquinolol, Sotalol, Spirendolol, SR 59230A, Sulfinalol, Talinolol, Tazolol, Tertatolol, Tienoxolol, Tilisolol, Timolol, Tiprenolol, Tolamolol, Toliprolol, Xibenolol, and Xipranolol.

[0050] A therapeutic compound disclosed herein may be a cancer drug. Examples of a cancer drug include, without limitation, an alkylating agent, an anti-metabolite, a plant alkaloid and terpenoid, a topoisomerase inhibitor and a cytotoxic antibiotic. An alkylating agent includes carboplatin, chlorambucil, cisplatin, cyclophosphamide, ifosfamide, oxaliplatin, and mechlorethamine. An anti-metabolite includes Azathioprine and Mercaptopurine. A plant alkaloid and terpenoid include a vinca alkaloid like vincristine, vinblastine, vinorelbine, and vindesine, a podophyllotoxin like etoposide and teniposide, and a taxane like docetaxel and ortataxel. A topoisomerase inhibitor includes a type i topoisomerase inhibitor like a camptothecins, such as, *e.g.*, exatecan, irinotecan, lurtotecan, topotecan, BNP 1350, CKD 602, DB 67 (AR67), and ST 1481, and a type ii inhibitor like an epipodophyllotoxin such as, *e.g.*, amsacrine, etoposid, etoposide phosphate, and teniposide. A cytotoxic antibiotic includes an actinomycin like actinomycin d, bacitracin, colistin (polymyxin E), and polymyxin b, an anthracenedione like mitoxantrone and pixantrone, and a anthracycline like bleomycin, doxorubicin (adriamycin), daunorubicin (daunomycin), epirubicin, idarubicin, mitomycin, plicamycin, and valrubicin. PARP inhibitors, kinase inhibitors and repurposed drugs including mebendazole, beta blockers, aminocoumarin antibiotics such as novobiocin, antirheumatic drugs such as methotrexate and auranofin.

[0051] A therapeutic compound disclosed herein may be a 5-lipoxygenase inhibitor. A 5-lipoxygenase inhibitor inhibits the activity of 5-lipoxygenase, an enzyme responsible for the production of inflammatory leukotrienes. Non-limiting examples of a 5-lipoxygenase inhibitor include, without limitation, Zileuton.

[0052] A therapeutic compound disclosed herein may be a C-C chemokine receptor type 1 (CCR1) antagonist. Non-limiting examples of a CCR1 antagonist include, without limitation, BX-471 (CAS No. 217645-70-0).

[0053] A therapeutic compound disclosed herein may be an adenosine diphosphate (ADP) receptor antagonist. Non-limiting examples of an ADP receptor antagonist include, without limitation, Ticagrelor.

[0054] A therapeutic compound disclosed herein may be an inflammasome modulator. Non-limiting examples of an inflammasome modulator include, without limitation, Amlexanox (an anti-inflammatory antiallergic immunomodulator and histamine blocker), Colchicine, Edavarone (Edaravone), Lenalidomide, and Tranislast (a NLR family pyrin domain containing 3 (NLRP3) inflammasome activation inhibitor).

[0055] A therapeutic compound disclosed herein may be a microglial modulator. Non-limiting examples of a microglial modulator include, without limitation, Allopregnanolone (a neurosteroid), amlexanox (an anti-

inflammatory antiallergic immunomodulator), artemether (antimalarial drug), memantine, and ketamine (a N-methyl-D-aspartate (NMDA) receptor antagonist).

[0056] A therapeutic compound disclosed herein may be a non-steroidal anti-inflammatory drug (NSAID). NSAIDs are a large group of therapeutic compounds with analgesic, anti-inflammatory, and anti-pyretic properties. NSAIDs reduce inflammation by blocking cyclooxygenase. NSAIDs may be classified based on their chemical structure or mechanism of action. Non-limiting examples of a NSAID include, without limitation, non-selective cyclo-oxygenase (COX) inhibitor, a selective cyclooxygenase 1 (COX 1) inhibitor, or a selective cyclooxygenase 2 (COX 2) inhibitor. Non-limiting examples of a NSAID include, without limitation, an acetic acid derivative NSAID, an enolic acid derivative NSAID, a fenamic acid derivative NSAID, a p-amino phenol derivative NSAID, a propionic acid derivative NSAID, a pyrazolone/pyrazolidine derivative NSAID, or a salicylate derivative NSAID. Examples of an acetic acid derivative NSAID comprises Aceclofenac, Acemetacin, Alclofenac, Amfenac, Bendazac, Bromfenac, Bufexamac, Bumadizone, Diclofenac, Difenpiramide, Etodolac, Felbinac, Fenclozic acid, Fentiazac, Indometacin, Indometacin farnesil, Isoxepac, Ketorolac, Lonazolac, Mofezolac, Oxametacin, Prodolic acid, Proglumetacin, Sulindac, Tiopinac, Tolmetin, Zomepirac. Examples of an enolic acid (Oxicam) derivative NSAID comprises Ampiroxicam, Droxicam, Isoxicam, Lornoxicam, Meloxicam, Piroxicam, Pivoxicam, and Tenoxicam. Examples of a fenamic acid (n-arylanthranilic acids) derivative NSAID comprises Azapropazone, Clonixin, Etofenamate, Floctafenine, Flufenamic acid, Flunixin, Flutiazin, Glafenine, Meclofenamic acid, Mefenamic acid, Morniflumate, Niflumic acid, and Tolfenamic acid. Examples of a propionic acid derivative NSAID comprises Alminoprofen, Benoxaprofen, Carprofen, Dexibuprofen, Dexketoprofen, Fenbufen, Fenoprofen, Flunoxaprofen, Flurbiprofen, Ibuprofen, Ibuproxam, Indoprofen, Ketoprofen, Loxoprofen, Miroprofen, Naproxen, Naproxinod, Oxaprozin, Piketoprofen, Pirprofen, Suprofen, Tarenflurbil, Tepoxalin, Tiaprofenic acid, Vedaprofen, and Zaltoprofen. Examples of a pyrazolone/pyrazolidine derivative NSAID comprises Aminophenazone, Ampyrone, Azapropazone, Clofezone, Difenamizole, Famprofazone, Feprazone, Kebuzone, Metamizole, Mofebutazone, Morazone, Nifenazone, Oxyphenbutazone, Phenazone, Phenylbutazone, Propyphenazone, Sulfipyrazone, and Suxibuzone. Examples of a salicylate derivative NSAID comprises Aspirin (acetylsalicylic acid), Aloxiprin, Benorylate, Carbasalate calcium, Diflunisal, Dipyrrocetyl, Ethenzamide, Guacetisal, Magnesium salicylate, Methyl salicylate, Salsalate, Salicin, Salicylamide, Salicylic acid (salicylate). Examples of a selective COX-2 inhibitors include, without limitation, Celecoxib, Etoricoxib, Firocoxib, Lumiracoxib, Meloxicam, Paracetamol (Acetaminophen), Parecoxib, Rofecoxib, and Valdecoxib.

[0057] A therapeutic compound disclosed herein may be a Neurokinin-1 (NK₁) receptor antagonist. NK₁ is a G protein-coupled receptor located in the central and peripheral nervous system. Substance P is a dominant ligand for the NK₁ receptor and this neuropeptide is present in high concentrations in the vomiting center of the brain, and, when activated, triggers a vomiting reflux. Thus, NK₁ receptor antagonists are antiemetics agents used to control nausea and vomiting. Non-limiting examples of a NK₁ receptor antagonist include, without limitation, an aprepitant, a maropitant, a netupitant, and a rolapitant.

[0058] A therapeutic compound disclosed herein may be a Cannabinoid. Non-limiting examples of a Cannabinoid include, without limitation, a Phytocannabinoid, an Endocannabinoid, and a synthetic cannabinoid. Non-limiting examples of a Phytocannabinoid include, without limitation, a Cannabitol (including CBB), a Cannabichromene (including CBC, CBCB, CBCP, CBCV, and CBCQ), a Cannabicyclol (including CBL, CBLB, CBLP, CBLVA), a Cannabidiol (including CBD, CBD-C1, CBD-C5, CBDB, CBDD, CBDH, CBDP, CBDM, CBDV, CBDQ, and 8,9-Dihydrocannabidiol), a Cannabielsoin (including CBE, CBEB, CBEP, and CBEV), a Cannabigerol (including CBG, CBGP, CBNR, CBGV, and CBGQ), a Cannabiphorol (including CBP), a Cannabinol (including CBN, CBND, CBNP, CBVD, 7,8-Dihydrocannabinol, and Hexahydrocannabinol), a Cannabitriol (including CBT, CBTB, CBTv, and CBTP), and a Cannabivarin (including CBV), a Tetrahydrocannabivarin, and a Tetrahydrocannabinol (including Delta-4(8)-iso-tetrahydrocannabinol (Δ 4(8)-iso-THC), Delta-8-tetrahydrocannabinol (Δ 8-THC), Delta-8-iso-tetrahydrocannabinol (Δ 8-iso-THC), Delta-9-tetrahydrocannabinol (Δ 9-THC, THC), and Delta-10-tetrahydrocannabinol (Δ 10-THC), Cannabichromanone (CBCF), Cannabicitran, Cannabifuran (CBF), Cannabiglendol, Cannabimovone (CBM), Cannabiripsol (CBR), Cannabiripsophoric acid (CBRPA), Caryophyllene, Dehydrocannabifuran (DCBF), Alkylamides, Epigallocatechin gallate, Gallic acid, Geranyl acetate, Geranyl pyrophosphate, Glycerol, Homogentisin, Linalool, Linalyl acetate, Methyl salicylate, N-pentenol, P-cymenol, Pinene, Propyl acetate, Terpinolene, Trans-beta-terpinene, Vanillin, and Ylang-ylang). Non-limiting examples of an Endocannabinoid include, without limitation, Arachidonic acid, Anandamide (AEA), 2-arachidonoyl glycerol (2-AG), 2-arachidonoyl glyceryl ether (noladin ether), N-arachidonoyl-dopamine (NADA), Virodhamine (OAE), and Lysophosphatidylinositol (LPI). Non-limiting examples of a synthetic cannabinoid include, without limitation, Dronabinol (Marinol), Nabilone (Cesamet), Sativex, Rimonabant (SR141716), JWH-018, JWH-073, CP-55940, Dimethylheptylpyran, HU-210, HU-331, SR144528, WIN 55,212-2, JWH-133, Levonantradol (Nantrodolum), and AM-2201.

[0059] A therapeutic compound disclosed herein may be a protein kinase inhibitor. A protein kinase inhibitor is a type of enzyme inhibitor that blocks the action of one or more protein kinases. Protein kinases are ubiquitous intracellular and cell surface proteins that play critical roles in cell signaling pathways involved in metabolism, injury responses, adaptation, growth, and differentiation. They act by adding a phosphate group to a protein (phosphorylation), usually on a specific amino acid which often makes the protein or enzyme "active". The human genome has more than 500 protein kinases and they can be classified as tyrosine, serine-threonine or nonspecific (both), based upon their amino acid specificity.

[0060] A tyrosine kinase inhibitor can be divided into two main families, receptor tyrosine kinase (RTK) inhibitors and non-receptor or cytoplasmic tyrosine kinase (nRTK) inhibitors. Nonlimiting examples of RTK inhibitor include a RTK class I inhibitor (EGF receptor family) (including erlotinib (ErbB family), a RTK class II inhibitor (Insulin receptor family), a RTK class III inhibitor (PDGF receptor family)(including Imatinib, Midostaurin, Nintedanib, and Sunitinib), a RTK class IV inhibitor (VEGF receptors family) (including Lenvatinib, Nintedanib, and Sunitinib), a RTK class V inhibitor (FGF receptor family)(including Nintedanib and Midostaurin), a RTK class VI inhibitor (CKK receptor family), a RTK class VII inhibitor (NGF receptor family), a RTK class VIII inhibitor (HGF receptor family), a RTK class IX inhibitor (Eph receptor family), a RTK class X inhibitor (AXL receptor family), a RTK class XI inhibitor (TIE receptor family), a RTK class XII inhibitor (RYK receptor family), a RTK class XIII inhibitor (DDR receptor family), a RTK class XIV inhibitor

(RET receptor family), a RTK class XV inhibitor (ROS receptor family), a RTK class XVI inhibitor (LTK receptor family), a RTK class XVII inhibitor (ROR receptor family), a RTK class XVIII inhibitor (MuSK receptor family), a RTK class XIX inhibitor (LMR receptor), and a RTK class XX inhibitor (Undetermined). Nonlimiting examples of nRTK inhibitor include an ABL nRTK inhibitor (including Imatinib), an ACK nRTK inhibitor, a BTK nRTK inhibitor (including Ibrutinib), a CSK nRTK inhibitor, a FAK nRTK inhibitor, a FES nRTK inhibitor, a FRK nRTK inhibitor, a JAK nRTK inhibitor, a SRC nRTK inhibitor (including Nintedanib and CCT3833/ BAL3833; MedKoo No. 206553), a SYK nRTK inhibitor, and a TEC nRTK inhibitor.

[0061] A serine-threonine kinase (STK) inhibitor can be divided into two main families, receptor protein serine/threonine kinase (RSTK) inhibitors and non-receptor or cytoplasmic serine/threonine kinase (nRSTK) inhibitors. Nonlimiting examples of STK inhibitor include a Polo kinase (PLK) inhibitor, a Cyclin-dependent kinase (CDK) inhibitor, a (RNA-polymerase)-subunit kinase (RPS6K) inhibitor, a Mitogen-activated protein kinase (MAPK) inhibitor (including CCT3833/ BAL3833; MedKoo No. 206553, MAPK1 inhibitor, MAPK3 inhibitor, MAPK4 inhibitor, MAPK6 inhibitor, MAPK7 inhibitor, MAPK8 inhibitor, MAPK9 inhibitor, MAPK10 inhibitor, MAPK11 inhibitor, MAPK12 inhibitor, MAPK13 inhibitor, MAPK14 inhibitor, and MAPK15 inhibitor), a MAPK kinase (MAPKK) inhibitor (including Mos/Ras kinase inhibitors), a MAPK kinase kinase (MAPKKK or MAP3K) inhibitor, a Tau-protein kinase (TPK) inhibitor, a non-specific serine/threonine protein kinase inhibitor, a Pyruvate dehydrogenase kinase (PDK) inhibitor, a Dephospho-(reductase kinase) kinase inhibitor, a 3-methyl-2-oxobutanoate dehydrogenase (acetyl-transferring) kinase inhibitor, a (isocitrate dehydrogenase (NADP+)) kinase inhibitor, a (tyrosine 3-monooxygenase) kinase inhibitor, a myosin-heavy-chain kinase inhibitor, a Fas-activated serine/threonine kinase inhibitor, a Goodpasture-antigen-binding protein kinase inhibitor, an I κ B kinase inhibitor, a cAMP-dependent protein kinase (or Protein kinase A, PKA) inhibitor, a cGMP-dependent protein kinase (or Protein kinase G, PKG) inhibitor, a Protein kinase B (PKB, or AKT kinase) inhibitor, a Protein kinase C (PKC) inhibitor, a phosphorylase kinase inhibitor, a Rho-associated protein kinase (ROCK) kinase inhibitor (including a ROCK 1 inhibitor and a ROCK 2 inhibitor), a Rhodopsin kinase inhibitor, a Beta adrenergic receptor kinase inhibitor, a G-protein coupled receptor kinase inhibitor, a Ca²⁺/calmodulin-dependent (CaM) kinase (CAMK) inhibitor, a Myosin light-chain kinase inhibitor, a Phosphorylase kinase inhibitor, an Elongation factor 2 kinase inhibitor.

[0062] A therapeutic compound disclosed herein may be a poly ADP ribose polymerase (PARP) inhibitor. PARP inhibitors are a group of pharmacological inhibitors of the enzyme poly ADP ribose polymerase (PARP). PARP inhibitors are used to treat cancer and are considered a potential treatment for acute life-threatening diseases, such as stroke and myocardial infarction, as well as for long-term neurodegenerative diseases. In some embodiments, a PARP inhibitor is a PARP 1 inhibitor or a PARP 2 inhibitor. Non-limiting examples of a PARP inhibitor include, without limitation, iniparib, olaparib, niraparib, rucaparib, talazoparib, and veliparib.

[0063] In one embodiment, a pharmaceutical composition disclosed herein comprises one or more therapeutic compounds in an amount of, e.g., about 0.05%, about 0.1%, about 1%, about 2.5%, about 5%, about 7.5%, about 10%, about 12.5%, about 15%, about 17.5%, about 20%, about 22.5%, about 25%, about 30%, about 35%, about 40%, about 45%, or about 50% by weight. In one embodiment, a

pharmaceutical composition disclosed herein comprises one or more therapeutic compounds in an amount of, e.g., at least 0.05%, at least 0.1%, at least 1%, at least 2.5%, at least 5%, at least 7.5%, at least 10%, at least 12.5%, at least 15%, at least 17.5%, at least 20%, at least 22.5%, at least 25%, at least 30%, at least 35%, at least 40%, at least 45%, or at least 50% by weight. In one embodiment, a pharmaceutical composition disclosed herein comprises one or more therapeutic compounds in an amount of, e.g., at most 0.05%, at most 0.1%, at most 1%, at most 2.5%, at most 5%, at most 7.5%, at most 10%, at most 12.5%, at most 15%, at most 17.5%, at most 20%, at most 22.5%, at most 25%, at most 30%, at most 35%, at most 40%, at most 45%, or at most 50% by weight.

[0064] In one embodiment, a pharmaceutical composition disclosed herein comprises one or more therapeutic compounds disclosed herein in an amount of, e.g., about 0.05% to about 1%, about 0.05% to about 2.5%, about 0.05% to about 5%, about 0.05% to about 7.5%, about 0.05% to about 10%, about 0.05% to about 12.5%, about 0.05% to about 15%, about 0.05% to about 17.5%, about 0.05% to about 20%, about 0.05% to about 22.5%, about 0.05% to about 25%, about 0.05% to about 30%, about 0.05% to about 40%, about 0.05% to about 50%, about 0.1% to about 1%, about 0.1% to about 2.5%, about 0.1% to about 5%, about 0.1% to about 7.5%, about 0.1% to about 10%, about 0.1% to about 12.5%, about 0.1% to about 15%, about 0.1% to about 17.5%, about 0.1% to about 20%, about 0.1% to about 22.5%, about 0.1% to about 25%, about 0.1% to about 30%, about 0.1% to about 40%, about 0.1% to about 50%, about 1% to about 2.5%, about 1% to about 5%, about 1% to about 7.5%, about 1% to about 10%, about 1% to about 12.5%, about 1% to about 15%, about 1% to about 17.5%, about 1% to about 20%, about 1% to about 22.5%, about 1% to about 25%, about 1% to about 30%, about 1% to about 40%, about 1% to about 50%, about 5% to about 10%, about 5% to about 20%, about 5% to about 30%, about 5% to about 40%, about 5% to about 50%, about 5% to about 60%, about 5% to about 70%, about 5% to about 80%, about 5% to about 90%, about 10% to about 20%, about 10% to about 30%, about 10% to about 40%, about 10% to about 50%, about 10% to about 60%, about 10% to about 70%, about 10% to about 80%, about 10% to about 90%, about 20% to about 30%, about 20% to about 40%, about 20% to about 50%, about 20% to about 60%, about 20% to about 70%, about 20% to about 80%, about 20% to about 90%, about 30% to about 40%, about 30% to about 50%, about 30% to about 60%, about 30% to about 70%, about 30% to about 80%, about 30% to about 90%, about 40% to about 50%, about 40% to about 60%, about 40% to about 70%, about 40% to about 80%, about 40% to about 90%, about 50% to about 60%, about 50% to about 70%, about 50% to about 80%, about 50% to about 90%, about 60% to about 70%, about 60% to about 80%, about 60% to about 90%, about 70% to about 80%, about 70% to about 90%, or about 80% to about 90% by weight.

[0065] In one embodiment, a pharmaceutical composition disclosed herein comprises one or more therapeutic compounds in a concentration of, e.g., about 5 mg/mL, about 10 mg/mL, about 15 mg/mL, about 20 mg/mL, about 25 mg/mL, about 30 mg/mL, about 35 mg/mL, about 40 mg/mL, about 45 mg/mL, about 50 mg/mL, about 60 mg/mL, about 65 mg/mL, about 70 mg/mL, about 75 mg/mL, about 100 mg/mL, about 125 mg/mL, about 150 mg/mL, about 175 mg/mL, about 200 mg/mL, about 225 mg/mL, about 250 mg/mL, about 275 mg/mL, about 300 mg/mL, about 325 mg/mL, about 350 mg/mL, about 375 mg/mL, about 400 mg/mL, about 425 mg/mL, about 450 mg/mL, about 475 mg/mL, about 500 mg/mL, about 525

mg/mL, about 550 mg/mL, about 575 mg/mL, or about 600 mg/mL. In one embodiment, a pharmaceutical composition disclosed herein comprises one or more therapeutic compounds in a concentration of, e.g., at least 5 mg/mL, at least 10 mg/mL, at least 15 mg/mL, at least 20 mg/mL, at least 25 mg/mL, at least 30 mg/mL, at least 35 mg/mL, at least 40 mg/mL, at least 45 mg/mL, at least 50 mg/mL, at least 60 mg/mL, at least 65 mg/mL, at least 70 mg/mL, at least 75 mg/mL, at least 100 mg/mL, at least 125 mg/mL, at least 150 mg/mL, at least 175 mg/mL, at least 200 mg/mL, at least 225 mg/mL, at least 250 mg/mL, at least 275 mg/mL, at least 300 mg/mL, at least 325 mg/mL, at least 350 mg/mL, at least 375 mg/mL, at least 400 mg/mL, at least 425 mg/mL, at least 450 mg/mL, at least 475 mg/mL, at least 500 mg/mL, at least 525 mg/mL, at least 550 mg/mL, at least 575 mg/mL, or at least 600 mg/mL. In one embodiment, a pharmaceutical composition disclosed herein comprises one or more therapeutic compounds in a concentration of, e.g., at most 5 mg/mL, at most 10 mg/mL, at most 15 mg/mL, at most 20 mg/mL, at most 25 mg/mL, at most 30 mg/mL, at most 35 mg/mL, at most 40 mg/mL, at most 45 mg/mL, at most 50 mg/mL, at most 60 mg/mL, at most 65 mg/mL, at most 70 mg/mL, at most 75 mg/mL, at most 100 mg/mL, at most 125 mg/mL, at most 150 mg/mL, at most 175 mg/mL, at most 200 mg/mL, at most 225 mg/mL, at most 250 mg/mL, at most 275 mg/mL, at most 300 mg/mL, at most 325 mg/mL, at most 350 mg/mL, at most 375 mg/mL, at most 400 mg/mL, at most 425 mg/mL, at most 450 mg/mL, at most 475 mg/mL, at most 500 mg/mL, at most 525 mg/mL, at most 550 mg/mL, at most 575 mg/mL, or at most 600 mg/mL.

[0066] In one embodiment, a pharmaceutical composition disclosed herein comprises one or more therapeutic compounds in a concentration of, e.g., about 5 mg/mL to about 10 mg/mL, about 5 mg/mL to about 25 mg/mL, about 5 mg/mL to about 50 mg/mL, about 5 mg/mL to about 75 mg/mL, about 5 mg/mL to about 100 mg/mL, about 5 mg/mL to about 125 mg/mL, about 5 mg/mL to about 150 mg/mL, about 5 mg/mL to about 200 mg/mL, about 5 mg/mL to about 250 mg/mL, about 5 mg/mL to about 300 mg/mL, about 5 mg/mL to about 350 mg/mL, about 5 mg/mL to about 400 mg/mL, about 5 mg/mL to about 450 mg/mL, about 5 mg/mL to about 500 mg/mL, about 5 mg/mL to about 550 mg/mL, about 5 mg/mL to about 600 mg/mL, about 10 mg/mL to about 25 mg/mL, about 10 mg/mL to about 50 mg/mL, about 10 mg/mL to about 75 mg/mL, about 10 mg/mL to about 100 mg/mL, about 10 mg/mL to about 125 mg/mL, about 10 mg/mL to about 150 mg/mL, about 10 mg/mL to about 200 mg/mL, about 10 mg/mL to about 250 mg/mL, about 10 mg/mL to about 300 mg/mL, about 10 mg/mL to about 350 mg/mL, about 10 mg/mL to about 400 mg/mL, about 10 mg/mL to about 450 mg/mL, about 10 mg/mL to about 500 mg/mL, about 10 mg/mL to about 550 mg/mL, about 10 mg/mL to about 600 mg/mL, about 25 mg/mL to about 50 mg/mL, about 25 mg/mL to about 75 mg/mL, about 25 mg/mL to about 100 mg/mL, about 25 mg/mL to about 125 mg/mL, about 25 mg/mL to about 150 mg/mL, about 25 mg/mL to about 200 mg/mL, about 25 mg/mL to about 250 mg/mL, about 25 mg/mL to about 300 mg/mL, about 25 mg/mL to about 350 mg/mL, about 25 mg/mL to about 400 mg/mL, about 25 mg/mL to about 450 mg/mL, about 25 mg/mL to about 500 mg/mL, about 25 mg/mL to about 550 mg/mL, about 25 mg/mL to about 600 mg/mL, about 50 mg/mL to about 100 mg/mL, about 50 mg/mL to about 150 mg/mL, about 50 mg/mL to about 200 mg/mL, about 50 mg/mL to about 250 mg/mL, about 50 mg/mL to about 300 mg/mL, about 50 mg/mL to about 350 mg/mL, about 50 mg/mL to about 400 mg/mL, about 50 mg/mL to about 450 mg/mL, about 50 mg/mL to about 500 mg/mL, about 50 mg/mL to about 550 mg/mL, about 50 mg/mL to about 600 mg/mL, about 75 mg/mL to about 100 mg/mL, about 75 mg/mL to about 150 mg/mL, about 75 mg/mL to about 200 mg/mL, about 75 mg/mL to about 250

mg/mL, about 75 mg/mL to about 300 mg/mL, about 75 mg/mL to about 350 mg/mL, about 75 mg/mL to about 400 mg/mL, about 75 mg/mL to about 450 mg/mL, about 75 mg/mL to about 500 mg/mL, about 75 mg/mL to about 550 mg/mL, about 75 mg/mL to about 600 mg/mL, about 100 mg/mL to about 150 mg/mL, about 100 mg/mL to about 200 mg/mL, about 100 mg/mL to about 250 mg/mL, about 100 mg/mL to about 300 mg/mL, about 100 mg/mL to about 350 mg/mL, about 100 mg/mL to about 400 mg/mL, about 100 mg/mL to about 450 mg/mL, about 100 mg/mL to about 500 mg/mL, about 100 mg/mL to about 550 mg/mL, about 100 mg/mL to about 600 mg/mL, about 150 mg/mL to about 200 mg/mL, about 150 mg/mL to about 250 mg/mL, about 150 mg/mL to about 300 mg/mL, about 150 mg/mL to about 350 mg/mL, about 150 mg/mL to about 400 mg/mL, about 150 mg/mL to about 450 mg/mL, about 150 mg/mL to about 500 mg/mL, about 150 mg/mL to about 550 mg/mL, about 150 mg/mL to about 600 mg/mL, about 200 mg/mL to about 250 mg/mL, about 200 mg/mL to about 300 mg/mL, about 200 mg/mL to about 350 mg/mL, about 200 mg/mL to about 400 mg/mL, about 200 mg/mL to about 450 mg/mL, about 200 mg/mL to about 500 mg/mL, about 200 mg/mL to about 550 mg/mL, about 200 mg/mL to about 600 mg/mL, about 250 mg/mL to about 300 mg/mL, about 250 mg/mL to about 350 mg/mL, about 250 mg/mL to about 400 mg/mL, about 250 mg/mL to about 450 mg/mL, about 250 mg/mL to about 500 mg/mL, about 250 mg/mL to about 550 mg/mL, about 250 mg/mL to about 600 mg/mL, about 300 mg/mL to about 350 mg/mL, about 300 mg/mL to about 400 mg/mL, about 300 mg/mL to about 450 mg/mL, about 300 mg/mL to about 500 mg/mL, about 300 mg/mL to about 550 mg/mL, about 300 mg/mL to about 600 mg/mL, about 350 mg/mL to about 400 mg/mL, about 350 mg/mL to about 450 mg/mL, about 350 mg/mL to about 500 mg/mL, about 350 mg/mL to about 550 mg/mL, about 350 mg/mL to about 600 mg/mL, about 400 mg/mL to about 450 mg/mL, about 400 mg/mL to about 500 mg/mL, about 400 mg/mL to about 550 mg/mL, about 400 mg/mL to about 600 mg/mL, about 450 mg/mL to about 500 mg/mL, about 450 mg/mL to about 550 mg/mL, about 450 mg/mL to about 600 mg/mL, about 500 mg/mL to about 550 mg/mL, about 500 mg/mL to about 600 mg/mL, and about 550 mg/mL to about 600 mg/mL.

[0067] In one embodiment, a pharmaceutical composition disclosed herein comprises one or more therapeutic compounds as a mixture of solubilized therapeutic compounds and solid particles of therapeutic compounds or entirely as solid particles. In embodiments where a pharmaceutical composition comprises one or more therapeutic compounds as both a solubilized component and a solid particle component, the solubilized component of one or more therapeutic compounds are dissolved in the lipid matrix comprising one or more glycerolipids and one or more digestion enhancers while the solid particle component of one or more therapeutic compounds are dispersed within the lipid matrix comprising one or more glycerolipids and one or more digestion enhancers. The solid particle component of one or more therapeutic compounds can be processed, by, e.g., micronization to create mean particle size of suitable to formulate a solid particle dispersion. In some embodiments, solubilized component consists of a therapeutic compound that is the same as the therapeutic compound contained within the solid particle component. In some embodiments, solubilized component consists of a therapeutic compound that is different than the therapeutic compound contained within the solid particle component.

[0068] In some embodiments, the mean particle size of one or more therapeutic compounds can be, e.g., about 5 nm, about 10 nm, about 25 nm, about 50 nm, about 75 nm, about 100 nm, about 200 nm, about

300 nm, about 400 nm, about 500 nm, about 600 nm, about 700 nm, about 800 nm, about 900 nm, about 1 μ m, about 2 μ m, about 3 μ m, about 4 μ m, about 5 μ m, about 6 μ m, about 7 μ m, about 8 μ m, about 9 μ m, about 10 μ m, about 11 μ m, about 12 μ m, about 13 μ m, about 14 μ m, about 15 μ m, about 16 μ m, about 17 μ m, about 18 μ m, about 19 μ m, or about 20 μ m. In some embodiments, the mean particle size of one or more therapeutic compounds can be, *e.g.*, at least 5 nm, at least 10 nm, at least 25 nm, at least 50 nm, at least 75 nm, at least 100 nm, at least 200 nm, at least 300 nm, at least 400 nm, at least 500 nm, at least 600 nm, at least 700 nm, at least 800 nm, at least 900 nm, at least 1 μ m, at least 2 μ m, at least 3 μ m, at least 4 μ m, at least 5 μ m, at least 6 μ m, at least 7 μ m, at least 8 μ m, at least 9 μ m, at least 10 μ m, at least 11 μ m, at least 12 μ m, at least 13 μ m, at least 14 μ m, at least 15 μ m, at least 16 μ m, at least 17 μ m, at least 18 μ m, at least 19 μ m, or at least 20 μ m. In some embodiments, the mean particle size of one or more therapeutic compounds can be, *e.g.*, at most 5 nm, at most 10 nm, at most 25 nm, at most 50 nm, at most 75 nm, at most 100 nm, at most 200 nm, at most 300 nm, at most 400 nm, at most 500 nm, at most 600 nm, at most 700 nm, at most 800 nm, at most 900 nm, at most 1 μ m, at most 2 μ m, at most 3 μ m, at most 4 μ m, at most 5 μ m, at most 6 μ m, at most 7 μ m, at most 8 μ m, at most 9 μ m, at most 10 μ m, at most 11 μ m, at most 12 μ m, at most 13 μ m, at most 14 μ m, at most 15 μ m, at most 16 μ m, at most 17 μ m, at most 18 μ m, at most 19 μ m, or at most 20 μ m. In some embodiments, the mean particle size of one or more therapeutic compounds can be, *e.g.*, about 5 nm to about 25 nm, about 5 nm to about 50 nm, about 5 nm to about 75 nm, about 5 nm to about 100 nm, about 25 nm to about 50 nm, about 25 nm to about 100 nm, about 25 nm to about 200 nm, about 25 nm to about 300 nm, about 25 nm to about 400 nm, about 25 nm to about 500 nm, about 100 nm to about 200 nm, about 100 nm to about 300 nm, about 100 nm to about 400 nm, about 100 nm to about 500 nm, about 100 nm to about 600 nm, about 100 nm to about 700 nm, about 100 nm to about 800 nm, about 100 nm to about 900 nm, about 500 nm to about 1 μ m, about 500 nm to about 2 μ m, about 500 nm to about 3 μ m, about 500 nm to about 4 μ m, about 500 nm to about 5 μ m, about 500 nm to about 6 μ m, about 500 nm to about 7 μ m, about 500 nm to about 8 μ m, about 500 nm to about 9 μ m, about 500 nm to about 10 μ m, about 1 μ m to about 5 μ m, about 1 μ m to about 10 μ m, about 1 μ m to about 15 μ m, about 1 μ m to about 20 μ m.

[0069] In some embodiments, a pharmaceutical composition comprises a solid particle component of one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids. In aspects of these embodiments, a pharmaceutical composition comprising a solid particle component of one or more therapeutic compounds is present in an amount of, *e.g.*, about 5% by weight, about 10% by weight, about 15% by weight, about 20% by weight, about 25% by weight, about 30% by weight, about 35% by weight, about 40% by weight, about 45% by weight, about 50% by weight, about 55% by weight, about 60% by weight, about 65% by weight, about 70% by weight, about 75% by weight, about 80% by weight, about 85% by weight, about 90% by weight, about 95% by weight, about 97% by weight, about 99% by weight, or about 100% by weight of the total weight amount of one or more therapeutic compounds. In other aspects of these embodiments, a pharmaceutical composition comprising a solid particle component of one or more therapeutic compounds is present in an amount of, *e.g.*, at least 5% by weight, at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, at least 75% by weight, at least 80% by weight, at least 85% by weight, at least 90% by weight, at least

95% by weight, at least 97% by weight, at least 99% by weight of the total weight amount of one or more therapeutic compounds. In yet other aspects of these embodiments, a pharmaceutical composition comprising a solid particle component of one or more therapeutic compounds is present in an amount of, e.g., at least 5% by weight, at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, at most 75% by weight, at most 80% by weight, at most 85% by weight, at most 90% by weight, at most 95% by weight, at most 97% by weight, at most 99% by weight of the total weight amount of one or more therapeutic compounds. In still other aspects of these embodiments, a pharmaceutical composition comprising a solid particle component of one or more therapeutic compounds is present in an amount of, e.g., about 1% to about 10%, about 1% to about 20%, about 1% to about 30%, about 1% to about 40%, about 1% to about 50%, about 1% to about 60%, about 1% to about 70%, about 1% to about 80%, about 1% to about 90%, about 1% to about 95%, about 1% to about 100%, about 10% to about 20%, about 10% to about 30%, about 10% to about 40%, about 10% to about 50%, about 10% to about 60%, about 10% to about 70%, about 10% to about 80%, about 10% to about 90%, about 10% to about 95%, about 10% to about 100%, about 20% to about 30%, about 20% to about 40%, about 20% to about 50%, about 20% to about 60%, about 20% to about 70%, about 20% to about 80%, about 20% to about 90%, about 20% to about 95%, about 20% to about 100%, about 30% to about 40%, about 30% to about 50%, about 30% to about 60%, about 30% to about 70%, about 30% to about 80%, about 30% to about 90%, about 30% to about 95%, about 30% to about 100%, about 40% to about 50%, about 40% to about 60%, about 40% to about 70%, about 40% to about 80%, about 40% to about 90%, about 40% to about 95%, about 40% to about 100%, about 50% to about 60%, about 50% to about 70%, about 50% to about 80%, about 50% to about 90%, about 50% to about 95%, about 50% to about 100%, about 60% to about 70%, about 60% to about 80%, about 60% to about 90%, about 60% to about 95%, about 60% to about 100%, about 70% to about 80%, about 70% to about 90%, about 70% to about 95%, about 70% to about 100%, about 80% to about 90%, about 80% to about 95%, about 80% to about 100%, about 90% to about 95%, about 90% to about 100%, or about 95% to about 100%, by weight of the total weight amount of one or more therapeutic compounds. The total weight amount of one or more therapeutic compounds is defined at the sum of the amount of the solid particle component and the solubilized component of one or more therapeutic compounds present in the pharmaceutical composition.

[0070] In some embodiments, a pharmaceutical composition comprises a solubilized component of one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In aspects of these embodiments, a pharmaceutical composition comprising a solubilized component of one or more therapeutic compounds is present in an amount of, e.g., about 5% by weight, about 10% by weight, about 15% by weight, about 20% by weight, about 25% by weight, about 30% by weight, about 35% by weight, about 40% by weight, about 45% by weight, about 50% by weight, about 55% by weight, about 60% by weight, about 65% by weight, about 70% by weight, about 75% by weight, about 80% by weight, about 85% by weight, about 90% by weight, about 95% by weight, about 97% by weight, about 99% by weight, or about 100% by weight of the total weight amount of one or more therapeutic compounds. In other aspects of these embodiments, a pharmaceutical composition comprising a solubilized component of

one or more therapeutic compounds is present in an amount of, e.g., at least 5% by weight, at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, at least 75% by weight, at least 80% by weight, at least 85% by weight, at least 90% by weight, at least 95% by weight, at least 97% by weight, at least 99% by weight of the total weight amount of one or more therapeutic compounds. In yet other aspects of these embodiments, a pharmaceutical composition comprising a solubilized component of one or more therapeutic compounds is present in an amount of, e.g., at least 5% by weight, at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, at most 75% by weight, at most 80% by weight, at most 85% by weight, at most 90% by weight, at most 95% by weight, at most 97% by weight, at most 99% by weight of the total weight amount of one or more therapeutic compounds. In still other aspects of these embodiments, a pharmaceutical composition comprising a solubilized component of one or more therapeutic compounds is present in an amount of, e.g., about 1% to about 10%, about 1% to about 20%, about 1% to about 30%, about 1% to about 40%, about 1% to about 50%, about 1% to about 60%, about 1% to about 70%, about 1% to about 80%, about 1% to about 90%, about 1% to about 95%, about 1% to about 100%, about 10% to about 20%, about 10% to about 30%, about 10% to about 40%, about 10% to about 50%, about 10% to about 60%, about 10% to about 70%, about 10% to about 80%, about 10% to about 90%, about 10% to about 95%, about 10% to about 100%, about 20% to about 30%, about 20% to about 40%, about 20% to about 50%, about 20% to about 60%, about 20% to about 70%, about 20% to about 80%, about 20% to about 90%, about 20% to about 95%, about 20% to about 100%, about 30% to about 40%, about 30% to about 50%, about 30% to about 60%, about 30% to about 70%, about 30% to about 80%, about 30% to about 90%, about 30% to about 95%, about 30% to about 100%, about 40% to about 50%, about 40% to about 60%, about 40% to about 70%, about 40% to about 80%, about 40% to about 90%, about 40% to about 95%, about 40% to about 100%, about 50% to about 60%, about 50% to about 70%, about 50% to about 80%, about 50% to about 90%, about 50% to about 95%, about 50% to about 100%, about 60% to about 70%, about 60% to about 80%, about 60% to about 90%, about 60% to about 95%, about 60% to about 100%, about 70% to about 80%, about 70% to about 90%, about 70% to about 95%, about 70% to about 100%, about 80% to about 90%, about 80% to about 95%, about 80% to about 100%, about 90% to about 95%, about 90% to about 100%, or about 95% to about 100%, by weight of the total weight amount of one or more therapeutic compounds.

[0071] In some embodiments, a pharmaceutical composition comprises a solid particle component having one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. In aspect of these embodiments, the ratio of a solid particle component to a solubilized component of one or more therapeutic compounds is, e.g., about 5:95, about 10:90, about 15:85, about 20:80, about 25:75, about 30:70, about 35:65, about 40:60, about 45:55, about 50:50, about 55:45, about 60:40, about 65:35, about 70:30, about 75:25, about 80:20, about

85:15, about 90:10, or about 95:5. In other aspect of these embodiments, the ratio of a solid particle component to a solubilized component of one or more therapeutic compounds is, e.g., at least 5:95, at least 10:90, at least 15:85, at least 20:80, at least 25:75, at least 30:70, at least 35:65, at least 40:60, at least 45:55, at least 50:50, at least 55:45, at least 60:40, at least 65:35, at least 70:30, at least 75:25, at least 80:20, at least 85:15, at least 90:10, or at least 95:5. In yet other aspect of these embodiments, the ratio of a solubilized component to solid particle component of one or more therapeutic compounds is, e.g., at most 5:95, at most 10:90, at most 15:85, at most 20:80, at most 25:75, at most 30:70, at most 35:65, at most 40:60, at most 45:55, at most 50:50, at most 55:45, at most 60:40, at most 65:35, at most 70:30, at most 75:25, at most 80:20, at most 85:15, at most 90:10, or at most 95:5.

[0072] In yet other aspect of these embodiments, the ratio a solid particle component to a solubilized component of one or more therapeutic compounds is, e.g., about 5:95 to about 10:90, about 5:95 to about 15:85, about 5:95 to about 20:80, about 5:95 to about 25:75, about 5:95 to about 30:60, about 5:95 to about 35:65, about 5:95 to about 40:60, about 5:95 to about 45:55, about 5:95 to about 50:50, about 5:95 to about 55:45, about 5:95 to about 60:40, about 5:95 to about 65:35, about 5:95 to about 70:30, about 5:95 to about 75:25, about 5:95 to about 80:20, about 5:95 to about 85:15, about 5:95 to about 90:10, about 5:95 to about 95:5, about 10:90 to about 15:85, about 10:90 to about 20:80, about 10:90 to about 25:75, about 10:90 to about 30:60, about 10:90 to about 35:65, about 10:90 to about 40:60, about 10:90 to about 45:55, about 10:90 to about 50:50, about 10:90 to about 55:45, about 10:90 to about 60:40, about 10:90 to about 65:35, about 10:90 to about 70:30, about 10:90 to about 75:25, about 10:90 to about 80:20, about 10:90 to about 85:15, about 10:90 to about 90:10, about 10:90 to about 95:5, about 15:85 to about 20:80, about 15:85 to about 25:75, about 15:85 to about 30:60, about 15:85 to about 35:65, about 15:85 to about 40:60, about 15:85 to about 45:55, about 15:85 to about 50:50, about 15:85 to about 55:45, about 15:85 to about 60:40, about 15:85 to about 65:35, about 15:85 to about 70:30, about 15:85 to about 75:25, about 15:85 to about 80:20, about 15:85 to about 85:15, about 15:85 to about 90:10, about 15:85 to about 95:5, about 20:80 to about 25:75, about 20:80 to about 30:60, about 20:80 to about 35:65, about 20:80 to about 40:60, about 20:80 to about 45:55, about 20:80 to about 50:50, about 20:80 to about 55:45, about 20:80 to about 60:40, about 20:80 to about 65:35, about 20:80 to about 70:30, about 20:80 to about 75:25, about 20:80 to about 80:20, about 20:80 to about 85:15, about 20:80 to about 90:10, about 20:80 to about 95:5, about 25:75 to about 30:60, about 25:75 to about 35:65, about 25:75 to about 40:60, about 25:75 to about 45:55, about 25:75 to about 50:50, about 25:75 to about 55:45, about 25:75 to about 60:40, about 25:75 to about 65:35, about 25:75 to about 70:30, about 25:75 to about 75:25, about 25:75 to about 80:20, about 25:75 to about 85:15, about 25:75 to about 90:10, about 25:75 to about 95:5, about 30:70 to about 35:65, about 30:70 to about 40:60, about 30:70 to about 45:55, about 30:70 to about 50:50, about 30:70 to about 55:45, about 30:70 to about 60:40, about 30:70 to about 65:35, about 30:70 to about 70:30, about 30:70 to about 75:25, about 30:70 to about 80:20, about 30:70 to about 85:15, about 30:70 to about 90:10, about 30:70 to about 95:5, about 35:65 to about 40:60, about 35:65 to about 45:55, about 35:65 to about 50:50, about 35:65 to about 55:45, about 35:65 to about 60:40, about 35:65 to about 65:35, about 35:65 to about 70:30, about 35:65 to about 75:25, about 35:65 to about 80:20, about 35:65 to about 85:15, about 35:65 to about 90:10, about 35:65 to about 95:5, about 40:60 to about 45:55, about 40:60 to about 50:50, about 40:60 to about 55:45, about 40:60 to about 60:40, about 40:60 to about 65:35, about 40:60 to about 70:30, about 40:60 to

about 75:25, about 40:60 to about 80:20, about 40:60 to about 85:15, about 40:60 to about 90:10, about 40:60 to about 95:5, about 45:55 to about 50:50, about 45:55 to about 55:45, about 45:55 to about 60:40, about 45:55 to about 65:35, about 45:55 to about 70:30, about 45:55 to about 75:25, about 45:55 to about 80:20, about 45:55 to about 85:15, about 45:55 to about 90:10, about 45:55 to about 95:5, about 50:50 to about 55:45, about 50:50 to about 60:40, about 50:50 to about 65:35, about 50:50 to about 70:30, about 50:50 to about 75:25, about 50:50 to about 80:20, about 50:50 to about 85:15, about 50:50 to about 90:10, about 50:50 to about 95:5, about 55:45 to about 60:40, about 55:45 to about 65:35, about 55:45 to about 70:30, about 55:45 to about 75:25, about 55:45 to about 80:20, about 55:45 to about 85:15, about 55:45 to about 90:10, about 55:45 to about 95:5, about 60:40 to about 65:35, about 60:40 to about 70:30, about 60:40 to about 75:25, about 60:40 to about 80:20, about 60:40 to about 85:15, about 60:40 to about 90:10, about 60:40 to about 95:5, about 65:35 to about 70:30, about 65:35 to about 75:25, about 65:35 to about 80:20, about 65:35 to about 85:15, about 65:35 to about 90:10, about 65:35 to about 95:5, about 70:30 to about 75:25, about 70:30 to about 80:20, about 70:30 to about 85:15, about 70:30 to about 90:10, about 70:30 to about 95:5, about 75:25 to about 80:20, about 75:25 to about 85:15, about 75:25 to about 90:10, about 75:25 to about 95:5, about 80:20 to about 85:15, about 80:20 to about 90:10, about 80:20 to about 95:5, about 85:15 to about 90:10, about 85:15 to about 95:5, or about 90:10 to about 95:5. In a preferred aspect of these embodiments, the ratio of a solid particle component to a solubilized component of one or more therapeutic compounds is about 60:40 to about 40:60, and more preferably 55:45 to about 45:55.

Glycerolipids

[0073] A pharmaceutical composition disclosed herein may comprise one or more glycerolipids. Glycerolipids are composed mainly of mono-, di-, and tri-substituted glycerols and are hydrophobic molecules having an HLB of less than 4. One group of glycerolipids is the glycerides, where one, two, or all three hydroxyl groups of glycerol are each esterified using a fatty acid to produce monoglycerides, diglycerides, and triglycerides, respectively. In these compounds, each hydroxyl group of glycerol may be esterified by the same fatty acid or different fatty acids. In some embodiments, a monoglyceride disclosed herein may include a saturated or unsaturated fatty acid having a carbon length of C₁₂-C₂₄. In some embodiments, a diglyceride disclosed herein may include one saturated or unsaturated fatty acid having a carbon length of C₁₂-C₂₄, or two saturated or unsaturated fatty acids each having a carbon length of C₁₂-C₂₄. In some embodiments, a triglyceride disclosed herein may include one saturated or unsaturated fatty acid having a carbon length of C₁₂-C₂₄, two saturated or unsaturated fatty acids each having a carbon length of C₁₂-C₂₄, or three saturated or unsaturated fatty acids each having a carbon length of C₁₂-C₂₄.

[0074] Two types of glycerolipids are used in formulating one or more therapeutic compounds disclosed herein to produce a pharmaceutical composition disclosed herein. One type is hard fats, namely glycerolipids that are solid at 18°C. A disclosed hard fat or glycerolipid that is solid at 18°C has several purposes. During the formulation process of a pharmaceutical composition disclosed herein, a hard fat complex with a therapeutic compound disclosed herein, stabilizes it in a glycerolipid matrix that prevents the compound from precipitating out. Additionally, during administration of a pharmaceutical composition disclosed herein, a hard fat disclosed herein triggers the lipid digestion process stimulating the release of

bile from the gallbladder to enhance the emulsification of the administered pharmaceutical composition. Furthermore, the hard fats present in the pharmaceutical composition serve as substrates for pancreatic lipase which breaks down these hard fats into glycerol and free fatty acids. The presence of these digested lipid molecules triggers their absorption, along with the associated therapeutic compound, by the enterocytes lining the lumen of the duodenum of the small intestine. Once internalized, the enterocytes subsequent process and distribute the free fatty acid/therapeutic compound mixture into the lymphatic system. A disclosed hard fat or glycerolipid that is solid at 18°C does not have emulsion forming properties since these lipids do not exhibit a critical micelle concentration. As such, another purpose of a disclosed hard fat or glycerolipid that is solid at 18°C is to prevent formulary components that do possess a critical micelle concentration from initiating emulsification by diluting these components to below their critical micelle concentration and providing an anhydrous environment that reduces the necessary interaction of these components to initiate emulsification.

[0075] The other type of glycerolipid used in formulating one or more therapeutic compounds disclosed herein is liquid fats or oils, namely glycerolipids that are liquid at 18°C. The primary purposes of a disclosed liquid fat or glycerolipid that is liquid at 18°C is as a solvent that facilitates dissolution of a therapeutic compound disclosed herein as well as a stabilizing agent that prevents a disclosed therapeutic compound from precipitating out of the glycerolipid matrix. A disclosed liquid fat or glycerolipid that is liquid at 18°C do not have emulsion forming properties since these lipids do not exhibit a critical micelle concentration. As such, another purpose of a disclosed liquid fat or glycerolipid that is liquid at 18°C is to prevent formulary components that do possess a critical micelle concentration from initiating emulsification by diluting these components to below their critical micelle concentration and providing an anhydrous environment that reduces the necessary interaction of these components to initiate emulsification.

[0076] In some embodiments, a pharmaceutical composition disclosed herein may include one or more glycerolipids in an amount of, *e.g.*, about 20% by weight, about 25% by weight, about 30% by weight, about 35% by weight, about 40% by weight, about 45% by weight, about 50% by weight, about 55% by weight, about 60% by weight, about 65% by weight, about 70% by weight, about 75% by weight, about 80% by weight, about 85% by weight, about 90% by weight, or about 95% by weight. In some embodiments, a pharmaceutical composition disclosed herein may include one or more glycerolipids in an amount of, *e.g.*, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, at least 75% by weight, at least 80% by weight, at least 85% by weight, at least 90% by weight, or at least 95% by weight. In some embodiments, a pharmaceutical composition disclosed herein may include one or more glycerolipids in an amount of, *e.g.*, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, at most 75% by weight, at most 80% by weight, at most 85% by weight, at most 90% by weight, at most 95% by weight, or at most 99% by weight.

[0077] In some embodiments, a pharmaceutical composition disclosed herein may include one or more glycerolipids in an amount of, e.g., about 20% to about 30%, about 20% to about 40%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 20% to about 70%, about 20% to about 80%, about 20% to about 90%, about 25% to about 30%, about 25% to about 40%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 25% to about 70%, about 25% to about 80%, about 25% to about 90%, about 30% to about 40%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 30% to about 70%, about 30% to about 80%, about 30% to about 90%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 40% to about 65%, about 40% to about 70%, about 40% to about 75%, about 40% to about 80%, about 40% to about 85%, about 40% to about 90%, about 40% to about 95%, about 45% to about 55%, about 45% to about 60%, about 45% to about 65%, about 45% to about 70%, about 45% to about 75%, about 45% to about 80%, about 45% to about 85%, about 45% to about 90%, about 45% to about 95%, about 50% to about 55%, about 50% to about 60%, about 50% to about 65%, about 50% to about 70%, about 50% to about 75%, about 50% to about 80%, about 50% to about 85%, about 50% to about 90%, about 50% to about 95%, about 55% to about 60%, about 55% to about 65%, about 55% to about 70%, about 55% to about 75%, about 55% to about 80%, about 55% to about 85%, about 55% to about 90%, about 55% to about 95%, about 60% to about 65%, about 60% to about 70%, about 60% to about 75%, about 60% to about 80%, about 60% to about 85%, about 60% to about 90%, about 60% to about 95%, about 65% to about 70%, about 65% to about 75%, about 65% to about 80%, about 65% to about 85%, about 65% to about 90%, about 65% to about 95%, about 70% to about 75%, about 70% to about 80%, about 70% to about 85%, about 70% to about 90%, about 70% to about 95%, about 75% to about 80%, about 75% to about 85%, about 75% to about 90%, about 75% to about 95%, about 80% to about 85%, about 80% to about 90%, about 80% to about 95%, about 80% to about 99%, about 85% to about 90%, about 85% to about 95%, about 85% to about 99%, about 90% to about 95%, or about 90% to about 99% by weight.

[0078] In some embodiments, a pharmaceutical composition disclosed herein comprises one or more glycerolipids comprising one or more hard fats or glycerolipids that are solid at 18°C. In some embodiments, a pharmaceutical composition disclosed herein comprises one or more glycerolipids comprising one or more liquid fats or glycerolipids that are liquid at 18°C. In some embodiments, a pharmaceutical composition disclosed herein comprises one or more hard fats or glycerolipids that are solid at 18°C and one or more glycerolipids comprising one or more liquid fats or glycerolipids that are liquid at 18°C.

[0079] In some embodiments, pharmaceutical composition disclosed herein may include one or more hard fats or glycerolipids that are solid at 18°C comprising, or consisting essentially of or consisting of a mixture of saturated C₁₀-C₁₈ triglycerides, a mixture of saturated C₁₀-C₂₀ triglycerides, a mixture of saturated C₁₀-C₂₂ triglycerides, a mixture of saturated C₁₀-C₂₄ triglycerides, a mixture of saturated C₁₂-C₁₈ triglycerides, a mixture of saturated C₁₂-C₂₀ triglycerides, a mixture of saturated C₁₂-C₂₂ triglycerides, a mixture of saturated C₁₂-C₂₄ triglycerides, a mixture of saturated C₁₄-C₁₈ triglycerides, a mixture of saturated C₁₄-C₂₀ triglycerides, a mixture of saturated C₁₄-C₂₂ triglycerides, a mixture of saturated C₁₄-C₂₄ triglycerides, a mixture of saturated C₁₆-C₁₈ triglycerides, a mixture of saturated C₁₆-C₂₀ triglycerides, a mixture of saturated

C₁₆-C₂₂ triglycerides, a mixture of saturated C₁₆-C₂₄ triglycerides, a mixture of saturated C₁₈-C₂₀ triglycerides, a mixture of saturated C₁₈-C₂₂ triglycerides, a mixture of saturated C₁₈-C₂₄ triglycerides, a mixture of saturated C₂₀-C₂₂ triglycerides, or a mixture of saturated C₂₂-C₂₄ triglycerides.

[0080] In some embodiments, pharmaceutical composition disclosed herein may include one or more hard fats or glycerolipids that are solid at 18°C comprising, or consisting essentially of or consisting of a mixture of unsaturated C₁₀-C₁₈ triglycerides, a mixture of unsaturated C₁₀-C₂₀ triglycerides, a mixture of unsaturated C₁₀-C₂₂ triglycerides, a mixture of unsaturated C₁₀-C₂₄ triglycerides, a mixture of unsaturated C₁₂-C₁₈ triglycerides, a mixture of unsaturated C₁₂-C₂₀ triglycerides, a mixture of unsaturated C₁₂-C₂₂ triglycerides, a mixture of unsaturated C₁₂-C₂₄ triglycerides, a mixture of unsaturated C₁₄-C₁₈ triglycerides, a mixture of unsaturated C₁₄-C₂₀ triglycerides, a mixture of unsaturated C₁₄-C₂₂ triglycerides, a mixture of unsaturated C₁₄-C₂₄ triglycerides, a mixture of unsaturated C₁₆-C₁₈ triglycerides, a mixture of unsaturated C₁₆-C₂₀ triglycerides, a mixture of unsaturated C₁₆-C₂₂ triglycerides, a mixture of unsaturated C₁₆-C₂₄ triglycerides, a mixture of unsaturated C₁₈-C₂₀ triglycerides, a mixture of unsaturated C₁₈-C₂₂ triglycerides, a mixture of unsaturated C₁₈-C₂₄ triglycerides, a mixture of unsaturated C₂₀-C₂₂ triglycerides, or a mixture of unsaturated C₂₂-C₂₄ triglycerides.

[0081] In some embodiments, pharmaceutical composition disclosed herein may include one or more hard fats or glycerolipids that are solid at 18°C comprising, or consisting essentially of or consisting of a mixture of saturated and unsaturated C₁₀-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ triglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ triglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ triglycerides.

[0082] In some embodiments, a pharmaceutical composition disclosed herein may include one or more hard fats or glycerolipids that are solid at 18°C comprising, or consisting essentially of or consisting of a mixture of triglycerides having a melting point of, e.g., about 25°C, about 26°C, about 27°C, about 28°C, about 29°C, about 30°C, about 31°C, about 32°C, about 33°C, about 34°C, about 35°C, about 36°C, about 37°C, about 38°C, about 39°C, about 40°C, about 41°C, about 43°C, about 43°C, about 44°C, about 45°C, about 45°C, about 47°C, about 48°C, about 49°C, or about 50°C. In some embodiments, a pharmaceutical composition disclosed herein may include one or more hard fats or glycerolipids that are solid at 18°C comprising, or consisting essentially of or consisting of a mixture of triglycerides having a melting point of,

e.g., at least 25°C, at least 26°C, at least 27°C, at least 28°C, at least 29°C, at least 30°C, at least 31°C, at least 32°C, at least 33°C, at least 34°C, at least 35°C, at least 36°C, at least 37°C, at least 38°C, at least 39°C, at least 40°C, at least 41°C, at least 43°C, at least 43°C, at least 44°C, at least 45°C, at least 45°C, at least 47°C, at least 48°C, at least 49°C, or at least 50°C. In some embodiments, a pharmaceutical composition disclosed herein may include one or more hard fats or glycerolipids that are solid at 18°C comprising, or consisting essentially of or consisting of a mixture of triglycerides having a melting point of, *e.g.*, at most 25°C, at most 26°C, at most 27°C, at most 28°C, at most 29°C, at most 30°C, at most 31°C, at most 32°C, at most 33°C, at most 34°C, at most 35°C, at most 36°C, at most 37°C, at most 38°C, at most 39°C, at most 40°C, at most 41°C, at most 43°C, at most 43°C, at most 44°C, at most 45°C, at most 45°C, at most 47°C, at most 48°C, at most 49°C, or at most 50°C.

[0083] In some embodiment, a pharmaceutical composition disclosed herein may include one or more hard fats or glycerolipids that are solid at 18°C comprising, or consisting essentially of or consisting of a mixture of triglycerides having a melting point of, *e.g.*, about 25°C to about 37°C, about 25°C to about 38°C, about 25°C to about 39°C, about 25°C to about 40°C, about 25°C to about 41°C, about 25°C to about 42°C, about 25°C to about 43°C, about 25°C to about 44°C, about 25°C to about 45°C, about 25°C to about 46°C, about 25°C to about 47°C, about 25°C to about 48°C, about 25°C to about 49°C, about 25°C to about 50°C, about 28°C to about 37°C, about 28°C to about 38°C, about 28°C to about 39°C, about 28°C to about 40°C, about 28°C to about 41°C, about 28°C to about 42°C, about 28°C to about 43°C, about 28°C to about 44°C, about 28°C to about 45°C, about 28°C to about 46°C, about 28°C to about 47°C, about 28°C to about 48°C, about 28°C to about 49°C, about 28°C to about 50°C, about 30°C to about 37°C, about 30°C to about 38°C, about 30°C to about 39°C, about 30°C to about 40°C, about 30°C to about 41°C, about 30°C to about 42°C, about 30°C to about 43°C, about 30°C to about 44°C, about 30°C to about 45°C, about 30°C to about 46°C, about 30°C to about 47°C, about 30°C to about 48°C, about 30°C to about 49°C, about 30°C to about 50°C, about 32°C to about 44°C, about 32°C to about 45°C, about 32°C to about 46°C, about 32°C to about 47°C, about 32°C to about 48°C, about 32°C to about 49°C, about 32°C to about 50°C, about 34°C to about 44°C, about 34°C to about 45°C, about 34°C to about 46°C, about 34°C to about 47°C, about 34°C to about 48°C, about 34°C to about 49°C, about 34°C to about 50°C, about 36°C to about 44°C, about 36°C to about 45°C, about 36°C to about 46°C, about 36°C to about 47°C, about 36°C to about 48°C, about 36°C to about 49°C, about 36°C to about 50°C, about 38°C to about 44°C, about 38°C to about 45°C, about 38°C to about 46°C, about 38°C to about 47°C, about 38°C to about 48°C, about 38°C to about 49°C, about 38°C to about 50°C, about 40°C to about 44°C, about 40°C to about 45°C, about 40°C to about 46°C, about 40°C to about 47°C, about 40°C to about 48°C, about 40°C to about 49°C, about 40°C to about 50°C, about 42°C to about 44°C, about 42°C to about 45°C, about 42°C to about 46°C, about 42°C to about 47°C, about 42°C to about 48°C, about 42°C to about 49°C, or about 42°C to about 50°C.

[0084] In some embodiments, a pharmaceutical composition disclosed herein may include one or more hard fats or glycerolipids that are solid at 18°C comprising, or consisting essentially of or consisting of a mixture of triglycerides in an amount of, *e.g.*, about 10% by weight, about 15% by weight, about 20% by weight, about 25% by weight, about 30% by weight, about 35% by weight, about 40% by weight, about 45% by weight, about 50% by weight, about 55% by weight, about 60% by weight, about 65% by weight,

about 70% by weight, or about 75% by weight. In some embodiments, a pharmaceutical composition disclosed herein may include one or more hard fats or glycerolipids that are solid at 18°C comprising, or consisting essentially of or consisting of a mixture of triglycerides in an amount of, *e.g.*, at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, or at least 75% by weight. In some embodiments, a pharmaceutical composition disclosed herein may include one or more hard fats or glycerolipids that are solid at 18°C comprising, or consisting essentially of or consisting of a mixture of triglycerides in an amount of, *e.g.*, at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, at most 75% by weight, at most 80% by weight, at most 85% by weight, at most 90% by weight, at most 95% by weight, or at most 99% by weight.

[0085] In some embodiments, a pharmaceutical composition disclosed herein may include one or more hard fats or glycerolipids that are solid at 18°C comprising, or consisting essentially of or consisting of a mixture of triglycerides in an amount of, *e.g.*, about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 10% to about 65%, about 10% to about 70%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 15% to about 65%, about 15% to about 70%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 20% to about 65%, about 20% to about 70%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 25% to about 65%, about 25% to about 70%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 30% to about 65%, about 30% to about 70%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 35% to about 65%, about 35% to about 70%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 40% to about 65%, about 40% to about 70%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 45% to about 65%, about 45% to about 70%, about 50% to about 55%, about 50% to about 60%, about 50% to about 65%, about 50% to about 70%, about 55% to about 60%, about 55% to about 65%, about 55% to about 70%, about 60% to about 65%, about 60% to about 70%, or about 65% to about 70% by weight.

[0086] In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising or consisting essentially of or consisting of a mixture of mono-, di- and triglycerides. In some embodiments, pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising, or consisting

essentially of or consisting of a mixture of unsaturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of unsaturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of unsaturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of unsaturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of unsaturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈ triglycerides, a mixture of unsaturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a mixture of unsaturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of unsaturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of unsaturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of unsaturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of unsaturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of unsaturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides, a mixture of unsaturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of unsaturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of unsaturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of unsaturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of unsaturated C₁₈-C₂₀ monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of unsaturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of unsaturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of unsaturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of unsaturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.

[0087] In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising, or consisting essentially of or consisting of a mixture of saturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of saturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of saturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of saturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of saturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈ triglycerides, a mixture of saturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a mixture of saturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of saturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of saturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of saturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of saturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of saturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides, a mixture of saturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of saturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of saturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of saturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of saturated C₁₈-C₂₀

monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of saturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of saturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of saturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of saturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.

[0088] In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising, or consisting essentially of or consisting of a mixture of saturated and unsaturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.

[0089] In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising, or consisting essentially of or consisting of a mixture of mono-, di- and triglycerides having a melting point of, *e.g.*, at most 15°C, at most 16°C, at most 17°C, at most 18°C, at most 19°C, or at most 20°C. In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising, or consisting essentially of or consisting of a mixture of mono-, di- and triglycerides having a melting point between, *e.g.*, about 0°C to about 5°C, about 0°C to about 10°C, about 0°C to about 15°C, about 0°C to about 20°C, about 0°C to about 22°C, about 0°C to about 25°C, about 5°C to about 10°C, about 5°C to about 15°C, about 5°C to about 20°C, about 5°C to about 22°C, about 5°C to about 25°C, about 10°C to

about 15°C, about 10°C to about 20°C, about 10°C to about 22°C, about 10°C to about 25°C, about 15°C to about 20°C, about 15°C to about 22°C, or about 15°C to about 25°C.

[0090] In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising or consisting essentially of or consisting of a mixture of mono-, di-, and/or triglycerides in an amount of, *e.g.*, about 10% by weight, about 15% by weight, about 20% by weight, about 25% by weight, about 30% by weight, about 35% by weight, about 40% by weight, about 45% by weight, about 50% by weight, about 55% by weight, about 60% by weight, about 65% by weight, about 70% by weight, or about 75% by weight. In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising or consisting essentially of or consisting of a mixture of mono-, di-, and/or triglycerides in an amount of, *e.g.*, at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, or at least 75% by weight. In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising or consisting essentially of or consisting of a mixture of mono-, di-, and/or triglycerides in an amount of, *e.g.*, at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, or at most 75% by weight.

[0091] In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising or consisting essentially of or consisting of a mixture of mono-, di-, and/or triglycerides in an amount of, *e.g.*, about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 10% to about 65%, about 10% to about 70%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 15% to about 65%, about 15% to about 70%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 20% to about 65%, about 20% to about 70%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 25% to about 65%, about 25% to about 70%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 30% to about 65%, about 30% to about 70%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 35% to about 65%, about 35% to about 70%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 40% to about 65%, about 40% to about 70%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 45% to

about 65%, about 45% to about 70%, about 50% to about 55%, about 50% to about 60%, about 50% to about 65%, about 50% to about 70%, about 55% to about 60%, about 55% to about 65%, about 55% to about 70%, about 60% to about 65%, about 60% to about 70%, or about 65% to about 70% by weight.

[0092] In some embodiments, pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising or consisting essentially of or consisting of one or more monoglycerides. A monoglyceride includes, without limitation, glycerol monomyristoleate, glycerol monopalmitoleate, glycerol monosapienate, glycerol monooleate, glycerol monoelaidate, glycerol monovaccenate, glycerol monolinoleate, glycerol monolinoleidate, glycerol monolinolenate, glycerol monostearidonate, glycerol monoeicosenoate, glycerol monomeadate, glycerol monoarachidonate, glycerol monoeicosapentaenoate, glycerol monoerucate, glycerol monodocosahexaenoate, and glycerol mononervonate.

[0093] In some embodiments, pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising, or consisting essentially of or consisting of unsaturated C₁₀-C₁₈ monoglycerides, unsaturated C₁₀-C₂₀ monoglycerides, unsaturated C₁₀-C₂₂ monoglycerides, unsaturated C₁₀-C₂₄ monoglycerides, unsaturated C₁₂-C₁₈ monoglycerides, unsaturated C₁₂-C₂₀ monoglycerides, unsaturated C₁₂-C₂₂ monoglycerides, unsaturated C₁₂-C₂₄ monoglycerides, unsaturated C₁₄-C₁₈ monoglycerides, unsaturated C₁₄-C₂₀ monoglycerides, unsaturated C₁₄-C₂₂ monoglycerides, unsaturated C₁₄-C₂₄ monoglycerides, unsaturated C₁₆-C₁₈ monoglycerides, unsaturated C₁₆-C₂₀ monoglycerides, unsaturated C₁₆-C₂₂ monoglycerides, unsaturated C₁₆-C₂₄ monoglycerides, unsaturated C₁₈-C₂₀ monoglycerides, unsaturated C₁₈-C₂₂ monoglycerides, unsaturated C₁₈-C₂₄ monoglycerides, unsaturated C₂₀-C₂₂ monoglycerides, or unsaturated C₂₂-C₂₄ monoglycerides.

[0094] In some embodiments, pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising, or consisting essentially of or consisting of saturated C₁₀-C₁₈ monoglycerides, saturated C₁₀-C₂₀ monoglycerides, saturated C₁₀-C₂₂ monoglycerides, saturated C₁₀-C₂₄ monoglycerides, saturated C₁₂-C₁₈ monoglycerides, saturated C₁₂-C₂₀ monoglycerides, saturated C₁₂-C₂₂ monoglycerides, saturated C₁₂-C₂₄ monoglycerides, saturated C₁₄-C₁₈ monoglycerides, saturated C₁₄-C₂₀ monoglycerides, saturated C₁₄-C₂₂ monoglycerides, saturated C₁₄-C₂₄ monoglycerides, saturated C₁₆-C₁₈ monoglycerides, saturated C₁₆-C₂₀ monoglycerides, saturated C₁₆-C₂₂ monoglycerides, saturated C₁₆-C₂₄ monoglycerides, saturated C₁₈-C₂₀ monoglycerides, saturated C₁₈-C₂₂ monoglycerides, saturated C₁₈-C₂₄ monoglycerides, saturated C₂₀-C₂₂ monoglycerides, or saturated C₂₂-C₂₄ monoglycerides.

[0095] In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising, or consisting essentially of or consisting of a mixture of saturated and unsaturated C₁₀-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ monoglycerides, a mixture of saturated and unsaturated

C₁₂-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ monoglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ monoglycerides.

[0096] In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising, or consisting essentially of or consisting of a monoglyceride having a melting point of, *e.g.*, at most 15°C, at most 16°C, at most 17°C, at most 18°C, at most 19°C, or at most 20°C. In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising, or consisting essentially of or consisting of a monoglyceride having a melting point between, *e.g.*, about 0°C to about 5°C, about 0°C to about 10°C, about 0°C to about 15°C, about 0°C to about 20°C, about 0°C to about 22°C, about 0°C to about 25°C, about 5°C to about 10°C, about 5°C to about 15°C, about 5°C to about 20°C, about 5°C to about 22°C, about 5°C to about 25°C, about 10°C to about 15°C, about 10°C to about 20°C, about 10°C to about 22°C, about 10°C to about 25°C, about 15°C to about 20°C, about 15°C to about 22°C, or about 15°C to about 25°C.

[0097] In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising or consisting essentially of or consisting of one or more monoglycerides in an amount of, *e.g.*, about 10% by weight, about 15% by weight, about 20% by weight, about 25% by weight, about 30% by weight, about 35% by weight, about 40% by weight, about 45% by weight, about 50% by weight, about 55% by weight, about 60% by weight, about 65% by weight, about 70% by weight, or about 75% by weight. In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising or consisting essentially of or consisting of one or more monoglycerides in an amount of, *e.g.* at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, or at least 75% by weight. In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising or consisting essentially of or consisting of one or more monoglycerides in an amount of, *e.g.*, at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, or at most 75% by weight.

[0098] In some embodiments, a pharmaceutical composition disclosed herein may include one or more liquid fats or glycerolipids that are liquid at 18°C comprising or consisting essentially of or consisting of one or more monoglycerides in an amount of, e.g., about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 10% to about 65%, about 10% to about 70%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 15% to about 65%, about 15% to about 70%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 20% to about 65%, about 20% to about 70%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 25% to about 65%, about 25% to about 70%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 30% to about 65%, about 30% to about 70%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 35% to about 65%, about 35% to about 70%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 40% to about 65%, about 40% to about 70%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 45% to about 65%, about 45% to about 70%, about 50% to about 55%, about 50% to about 60%, about 50% to about 65%, about 50% to about 70%, about 55% to about 60%, about 55% to about 65%, about 55% to about 70%, about 60% to about 65%, about 60% to about 70%, or about 65% to about 70% by weight.

[0099] Commercially available hard fats or glycerolipids that are solid at 18°C include, without limitation, Cocoa butter, mixtures of saturated C₁₀-C₁₈ triglycerides having a melting point around 33°C (GELUCIRE® 33/01), mixtures of saturated C₁₀-C₁₈ triglycerides having a melting point around 39°C (GELUCIRE® 39/01), and mixtures of saturated C₁₀-C₁₈ triglycerides having a melting point around 43°C (GELUCIRE® 43/01), Commercially available liquid fats or glycerolipids that are liquid at 18°C include, without limitation, a hydrolyzed corn oil including glycerol monolinoleate (MAISINE™ 35-1, MAISINE™ CC). In some embodiments, a hydrolyzed corn oil including glycerol monolinoleate (MAISINE™ 35-1, MAISINE™ CC) comprises about 32% to 52% monoglycerides including glycerol monolinoleate, about 40% to 50% diglycerides, and about 5% to 30% triglycerides.

[0100] A pharmaceutical composition disclosed herein comprises any ratio of hard fats or glycerolipids that are solid at 18°C to liquid fats or glycerolipids that are liquid at 18°C that stabilizes one or more therapeutic compounds disclosed herein in a manner that prevents precipitation of the one or more therapeutic compounds. In some embodiments, a pharmaceutical composition disclosed herein comprises a hard fats or glycerolipids that are solid at 18°C to a liquid fats or glycerolipids that are liquid at 18°C ratio of, e.g., about 5:1, about 4:1, about 3:1, about 2:1, or about 1:1. In some embodiments, a pharmaceutical composition disclosed herein comprises a hard fats or glycerolipids that are solid at 18°C to a liquid fats or glycerolipids that are liquid at 18°C ratio of, e.g., about 5:1 to about 4:1, about 5:1 to about 3:1, about 5:1

to about 2:1, about 5:1 to about 1:1, about 4:1 to about 3:1, about 4:1 to about 2:1, about 4:1 to about 1:1, about 3:1 to about 2:1, about 3:1 to about 1:1, or about 2:1 to about 1:1.

[0101] In some embodiments, a pharmaceutical composition disclosed herein comprises a hard fats or glycerolipids that are solid at 18°C to a liquid fats or glycerolipids that are liquid at 18°C ratio of, e.g., about 1:5, about 1:4, about 1:3, or about 1:2. In some embodiments, a pharmaceutical composition disclosed herein comprises a hard fats or glycerolipids that are solid at 18°C to a liquid fats or glycerolipids that are liquid at 18°C ratio of, e.g., about 1:5 to about 1:4, about 1:5 to about 1:3, about 1:5 to about 1:2, about 1:5 to about 1:1, about 1:4 to about 1:3, about 1:4 to about 1:2, about 1:4 to about 1:1, about 1:3 to about 1:2, about 1:3 to about 1:1, or about 1:2 to about 1:1.

Digestion Enhancers

[0102] A pharmaceutical composition disclosed herein may comprise one or more digestion enhancers. The primary purposes of the one or more digestion enhancers are to enhance solubility of a therapeutic compound disclosed herein within the glycerolipid admixture, to enhance absorption of a therapeutic compound disclosed herein thereby improving the pharmacokinetics of the compound, and/or to improve availability and facilitate selected bio-distribution of a therapeutic compound disclosed herein thereby improving the pharmacodynamics of the compound. These improved properties are achieved by the one or more digestion enhancers by creating a pre-lipid digestion formulation of a therapeutic compound disclosed herein which facilitates and enhances the processing of the one or more glycerolipids disclosed herein when a pharmaceutical composition disclosed herein enters the duodenum region of the small intestine. Such glycerolipid processing enables the one or more therapeutic compounds contained in the pharmaceutical composition to be absorbed by enterocytes along with the digested glycerolipids and subsequently processed and transported into the lymphatic system. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes one or more bile acids. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes cholic acid. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes one or more C₁₄-C₂₄ free fatty acids. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes one or more C₁₄-C₂₀ free fatty acids. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes an oleic acid, a steric acid, or a linoleic acid. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes one or more C₁₄-C₂₄ free fatty acid surfactants. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes one or more C₁₄-C₂₀ free fatty acid surfactants. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes a sodium oleate, a sodium stearate, and/or a sodium linoleate.

[0103] In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; and 2) one or more C₁₄-C₂₄ free fatty acids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or

more digestion enhancers that includes 1) one or more bile acids disclosed herein; and 2) one or more C₁₄-C₂₀ free fatty acids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; and 2) one or more C₁₄-C₁₈ free fatty acids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; and 2) one or more C₁₄-C₂₀ free fatty acids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; and 2) one or more C₁₄-C₁₈ free fatty acids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; and 2) an oleic acid, a steric acid, or a linoleic acid.

[0104] In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; 2) one or more C₁₄-C₂₄ free fatty acids disclosed herein; and 3) one or more C₁₄-C₂₄ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; 2) one or more C₁₄-C₂₀ free fatty acids disclosed herein; and 3) one or more C₁₄-C₂₀ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; 2) one or more C₁₄-C₁₈ free fatty acids disclosed herein; and 3) one or more C₁₄-C₁₈ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) one or more C₁₄-C₂₀ free fatty acids disclosed herein; and 3) one or more C₁₄-C₂₀ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) one or more C₁₄-C₁₈ free fatty acids disclosed herein; and 3) one or more C₁₄-C₁₈ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) an oleic acid, a steric acid, and/or a linoleic acid; and 3) a sodium oleate, a sodium stearate, and/or a sodium linoleate.

[0105] In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; and 2) one or more phospholipids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; and 2) one or more phospholipids disclosed herein.

[0106] In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more C₁₄-C₂₄ free fatty acids disclosed herein; and 2) one or more phospholipids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more C₁₄-C₂₀ free fatty acids disclosed herein; and 2) one or more phospholipids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more C₁₄-C₁₈ free fatty acids

disclosed herein; and 2) one or more phospholipids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) an oleic acid, a steric acid, and/or a linoleic acid; and 2) one or more phospholipids disclosed herein.

[0107] In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; 2) one or more C₁₄-C₂₄ free fatty acids disclosed herein; and 3) one or more phospholipids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; 2) one or more C₁₄-C₂₀ free fatty acids disclosed herein; and 3) one or more phospholipids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; 2) one or more C₁₄-C₁₈ free fatty acids disclosed herein; and 3) one or more phospholipids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) one or more C₁₄-C₂₀ free fatty acids disclosed herein; and 3) one or more phospholipids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) one or more C₁₄-C₁₈ free fatty acids disclosed herein; and 3) one or more phospholipids disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) an oleic acid, a steric acid, and/or a linoleic acid; and 3) one or more phospholipids disclosed herein.

[0108] In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; 2) one or more phospholipids disclosed herein; and 3) one or more C₁₄-C₂₄ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) one or more phospholipids disclosed herein; and 3) one or more C₁₄-C₂₀ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) one or more phospholipids disclosed herein; and 3) one or more C₁₄-C₁₈ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) one or more phospholipids disclosed herein; and 3) a sodium C₁₄-C₂₀ free fatty acid disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) one or more phospholipids disclosed herein; and 3) a sodium C₁₄-C₁₈ free fatty acid disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) one or more phospholipids disclosed herein; and 3) a sodium oleate, a sodium stearate, and/or a sodium linoleate.

[0109] In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more C₁₄-C₂₄ free fatty acids disclosed herein; 2) one or more phospholipids disclosed herein; and 3) one or more C₁₄-C₂₄ free fatty acid surfactants disclosed herein. In

some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more C₁₄-C₂₀ free fatty acids disclosed herein; 2) one or more phospholipids disclosed herein; and 3) one or more C₁₄-C₂₀ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more C₁₄-C₁₈ free fatty acids disclosed herein; 2) one or more phospholipids disclosed herein; and 3) one or more C₁₄-C₁₈ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) an oleic acid, a steric acid, and/or a linoleic acid; 2) one or more phospholipids disclosed herein; and 3) one or more sodium C₁₄-C₂₀ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) an oleic acid, a steric acid, and/or a linoleic acid; 2) one or more phospholipids disclosed herein; and 3) a sodium oleate, a sodium stearate, and/or a sodium linoleate.

[0110] In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; 2) one or more C₁₄-C₂₄ free fatty acids disclosed herein; 3) one or more phospholipids disclosed herein; and 4) one or more C₁₄-C₂₄ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; 2) one or more C₁₄-C₂₀ free fatty acids disclosed herein; 3) one or more phospholipids disclosed herein; and 4) one or more C₁₄-C₂₀ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) one or more bile acids disclosed herein; 2) one or more C₁₄-C₁₈ free fatty acids disclosed herein; 3) one or more phospholipids disclosed herein; and 4) one or more C₁₄-C₁₈ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) one or more C₁₄-C₂₀ free fatty acids disclosed herein; 3) one or more phospholipids disclosed herein; and 4) one or more C₁₄-C₂₀ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) one or more C₁₄-C₁₈ free fatty acids disclosed herein; 3) one or more phospholipids disclosed herein; and 4) one or more C₁₄-C₁₈ free fatty acid surfactants disclosed herein. In some embodiments, a pharmaceutical composition disclosed comprises one or more digestion enhancers that includes 1) a cholic acid disclosed herein; 2) an oleic acid, a steric acid, and/or a linoleic acid; 3) one or more phospholipids disclosed herein; and 4) a sodium oleate, a sodium stearate, and/or a sodium linoleate.

[0111] In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more digestion enhancers in an amount of, e.g., about 1% by weight, about 2.5% by weight, about 5% by weight, about 7.5% by weight, about 10 % by weight, about 12.5% by weight, about 15 % by weight, about 17.5% by weight, about 20% by weight, about 22.5% by weight, about 25% by weight, about 30% by weight, about 35% by weight, about 40% by weight, about 45% by weight, about 50% by weight, about 55% by weight, about 60% by weight, about 65% by weight, about 70% by weight, about 75% by weight, or about 80% by weight. In some embodiments, a

pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more digestion enhancers in an amount of, e.g., at least 1% by weight, at least 2.5% by weight, at least 5% by weight, at least 7.5% by weight, at least 10 % by weight, at least 12.5% by weight, at least 15 % by weight, at least 17.5% by weight, at least 20% by weight, at least 22.5% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, at least 75% by weight, or at least 75% by weight. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more digestion enhancers in an amount of, e.g., at most 1% by weight, at most 2.5% by weight, at most 5% by weight, at most 7.5% by weight, at most 10 % by weight, at most 12.5% by weight, at most 15 % by weight, at most 17.5% by weight, at most 20% by weight, at most 22.5% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, at most 75% by weight, or at most 80% by weight.

[0112] In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more digestion enhancers in an amount of, e.g., about 1% to about 2.5% by weight, about 1% to about 5% by weight, about 1% to about 10% by weight, about 1% to about 15% by weight, about 1% to about 20% by weight, about 1% to about 25% by weight, about 2.5% to about 5% by weight, about 2.5% to about 10% by weight, about 2.5% to about 15% by weight, about 2.5% to about 20% by weight, about 2.5% to about 25% by weight, about 5% to about 10% by weight, about 5% to about 15% by weight, about 5% to about 20% by weight, about 5% to about 25% by weight, about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 10% to about 65%, about 10% to about 70%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 15% to about 65%, about 15% to about 70%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 20% to about 65%, about 20% to about 70%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 25% to about 65%, about 25% to about 70%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 30% to about 65%, about 30% to about 70%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 35% to about 65%, about 35% to about 70%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 40% to about 65%, about 40% to about 70%, about 40% to about 75%, about 40% to about 80%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 45% to about 65%, about 45% to about 70%, about 45% to about 75%, about 45% to about 80%, about 50% to about 55%, about 50% to about 60%, about 50% to about 65%, about 50% to about 70%, about 50% to about 75%, about 50% to

about 80%, about 55% to about 60%, about 55% to about 65%, about 55% to about 70%, about 55% to about 75%, about 55% to about 80%, about 60% to about 65%, about 60% to about 70%, about 60% to about 75%, about 60% to about 80%, about 65% to about 70% by weight, about 65% to about 75%, about 65% to about 80%, about 70% to about 75%, about 70% to about 80%, or about 75% to about 80%.

Bile Acids

[0113] A pharmaceutical composition disclosed herein may comprise one or more bile acids. The primary purpose of bile acids is to enhance solubility of a therapeutic compound disclosed herein within the glycerolipid admixture, to enhance absorption of a therapeutic compound disclosed herein thereby improving the pharmacokinetics of the compound, and/or to improve availability and facilitate selected bio-distribution of a therapeutic compound disclosed herein thereby improving the pharmacodynamics of the compound. In addition, as disclosed in Example 2, a bile acid disclosed herein improves the solubility of a therapeutic compound disclosed herein within one or more glycerolipid and/or one or more free C₁₄₋₂₄ fatty acids disclosed herein. The improved solubility properties are achieved by the bile acids by preventing the recrystallization of a therapeutic compound during solidification when the molten pharmaceutical composition cools to room temperature (18°C to 20°C). The improved pharmacokinetic properties are achieved by the bile acids by breaking apart the lipid component of a pharmaceutical composition disclosed herein via its surfactant properties into smaller lipid structures that mimic emulsion droplets, thereby facilitating the emulsification process. The “emulsion droplets” recruit colipase and create a greater surface area for which pancreatic lipase can digest the hard fat glycerolipids present there within which ultimately enhances enterocyte absorption and subsequent chylomicron formation. Bile acids are involved in signaling for the initiation of chylomicron formation. Hence the inclusion of bile acids in the lipid formulation will maximize this signaling pathway and the production of chylomicrons. As a result, the improved pharmacodynamic properties provided by bile acids are produced by increasing the availability of a therapeutic compound by increasing its content within chylomicrons prior to entering the circulatory system and subsequently facilitating the delivery of the therapeutic compound to compartments such as the brain passing across membranes such as the blood-brain barrier and the choroid plexus.

[0114] Amphipathic molecules having an HLB of greater than 12, bile acids have a specific chemical structure, different from ordinary aliphatic surfactants, due to the presence of a large, rigid, and planar hydrophobic moiety of a steroid nucleus carrying 2–4 hydroxyl groups. Specifically, bile acids comprise the following basic components: (1) 4 rings, (2) a 5-/8-carbon side chain that ends with a carboxylic acid, and (3) a number of hydroxyl groups (whose position/number changes among the various salts). The rings are ascribed the letters A, B, C, and D based on their distance from the side chain with the -COOH group, the D ring being the most distant (as well as being 1 C smaller than the other rings), as discussed below. Beta hydroxyl groups face up/out, alpha groups down, and every bile acid has a 3-hydroxyl group that originates from their cholesterol precursor. The chemical structure of bile salts results in this emulsification pathway being useful in accordance with the teachings of the disclosure, and accordingly, synthetic surfactants will not work.

[0115] Examples of bile acids include, without limitation, chenodeoxycholic acid, cholic acid, dafachronic acid, deoxycholic acid, glycocholic acid, glycochenodeoxycholic acid, lithocholic acid, taurochenodeoxycholic acid, taurocholic acid, and any stereoisomer thereof. cholic acid and chenodeoxycholic acid are referred to as primary bile acids while deoxycholic acid (which is converted from cholic acid) and lithocholic acid (which is converted from chenodeoxycholic acid) are referred to as secondary bile acids. Taurocholic acid and glycocholic acid (derivatives of cholic acid) and taurochenodeoxycholic acid and glycochenodeoxycholic acid (derivatives of chenodeoxycholic acid) are the major bile acids that serve as the basis for the bile salts found in bile.

[0116] There is a direct correlation between the amount of a bile acid present in a pharmaceutical composition disclosed herein and the improved properties observed. As such, the more bile acid present in a pharmaceutical composition disclosed herein the greater the improvement in solubility, absorption, and availability of the therapeutic composition. In addition, the upper limit of bile acid included in a pharmaceutical composition disclosed herein is not limited to the solution point of a bile acid. As such, a pharmaceutical composition disclosed herein can include supersaturating amounts of a bile acid. As such, the upper limit of bile acid that can be included in a pharmaceutical composition disclosed herein is its critical micellar concentration (CMC). Besides the above-mentioned improved properties, an additional advantage of supersaturating amounts of a bile acid is the presence of the resulting nanoparticle formation of crystalline bile acid in a pharmaceutical composition disclosed herein. Without wishing to be limited by a one theory, bile acid nanoparticles can serve as a reservoir that upon exposure to the alkaline environment of the small intestine dissolve and form bile salts which in turn further enhances the emulsification process of the pharmaceutical composition disclosed herein.

[0117] The amount of a bile acid useful in a pharmaceutical composition disclosed herein is an amount below its CMC. In some embodiments, the amount of a bile acid useful in a pharmaceutical composition disclosed herein is an amount below its CMC and one that is supersaturating. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more bile acids in an amount of, *e.g.*, about 0.1% by weight, about 0.5% by weight, about 1.0% by weight, about 1.5% by weight, about 2.0% by weight, about 2.5% by weight, about 3.0% by weight, about 3.5% by weight, about 4.0% by weight, about 4.5% by weight, about 5.0% by weight, about 5.5% by weight, about 6.0% by weight, about 6.5% by weight, about 7.0% by weight, about 7.5% by weight, about 8.0% by weight, about 8.5% by weight, about 9.0% by weight, about 9.5% by weight, or about 10.0% by weight. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more bile acids in an amount of, *e.g.*, at least 0.1% by weight, at least 0.5% by weight, at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, or at least 10.0% by weight. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more bile acids in an amount of, *e.g.*, at most 0.1% by weight, at most 0.5% by weight, at most 1.0% by weight, at

most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, or at most 10.0% by weight.

[0118] In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more bile acids in an amount of, e.g., about 0.1% to about 0.5%, about 0.1% to about 1.0%, about 0.1% to about 2.0%, about 0.1% to about 3.0%, about 0.1% to about 4.0%, about 0.1% to about 5.0%, about 0.1% to about 6.0%, about 0.1% to about 7.0%, about 0.1% to about 8.0%, about 0.1% to about 9.0%, about 0.1% to about 10.0%, about 0.5% to about 1.0%, about 0.5% to about 2.0%, about 0.5% to about 3.0%, about 0.5% to about 4.0%, about 0.5% to about 5.0%, about 0.5% to about 6.0%, about 0.5% to about 7.0%, about 0.5% to about 8.0%, about 0.5% to about 9.0%, about 0.5% to about 10.0%, about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%, about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about 8.0%, about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

[0119] In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more bile acids in a concentration of, e.g., at most 0.01 mM, at most 0.025 mM, at most 0.05 mM, at most 0.075 mM, at most 0.1 mM, at most 0.25 mM, at most 0.5 mM, at most 0.75 mM, at most 1 mM, or at most 5 mM. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more bile acids in a concentration of, e.g., about 0.01 mM to about 0.05 mM, about 0.01 mM to about 0.1 mM, about 0.01 mM to about 0.5 mM, about 0.01 mM to about 1 mM, about 0.01 mM to about 5 mM, about 0.05 mM to about 0.1 mM, about 0.05 mM to about 0.5 mM, about 0.05 mM to about 1 mM, about 0.05 mM to about 5 mM, about 0.1 mM to about 0.5 mM, about 0.1 mM to about 1 mM, about 0.1 mM to about 5 mM, or about 1 mM to about 5 mM.

C₁₄₋₂₄ Fatty Acids

[0120] A pharmaceutical composition disclosed herein may comprise one or more free C₁₄₋₂₄ fatty acids. A fatty acid comprises a carboxylic acid with a long unbranched hydrocarbon chain which may be either saturated or unsaturated and are hydrophobic molecules having an HLB of less than 4. The primary purpose of free C₁₄₋₂₄ fatty acids is to enhance solubility of a therapeutic compound disclosed herein within the glycerolipid admixture and to enhance absorption of a therapeutic compound disclosed herein thereby improving the pharmacokinetics of the compound. The improved solubility properties are achieved by the free C₁₄₋₂₄ fatty acids due to their properties of being a solvent that facilitates dissolvment of a therapeutic compound disclosed herein. The improved absorption properties are achieved by the free C₁₄₋₂₄ fatty acids by facilitating and increasing the formation of micelles by breaking up larger emulsion droplets, thereby mimicking the lipid digestion products of triglycerides, namely free fatty acids. As such, a C₁₄₋₂₄ fatty acid disclosed herein increases the uptake of micelles comprising one or more therapeutic compounds into enterocytes. In addition, as disclosed in Example 2, a free C₁₄₋₂₄ fatty acid disclosed herein improves the solubility of a bile salt disclosed herein.

[0121] In some embodiments, pharmaceutical composition disclosed herein may include one or more free C₁₄₋₂₄ fatty acids comprising, or consisting essentially of or consisting of unsaturated free C_{14-C16} fatty acids, unsaturated free C_{14-C18} fatty acids, unsaturated free C_{14-C20} fatty acids, unsaturated free C_{14-C22} fatty acids, unsaturated free C_{14-C24} fatty acids, unsaturated free C_{16-C18} fatty acids, unsaturated free C_{16-C20} fatty acids, unsaturated free C_{16-C22} fatty acids, unsaturated free C_{16-C24} fatty acids, unsaturated free C_{18-C20} fatty acids, unsaturated free C_{18-C22} fatty acids, unsaturated free C_{18-C24} fatty acids, unsaturated free C_{20-C22} fatty acids, or unsaturated free C_{22-C24} fatty acids. In some embodiments, pharmaceutical composition disclosed herein may include one or more free C₁₄₋₂₄ fatty acids comprising, or consisting essentially of or consisting of ω -3 unsaturated free C_{18-C22} fatty acids, ω -5 unsaturated free C_{18-C22} fatty acids, ω -6 unsaturated free C_{18-C22} fatty acids, ω -7 unsaturated free C_{18-C22} fatty acids, ω -9 unsaturated free C_{18-C22} fatty acids, ω -10 unsaturated free C_{18-C22} fatty acids, ω -11 unsaturated free C_{18-C22} fatty acids, or ω -12 unsaturated free C_{18-C22} fatty acids.

[0122] In some embodiments, pharmaceutical composition disclosed herein may include one or more free C₁₄₋₂₄ fatty acids comprising, or consisting essentially of or consisting of saturated free C_{14-C16} fatty acids, saturated free C_{14-C18} fatty acids, saturated free C_{14-C20} fatty acids, saturated free C_{14-C22} fatty acids, saturated free C_{14-C24} fatty acids, saturated free C_{16-C18} fatty acids, saturated free C_{16-C20} fatty acids, saturated free C_{16-C22} fatty acids, saturated free C_{16-C24} fatty acids, saturated free C_{18-C20} fatty acids, saturated free C_{18-C22} fatty acids, saturated free C_{18-C24} fatty acids, saturated free C_{20-C22} fatty acids, or saturated free C_{22-C24} fatty acids.

[0123] In some embodiments, a pharmaceutical composition disclosed herein may include one or more free C₁₄₋₂₄ fatty acids comprising, or consisting essentially of or consisting of a mixture of saturated and unsaturated free C_{14-C16} fatty acids, a mixture of saturated and unsaturated free C_{14-C18} fatty acids, a mixture of saturated and unsaturated free C_{14-C20} fatty acids, a mixture of saturated and unsaturated free C_{14-C22} fatty acids, a mixture of saturated and unsaturated free C_{14-C24} fatty acids, a mixture of saturated and unsaturated free C_{16-C18} fatty acids, a mixture of saturated and unsaturated free C_{16-C20} fatty acids, a

mixture of saturated and unsaturated free C₁₆-C₂₂ fatty acids, a mixture of saturated and unsaturated free C₁₆-C₂₄ fatty acids, a mixture of saturated and unsaturated free C₁₈-C₂₀ fatty acids, a mixture of saturated and unsaturated free C₁₈-C₂₂ fatty acids, a mixture of saturated and unsaturated free C₁₈-C₂₄ fatty acids, a mixture of saturated and unsaturated free C₂₀-C₂₂ fatty acids, or a mixture of saturated and unsaturated free C₂₂-C₂₄ fatty acids.

[0124] Non-limiting examples of a free C₁₄₋₂₄ fatty acid include palmitic acid (hexadecanoic acid), palmitolinolenic acid, palmitidonic acid, palmitovaccenic acid, palmitoleic acid, sapienic acid, 4-Hexadecenoic acid, stearic acid (octadecenoic acid), α -linolenic acid, stearidonic acid, α -eleostearic acid, β -eleostearic acid, punicic acid, 7,10,13-octadecatrienoic acid, 12-octadecenoic acid, linoleic acid, linolelaidic acid, γ -linolenic acid, calendic acid, pinolenic acid, vaccinic acid, rumeinic acid, oleic acid, elaidic acid, petroselinic acid, arachidic acid (eicosanoic acid), dihom- α -linolenic acid, eicosic acidtraenoic acid, eicosapentaenoic acid, 9,12,15-eicosatrienoic acid, β -eicosic acidtraenoic acid, dihom-linoleic acid, dihom- γ -linolenic acid, arachidonic acid, paullinic acid, 7,10,13-eicosatrienoic acid, gondoic acid, 8,11-eicosadienoic acid, meadic acid, gadoleic acid, 8-eicosenoic acid, behenic acid (docosanoic acid), clupanodonic acid, docosahexaenoic acid, adrenic acid, osbondic acid, erucic acid, lignoceric acid (tetracosanic acid), 9,12,15,18,21-Tetracosapentaenoic acid, 6,9,12,15,18,21-Tetracosahexaenoic acid, and nervonic acid.

[0125] The amount of a free C₁₄₋₂₄ fatty acid useful in a pharmaceutical composition disclosed herein is an amount that does not adversely affect the pharmacokinetics of a therapeutic compound it is being formulated with. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acids in an amount of, e.g., about 1% by weight, about 2.5% by weight, about 5% by weight, about 7.5% by weight, about 10 % by weight, about 12.5% by weight, about 15 % by weight, about 17.5% by weight, about 20% by weight, about 22.5% by weight, about 25% by weight, about 35% by weight, about 30% by weight, about 40% by weight, about 50% by weight, about 60% by weight, about 70% by weight, or about 75% by weight. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acids in an amount of, e.g., at least 1% by weight, at least 2.5% by weight, at least 5% by weight, at least 7.5% by weight, at least 10 % by weight, at least 12.5% by weight, at least 15 % by weight, at least 17.5% by weight, at least 20% by weight, at least 22.5% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 50% by weight, at least 60% by weight, at least 70% by weight, or at least 75% by weight. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acids in an amount of, e.g., at most 1% by weight, at most 2.5% by weight, at most 5% by weight, at most 7.5% by weight, at most 10 % by weight, at most 12.5% by weight, at most 15 % by weight, at most 17.5% by weight, at most 20% by weight, at most 22.5% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 50% by weight, at most 60% by weight, at most 70% by weight, or at most 75% by weight.

[0126] In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acids in an amount of, e.g., about 1% to about 2.5% by weight, about 1% to about 5% by weight, about 1% to about 10% by weight, about 1% to about 15% by weight, about 1% to about 20% by weight, about 1% to about 25% by weight, about 2.5% to about 5% by weight, about 2.5% to about 10% by weight, about 2.5% to about 15% by weight, about 2.5% to about 20% by weight, about 2.5% to about 25% by weight, about 2.5% to about 30% by weight, about 5% to about 10% by weight, about 5% to about 15% by weight, about 5% to about 20% by weight, about 5% to about 25% by weight, about 5% to about 30% by weight, about 10% to about 15% by weight, about 10% to about 20% by weight, about 10% to about 25% by weight, about 10% to about 30% by weight, about 10% to about 40% by weight, about 10% to about 45% by weight, about 10% to about 50% by weight, about 10% to about 60% by weight, about 10% to about 70% by weight, about 15% to about 20% by weight, about 15% to about 25% by weight, about 15% to about 30% by weight, about 15% to about 40% by weight, about 15% to about 45% by weight, about 15% to about 50% by weight, about 15% to about 60% by weight, about 15% to about 70% by weight, about 20% to about 25% by weight, about 20% to about 30% by weight, about 20% to about 40% by weight, about 20% to about 45% by weight, about 20% to about 50% by weight, about 20% to about 60% by weight, about 20% to about 70% by weight, about 30% to about 40% by weight, about 30% to about 50% by weight, about 30% to about 60% by weight, about 30% to about 70% by weight, about 30% to about 75% by weight, about 35% to about 40% by weight, about 35% to about 50% by weight, about 35% to about 60% by weight, about 35% to about 70% by weight, about 35% to about 75% by weight, about 40% to about 50% by weight, about 40% to about 60% by weight, about 40% to about 70% by weight, about 40% to about 75% by weight, about 50% to about 60% by weight, about 50% to about 70% by weight, or about 60% to about 70% by weight.

[0127] In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acids in a concentration of, e.g., at most 0.01 mM, at most 0.025 mM, at most 0.05 mM, at most 0.075 mM, at most 0.1 mM, at most 0.25 mM, at most 0.5 mM, at most 0.75 mM, at most 1 mM, at most 1.25 mM, at most 1.5 mM, at most 1.75 mM, or at most 2 mM. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acids in a concentration of, e.g., about 0.01 mM to about 0.05 mM, about 0.01 mM to about 0.1 mM, about 0.01 mM to about 0.5 mM, about 0.01 mM to about 1 mM, about 0.01 mM to about 1.25 mM, about 0.01 mM to about 1.5 mM, about 0.01 mM to about 1.75 mM, about 0.01 mM to about 2 mM, about 0.05 mM to about 0.1 mM, about 0.05 mM to about 0.5 mM, about 0.05 mM to about 1 mM, about 0.05 mM to about 1.25 mM, about 0.05 mM to about 1.5 mM, about 0.05 mM to about 1.75 mM, about 0.05 mM to about 2 mM, about 0.1 mM to about 0.5 mM, about 0.1 mM to about 1 mM, about 0.1 mM to about 1.25 mM, about 0.1 mM to about 1.5 mM, about 0.1 mM to about 1.75 mM, about 0.1 mM to about 2 mM, about 0.5 mM to about 1 mM, about 0.5 mM to about 1.25 mM, about 0.5 mM to about 1.5 mM, about 0.5 mM to about 1.75 mM, about 0.5 mM to about 2 mM, about 1 mM to about 1.25 mM, about 1 mM to about 1.5 mM, about 1 mM to about 1.75 mM, or about 1.5 mM to about 2 mM.

Hydrophilic Carboxylic Acid

[0128] A pharmaceutical composition disclosed herein may comprise one or more hydrophilic carboxylic acids. Like fatty acids disclosed herein, hydrophilic carboxylic acids disclosed herein to break apart the lipid component of a pharmaceutical composition disclosed herein via its surfactant properties into smaller lipid structures that mimic emulsion droplets, thereby facilitating the emulsification process. The “emulsion droplets” recruit colipase and create a greater surface area for which pancreatic lipase can digest the hard fat glycerolipids present therewithin. In addition, hydrophilic carboxylic acids disclosed herein, along with free fatty acid surfactants disclosed herein, facilitate formation of micelles by associating with the lipid digestion products of triglycerides, and then enhancing association of the triglyceride digestion products with fatty acid transporters, thereby enhancing absorption lipid molecules and the associated therapeutic compound into enterocytes.

[0129] A hydrophilic carboxylic acid disclosed herein includes lower carboxylic acids. In some embodiments, a hydrophilic carboxylic acid disclosed herein includes, without limitation, a C₁-C₄ carboxylate acid, a C₁-C₅ carboxylate acid, a C₁-C₆ carboxylate acid, a C₁-C₇ carboxylate acid, or a C₁-C₈ carboxylate acid. In some embodiments, a hydrophilic carboxylic acid disclosed herein includes, without limitation, a carboxylic acid, an alpha-hydroxy-carboxylic acid, a beta-hydroxy-carboxylic acid, omega-hydroxy-carboxylic acid and a dicarboxylic acid. In aspects of these embodiments, a carboxylic acid disclosed herein includes, without limitation, formic acid, acetic acid, propionic acid, butanoic acid, pentanoic acid, hexanoic acid, heptanoic acid, and octanoic acid. In aspects of these embodiments, an alpha-hydroxy-carboxylic acid is a carboxylic acid featuring a hydroxy group located one carbon atom away from the acid group and includes, without limitation, mandelic acid, tartaric acid, glycolic acid, lactic acid, citric acid, and 2-hydroxy-4-(methylthio)butyric acid. In aspects of these embodiments, a beta-hydroxy-carboxylic acid is a carboxylic acid featuring a hydroxy group located two carbon atoms away from the acid group and includes, without limitation, propanoic acid, α-hydroxypropionic acid, β-hydroxypropionic acid, β-hydroxybutyric acid, 3-hydroxypentanoic acid, 3-hydroxyoctanoic acid, 3-hydroxydecanoic acid, β-hydroxy β-methylbutyric acid, and carnitine. In aspects of these embodiments, an omega-hydroxy-carboxylic acid is a straight-chain aliphatic organic acid with a carboxyl group at position 1 and a hydroxyl at terminal position n where n > 3 and includes, without limitation, glycolic acid, hydroacrylic acid, gamma-hydroxybutyric acid, 5-hydroxyvaleric acid, 6-hydrocaproic acid, 7-hydroheptanoic acid, and omega-hydroxycaprylic acid. In aspects of these embodiments, a dicarboxylic acid disclosed herein includes, without limitation, oxalic acid, malonic acid, succinic acid, glutaric acid, adipic acid, pimelic acid, and suberic acid. In aspects of these embodiments, a hydrophilic carboxylic acid disclosed herein includes, without limitation, methane sulphonic acid and paratoluenesulphonic acid.

[0130] The amount of a hydrophilic carboxylic acid useful in a pharmaceutical composition disclosed herein is an amount that does not adversely affect the pharmacokinetics of a therapeutic compound it is being formulated with. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more hydrophilic carboxylic acids in an amount of, e.g., about 1.0% by weight, about 1.5% by weight, about 2.0% by weight, about 2.5% by weight, about 3.0% by weight, about 3.5% by weight, about 4.0% by weight, about 4.5% by weight, about 5.0% by

weight, about 5.5% by weight, about 6.0% by weight, about 6.5% by weight, about 7.0% by weight, about 7.5% by weight, about 8.0% by weight, about 8.5% by weight, about 9.0% by weight, about 9.5% by weight, about 10.0% by weight, about 12.5% by weight, about 15 % by weight, about 17.5% by weight, about 20% by weight, about 22.5% by weight, about 25% by weight, about 27.5% by weight, or about 30% by weight. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more hydrophilic carboxylic acids in an amount of, e.g., at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, at least 10.0% by weight, ab at least out 12.5% by weight, at least 15 % by weight, at least 17.5% by weight, at least 20% by weight, at least 22.5% by weight, at least 25% by weight, at least 27.5% by weight, or at least 30% by weight. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more hydrophilic carboxylic acids in an amount of, e.g., at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, at most 10.0% by weight, ab at most out 12.5% by weight, at most 15 % by weight, at most 17.5% by weight, at most 20% by weight, at most 22.5% by weight, at most 25% by weight, at most 27.5% by weight, or at most 30% by weight.

[0131] In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acids in an amount of, e.g., about 1% to about 2.5% by weight, about 1% to about 5% by weight, about 1% to about 10% by weight, about 1% to about 15% by weight, about 1% to about 20% by weight, about 1% to about 25% by weight, about 1% to about 30% by weight, about 2.5% to about 5% by weight, about 2.5% to about 10% by weight, about 2.5% to about 15% by weight, about 2.5% to about 20% by weight, about 2.5% to about 25% by weight, about 2.5% to about 30% by weight, about 5% to about 10% by weight, about 5% to about 15% by weight, about 5% to about 20% by weight, about 5% to about 25% by weight, about 5% to about 30% by weight, about 10% to about 15% by weight, about 10% to about 20% by weight, about 10% to about 25% by weight, about 10% to about 30% by weight, about 15% to about 20% by weight, about 15% to about 25% by weight, about 15% to about 30% by weight, about 20% to about 25% by weight, about 20% to about 30% by weight, or about 25% to about 30% by weight.

Phospholipids

[0132] A pharmaceutical composition disclosed herein may comprise one or more phospholipids. Like bile acids disclosed herein, phospholipids disclosed herein to break apart the lipid component of a pharmaceutical composition disclosed herein via its surfactant properties into smaller lipid structures that mimic emulsion droplets, thereby facilitating the emulsification process. The “emulsion droplets” recruit

colipase and create a greater surface area for which pancreatic lipase can digest the hard fat glycerolipids present therewithin. In addition, phospholipids disclosed herein, along with free fatty acid surfactants disclosed herein, facilitate formation of micelles by associating with the lipid digestion products of triglycerides, and then enhancing association of the triglyceride digestion products with fatty acid transporters, thereby enhancing absorption lipid molecules and the associated therapeutic compound into enterocytes.

[0133] The structure of the phospholipid generally comprises a hydrophobic tail of one or more fatty acids and a hydrophilic head containing phosphoric acid functional group and is amphipathic in nature and having an HLB of greater than 12. Phospholipids include, without limitation, phosphoglycerides and phosphosphingolipids. Phosphoglycerides have a general structure comprising a glycerol backbone with two fatty acids esterified to the first and second hydroxyl groups of glycerol and a phosphoric acid group esterified to the third hydroxyl group of glycerol. An alcohol group is esterified to the phosphoric acid group of a phosphoglyceride. Phosphoglycerides always have two fatty acids usually with one fatty acid being saturated and the other being unsaturated. Phosphoglycerides are generally typed according to the particular alcohol group present on the phosphoric acid group, such as, *e.g.*, ethanolamine, choline, serine or inositol. Non-limiting examples of phosphoglycerides include a phosphatidic acid (phosphatidate) (PA), a phosphatidylethanolamine (PE), a phosphatidylcholine (PC), a phosphatidylserine (PS), a cardiolipin, and a phosphoinositide including phosphatidylinositol (PI), phosphatidylinositol phosphate (PIP), phosphatidylinositol bisphosphate (PIP2), and phosphatidylinositol triphosphate (PIP3).

[0134] Although structurally different, phosphosphingolipids also have a polar head and two nonpolar tails. Phosphosphingolipids have a general structure comprising a long-chain amino alcohol sphingosine backbone with a fatty acid forming an amide linkage to the amino group of to the sphingosine backbone and a phosphoric acid group esterified to the hydroxyl group of the sphingosine backbone. Non-limiting examples of phosphosphingolipids include a ceramide phosphorylethanolamine (Cer-PE), and ceramide phosphorylcholine (Cer-PC), and ceramide phosphorylglycerol (Cer-PG).

[0135] In addition to its amphipathic nature, a phospholipid can be a zwitterionic phospholipid. A zwitterionic phospholipid is a fully ionized molecule that contains an equal number of positively charged and negatively charged functional groups and is electrically neutral. Non-limiting examples of a zwitterionic phospholipid include phosphatidylethanolamine (PE), phosphatidylcholine (PC), ceramide phosphorylethanolamine (Cer-PE), and ceramide phosphorylcholine (Cer-PC).

[0136] Phospholipids disclosed herein include lecithins. Lecithins are amphiphilic mixtures of glycerophospholipids. In some embodiments, a lecithin comprises a mixture of phosphatidylcholine, phosphatidylethanolamine, phosphatidylinositol, phosphatidylserine, and phosphatidic acid. In some embodiments, a lecithin comprises 19% to 21% phosphatidylcholine, 8% to 20% phosphatidylethanolamine, 20% to 21% phosphatidylinositol, and 5% to 11% phospholipids comprising phosphatidylserine, and phosphatidic acid.

[0137] In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more phospholipids in an amount of, e.g., about 1.0% by weight, about 1.5% by weight, about 2.0% by weight, about 2.5% by weight, about 3.0% by weight, about 3.5% by weight, about 4.0% by weight, about 4.5% by weight, about 5.0% by weight, about 5.5% by weight, about 6.0% by weight, about 6.5% by weight, about 7.0% by weight, about 7.5% by weight, about 8.0% by weight, about 8.5% by weight, about 9.0% by weight, about 9.5% by weight, or about 10.0% by weight. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more phospholipids in an amount of, e.g., at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, or at least 10.0% by weight. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more phospholipids in an amount of, e.g., at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, or at most 10.0% by weight.

[0138] In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more phospholipids in an amount of, e.g., about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%, about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about 8.0%, about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

C₁₄₋₂₄ Fatty Acid Surfactants

[0139] A pharmaceutical composition disclosed herein may comprise one or more free C₁₄₋₂₄ fatty acid surfactants. A fatty acid surfactant comprises a carboxylic acid with a long unbranched hydrocarbon chain which may be either saturated or unsaturated associated with an alkali metal or other metal ion and are hydrophobic molecules or amphipathic molecules having a HLB of greater than 12. The primary purpose

of the one or more free C₁₄₋₂₄ fatty acid surfactants are to enhance solubility of a therapeutic compound disclosed herein within the glycerolipid admixture and to enhance absorption of a therapeutic compound disclosed herein thereby improving the pharmacokinetics of the compound. The improved solubility properties are achieved by the one or more free C₁₄₋₂₄ fatty acid surfactants through the interaction of its carboxylic acid functional group with sodium ions present on a therapeutic compound which neutralizes the charge and facilitating the compounds interaction with the hydrophobic glycolipid admixture. The amount of the one or more free C₁₄₋₂₄ fatty acid surfactants to a pharmaceutical composition disclosed herein is calculated to be stoichiometric at a minimum or supra-stoichiometric to ensure enough moles of the one or more free C₁₄₋₂₄ fatty acid surfactants are present to displace the salt from the therapeutic compound and have the salt replaced by the fatty acid as a counterion which forms solubilized therapeutic compound in the lipid matrix. In the case of a freebase therapeutic compound the fatty acid surfactant also acts as a solubilizer of therapeutic compound in the composition, and is not acting as a counter-ion, so it can be sub or supra-toichiometric concentrations. The improved absorption properties are achieved by the free C₁₄₋₂₄ fatty acid surfactants by facilitating and increasing the formation of mixed micelles by breaking up larger emulsion droplets, thereby mimicking the lipid digestion products of triglycerides, namely free fatty acids. As such, a C₁₄₋₂₄ fatty acid surfactant disclosed herein increases the uptake of micelles comprising one or more therapeutic compounds into enterocytes. A free C₁₄₋₂₄ fatty acid surfactant disclosed herein is a free C₁₄₋₂₄ fatty acid that is associated with an alkali metal, such as, e.g., lithium (Li), sodium (Na), potassium (K), rubidium (Rb), cesium (Cs), and francium (Fr), or alkaline earth metal, such as, e.g., beryllium (Be), magnesium (Mg), calcium (Ca), strontium (Sr), barium (Ba), and radium (Ra).

[0140] In some embodiments, pharmaceutical composition disclosed herein may include one or more free C₁₄₋₂₄ fatty acid surfactants comprising, or consisting essentially of or consisting of unsaturated free C_{14-C16} fatty acid surfactants, unsaturated free C_{14-C18} fatty acid surfactants, unsaturated free C_{14-C20} fatty acid surfactants, unsaturated free C_{14-C22} fatty acid surfactants, unsaturated free C_{14-C24} fatty acid surfactants, unsaturated free C_{16-C18} fatty acid surfactants, unsaturated free C_{16-C20} fatty acid surfactants, unsaturated free C_{16-C22} fatty acid surfactants, unsaturated free C_{16-C24} fatty acid surfactants, unsaturated free C_{18-C20} fatty acid surfactants, unsaturated free C_{18-C22} fatty acid surfactants, unsaturated free C_{18-C24} fatty acid surfactants, unsaturated free C_{20-C22} fatty acid surfactants, or unsaturated free C_{22-C24} fatty acid surfactants. In some embodiments, pharmaceutical composition disclosed herein may include one or more free C₁₄₋₂₄ fatty acid surfactants comprising, or consisting essentially of or consisting of ω-3 unsaturated free C_{18-C22} fatty acid surfactants, ω-5 unsaturated free C_{18-C22} fatty acid surfactants, ω-6 unsaturated free C_{18-C22} fatty acid surfactants, ω-7 unsaturated free C_{18-C22} fatty acid surfactants, ω-9 unsaturated free C_{18-C22} fatty acid surfactants, ω-10 unsaturated free C_{18-C22} fatty acid surfactants, ω-11 unsaturated free C_{18-C22} fatty acid surfactants, or ω-12 unsaturated free C_{18-C22} fatty acid surfactants.

[0141] In some embodiments, pharmaceutical composition disclosed herein may include one or more free C₁₄₋₂₄ fatty acid surfactants comprising, or consisting essentially of or consisting of saturated free C_{14-C16} fatty acid surfactants, saturated free C_{14-C18} fatty acid surfactants, saturated free C_{14-C20} fatty acid surfactants, saturated free C_{14-C22} fatty acid surfactants, saturated free C_{14-C24} fatty acid surfactants, saturated free C_{16-C18} fatty acid surfactants, saturated free C_{16-C20} fatty acid surfactants, saturated free

C₁₆-C₂₂ fatty acid surfactants, saturated free C₁₆-C₂₄ fatty acid surfactants, saturated free C₁₈-C₂₀ fatty acid surfactants, saturated free C₁₈-C₂₂ fatty acid surfactants, saturated free C₁₈-C₂₄ fatty acid surfactants, saturated free C₂₀-C₂₂ fatty acid surfactants, or saturated free C₂₂-C₂₄ fatty acid surfactants.

[0142] In some embodiments, a pharmaceutical composition disclosed herein may include one or more free C₁₄₋₂₄ fatty acid surfactants comprising, or consisting essentially of or consisting of a mixture of saturated and unsaturated free C₁₄-C₁₆ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₄-C₁₈ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₄-C₂₀ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₄-C₂₂ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₄-C₂₄ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₆-C₁₈ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₆-C₂₀ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₆-C₂₂ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₆-C₂₄ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₈-C₂₀ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₈-C₂₂ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₈-C₂₄ fatty acid surfactants, a mixture of saturated and unsaturated free C₂₀-C₂₂ fatty acid surfactants, or a mixture of saturated and unsaturated free C₂₂-C₂₄ fatty acid surfactants.

[0143] Non-limiting examples of a free C₁₄₋₂₄ fatty acid surfactant include sodium palmitate (hexadecanoate), sodium palmitolinolenate, sodium palmitidonate, sodium palmitovaccenate, sodium palmitoleate, sodium sapienate, sodium 4-Hexadecanoate, sodium stearate (octadecanoate), sodium α -linolenate, sodium stearidonate, sodium α -eleostearate, sodium β -eleostearate, sodium punicate, sodium 7,10,13-octadecatrienoate, sodium 12-octadecenoate, sodium linoleate, sodium linolelaidate, sodium γ -linolenate, sodium calendate, sodium pinolenate, sodium vaccinate, sodium rumenate, sodium oleate, sodium elaidate, sodium petroselinate, sodium arachidate (eicosanoate), sodium dihomo- α -linolenate, sodium eicosatetraenoate, sodium eicosapentaenoate, sodium 9,12,15-eicosatrienoate, sodium β -eicosatetraenoate, sodium dihomo-linoleate, sodium dihomo- γ -linolenate, sodium arachidonate, sodium paullinate, sodium 7,10,13-eicosatrienoate, sodium gondoate, Sodium 8,11-eicosadienoate, sodium meadate, sodium gadoleate, sodium 8-eicosenoate, sodium behenate (docosanoate), sodium clupanodonate, sodium docosahexaenoate, sodium adrenate, sodium osbondate, sodium erucate, sodium lignocerate (tetracosanate), sodium 9,12,15,18,21-Tetracosapentaenoate, sodium 6,9,12,15,18,21-Tetracosahexaenoate, and sodium nervonate. Although not a free C₁₄₋₂₄ fatty acid surfactant, the anionic surfactant bis(2-ethylhexyl) sulfosuccinate (known as docusate or dioctyl sulfosuccinate (DOSS)) can also be used in the same manner as a free C₁₄₋₂₄ fatty acid surfactant disclosed herein.

[0144] The lower limit of one or more free C₁₄₋₂₄ fatty acid surfactants that can be included in a pharmaceutical composition disclosed herein is an amount sufficient to solubilize a therapeutic compound and confer its improved absorption properties. The upper limit of one or more free C₁₄₋₂₄ fatty acid surfactants that can be included in a pharmaceutical composition disclosed herein is its micellar concentration (CMC).

[0145] The amount of one or more free C₁₄₋₂₄ fatty acid surfactants useful in a pharmaceutical composition disclosed herein is an amount below its CMC. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acid surfactants in an amount of, *e.g.*, about 0.1% by weight, about 0.5% by weight, about 1.0% by weight, about 1.5% by weight, about 2.0% by weight, about 2.5% by weight, about 3.0% by weight, about 3.5% by weight, about 4.0% by weight, about 4.5% by weight, about 5.0% by weight, about 5.5% by weight, about 6.0% by weight, about 6.5% by weight, about 7.0% by weight, about 7.5% by weight, about 8.0% by weight, about 8.5% by weight, about 9.0% by weight, about 9.5% by weight, or about 10.0% by weight. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acid surfactants in an amount of, *e.g.*, at least 0.5% by weight, at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, or at least 10.0% by weight. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acid surfactants in an amount of, *e.g.*, at most 0.1% by weight, at most 0.5% by weight, at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, or at most 10.0% by weight.

[0146] In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acid surfactants in an amount of, *e.g.*, about 0.1% to about 0.5%, about 0.1% to about 1.0%, about 0.1% to about 2.0%, about 0.1% to about 3.0%, about 0.1% to about 4.0%, about 0.1% to about 5.0%, about 0.1% to about 6.0%, about 0.1% to about 7.0%, about 0.1% to about 8.0%, about 0.1% to about 9.0%, about 0.1% to about 10.0%, about 0.5% to about 1.0%, about 0.5% to about 2.0%, about 0.5% to about 3.0%, about 0.5% to about 4.0%, about 0.5% to about 5.0%, about 0.5% to about 6.0%, about 0.5% to about 7.0%, about 0.5% to about 8.0%, about 0.5% to about 9.0%, about 0.5% to about 10.0%, about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%, about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about

8.0%, about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

[0147] In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acid surfactants in a concentration of, e.g., at most 5 μ M, at most 10 μ M, at most 15 μ M, at most 20 μ M, at most 25 μ M, at most 30 μ M, or at most 35 μ M. In some embodiments, a pharmaceutical composition disclosed herein may comprising or consisting essentially of or consisting of one or more free C₁₄₋₂₄ fatty acid surfactants in a concentration of, e.g., about 1 μ M to about 5 μ M, about 1 μ M to about 10 μ M, about 1 μ M to about 15 μ M, about 1 μ M to about 20 μ M, about 1 μ M to about 25 μ M, about 1 μ M to about 30 μ M, about 1 μ M to about 35 μ M, about 5 μ M to about 10 μ M, about 5 μ M to about 15 μ M, about 5 μ M to about 20 μ M, about 5 μ M to about 25 μ M, about 5 μ M to about 30 μ M, about 5 μ M to about 35 μ M, about 10 μ M to about 15 μ M, about 10 μ M to about 20 μ M, about 10 μ M to about 25 μ M, about 10 μ M to about 30 μ M, about 10 μ M to about 35 μ M, about 15 μ M to about 20 μ M, about 15 μ M to about 25 μ M, about 15 μ M to about 30 μ M, about 15 μ M to about 35 μ M, about 20 μ M to about 25 μ M, about 20 μ M to about 30 μ M, about 20 μ M to about 35 μ M, about 25 μ M to about 30 μ M, about 25 μ M to about 35 μ M, or about 30 μ M to about 35 μ M.

Release effects

[0148] In an embodiment, a substantial amount of a therapeutic compound present in a pharmaceutical composition disclosed herein is delivered to or enters a lipid digestion and/or absorption pathway. In aspects of this embodiment, about 10%, about 20%, about 30%, about 40%, about 50%, about 60%, about 70%, about 80%, about 90%, or about 95% of a therapeutic compound present in a pharmaceutical composition disclosed herein is delivered to or enters a lipid digestion and/or absorption pathway. In other aspects of this embodiment, at least 10%, at least 20%, at least 30%, at least 40%, at least 50%, at least 60%, at least 70%, at least 80%, at least 90%, or at least 95% of a therapeutic compound present in a pharmaceutical composition disclosed herein is delivered to or enters a lipid digestion and/or absorption pathway. In yet other aspects of this embodiment, at most 10%, at most 20%, at most 30%, at most 40%, at most 50%, at most 60%, at most 70%, at most 80%, at most 90%, or at most 95% of a therapeutic compound present in a pharmaceutical composition disclosed herein is delivered to or enters a lipid digestion and/or absorption pathway.

[0149] In yet other aspects of this embodiment, about 10% to about 20%, about 10% to about 30%, about 10% to about 40%, about 10% to about 50%, about 10% to about 60%, about 10% to about 70%, about 10% to about 80%, about 10% to about 90%, about 10% to about 100%, about 20% to about 30%, about 20% to about 40%, about 20% to about 50%, about 20% to about 60%, about 20% to about 70%, about 20% to about 80%, about 20% to about 90%, about 20% to about 100%, about 30% to about 40%, about 30% to about 50%, about 30% to about 60%, about 30% to about 70%, about 30% to about 80%, about 30% to about 90%, about 30% to about 100%, about 40% to about 50%, about 40% to about 60%, about 40% to about 70%, about 40% to about 80%, about 40% to about 90%, about 40% to about 100%, about 50% to about 60%, about 50% to about 70%, about 50% to about 80%, about 50% to about 90%, about

50% to about 100%, about 60% to about 70%, about 60% to about 80%, about 60% to about 90%, about 60% to about 100%, about 70% to about 80%, about 70% to about 90%, about 70% to about 100%, about 80% to about 90%, about 80% to about 100%, or about 90% to about 100%, of a therapeutic compound present in a pharmaceutical composition disclosed herein is delivered to or enters a lipid digestion and/or absorption pathway.

[0150] In an embodiment, an insubstantial amount of a therapeutic compound present in a pharmaceutical composition disclosed herein is absorbed by blood capillaries and enters directly into the blood. In aspects of this embodiment, at most 1%, at most 5%, at most 10%, at most 20%, at most 30%, at most 40%, at most 50%, at most 60%, at most 70%, at most 80%, at most 90%, or at most 95% of a therapeutic compound present in a pharmaceutical composition disclosed herein is absorbed by blood capillaries and enters directly into the blood. In aspects of this embodiment, about 1% to about 10%, about 1% to about 20%, about 1% to about 30%, about 1% to about 40%, about 1% to about 50%, about 1% to about 60%, about 1% to about 70%, about 1% to about 80%, about 1% to about 90%, about 1% to about 95%, about 10% to about 20%, about 10% to about 30%, about 10% to about 40%, about 10% to about 50%, about 10% to about 60%, about 10% to about 70%, about 10% to about 80%, about 10% to about 90%, about 10% to about 95%, about 20% to about 30%, about 20% to about 40%, about 20% to about 50%, about 20% to about 60%, about 20% to about 70%, about 20% to about 80%, about 20% to about 90%, about 20% to about 95%, about 30% to about 40%, about 30% to about 50%, about 30% to about 60%, about 30% to about 70%, about 30% to about 80%, about 30% to about 90%, about 30% to about 95%, about 40% to about 50%, about 40% to about 60%, about 40% to about 70%, about 40% to about 80%, about 40% to about 90%, about 40% to about 95%, about 50% to about 60%, about 50% to about 70%, about 50% to about 80%, about 50% to about 90%, about 50% to about 95%, about 60% to about 70%, about 60% to about 80%, about 60% to about 90%, about 60% to about 95%, about 70% to about 80%, about 70% to about 90%, about 70% to about 95%, about 80% to about 90%, about 80% to about 95%, or about 90% to about 95%, of a therapeutic compound present in a pharmaceutical composition disclosed herein is absorbed by blood capillaries and enters directly into the blood.

Methods and Uses

[0151] Aspects of the present specification disclose, in part, a method of manufacturing pharmaceutical composition disclosed herein. In one embodiment, the method comprises the step of preparing a solubilized admixture comprising the solubilized component of a therapeutic compound by adding the therapeutic compound disclosed herein into a lipid solution comprising one or more one or more free C₁₄₋₂₄ fatty acids heated to a temperature sufficient to dissolve the therapeutic compound in the lipid solution. In some embodiments, a lipid solution also includes one or more bile acids, one or more C₁₄₋₂₄ fatty acid surfactants, one or more phospholipids, one or more hydrophilic carboxylic acids, or any combination thereof. A temperature sufficient to dissolve the therapeutic compound in the lipid solution is one typically near the melting point temperature of the therapeutic compound. In some embodiments, the temperature can be from about 100°C to about 200°C, about 120°C to about 200°C, about 140°C to about 200°C, about 160°C to about 200°C, or about 180°C to about 200°C. Once the therapeutic compound is in solution with

the heated lipid solution, one or more partially hydrolyzed glycerolipids is added and the lipid solution is allowed to cool to about 40°C to about 50°C. In a separate container, a solid particle admixture comprising the solid particle component of a therapeutic compound is prepared by adding micronized particles of therapeutic compound to a solution comprising one or more hard fats and/or one or more free C₁₄₋₂₄ fatty acids heated to a temperature sufficient to melt the one or more hard fats and/or one or more free C₁₄₋₂₄ fatty acids but not dissolve therapeutic compound in the solution. In some embodiments, the temperature can be from about 35°C to about 45°C, about 35°C to about 50°C, about 35°C to about 55°C, about 40°C to about 45°C, about 40°C to about 50°C, about 40°C to about 55°C, about 45°C to about 50°C, or about 45°C to about 55°C. This admixture is stirred to create a dispersion (the solid dispersion admixture). The solid particle admixture is then mixed with the solubilized admixture and cooled to room temperature (17°C to 20°C) to solidify, thereby forming a pharmaceutical composition comprising a) one or more therapeutic compounds, b) one or more glycerolipids, and c) one or more digestion enhancers, wherein the one or more therapeutic compounds comprise a solid particle component having the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids. The type and amount of lipids used to create the solubilized admixture and the solid particle admixture are ones that can form a pharmaceutical composition having a melting point temperature of about 30°C to 37°C.

[0152] Aspects of the present specification disclose, in part, treating an individual suffering from a disease or disorder. As used herein, the term “treating,” refers to reducing or eliminating in an individual a clinical symptom of a disease or disorder; or delaying or preventing in an individual the onset of a clinical symptom of a disease or disorder. For example, the term “treating” can mean reducing a symptom of a condition characterized by a disease or disorder by, e.g., at least 20%, at least 25%, at least 30%, at least 35%, at least 40%, at least 45%, at least 50%, at least 55%, at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, or at least 100%. The actual symptoms associated with a disease or disorder are well known and can be determined by a person of ordinary skill in the art by taking into account factors, including, without limitation, the location of the disease or disorder, the cause of the disease or disorder, the severity of the disease or disorder, and/or the tissue or organ affected by the disease or disorder. Those of skill in the art will know the appropriate symptoms or indicators associated with a specific type of disease or disorder and will know how to determine if an individual is a candidate for treatment as disclosed herein.

[0153] Aspects of the present specification disclose, in part, a disease or disorder that is a neoplasm. Neoplasms can be divided into four main groups: benign neoplasms, in situ neoplasms, malignant neoplasms, and neoplasms of uncertain or unknown behavior. A neoplasm can be benign, potentially malignant, or malignant (*i.e.*, cancer). A benign neoplasm includes uterine fibroids, osteophytes and melanocytic nevi (skin moles). Potentially malignant neoplasms are localized, do not invade or destroy surrounding tissue but have the potential to transform into a malignant neoplasm. Potentially malignant neoplasms include carcinoma in situ. Malignant neoplasms are commonly called cancer. They invade and destroy the surrounding tissue, may metastasize and, if untreated or unresponsive to treatment, will generally prove fatal. Secondary neoplasm refers to any of a class of cancer that is either a metastatic offshoot of a

primary tumor, or an apparently unrelated tumor that increases in frequency following certain cancer treatments such as chemotherapy or radiotherapy. Rarely there can be a metastatic neoplasm with no known site of the primary cancer, and this is classed as a cancer of unknown primary origin.

[0154] Aspects of the present specification disclose, in part, a disease or disorder that is a cancer. Cancer, or malignant neoplasm, is a large group of diseases involving uncontrolled growth and division of abnormal cells. A cancer can be a primary cancer, the initial or original malignant neoplastic disease, or a metastatic cancer, a malignant neoplasm deriving from a primary cancer that spread or invaded to other parts of the body cause new malignant neoplasms. A cancer can be a solid tumor comprising an abnormal mass of tissue that usually does not contain cysts or liquid areas, or a non-solid (blood) tumor, malignant neoplasms lacking mass.

[0155] Cancers are classified by the type of cell that the tumor cells resemble and are therefore presumed to be the origin of the tumor. These types include carcinomas, sarcomas, lymphomas and leukemias, germ cell tumors, and blastomas. A carcinoma is malignancy arising from epithelial cells, including the epithelial lining that covers the surface of internal organs and glands. This group includes many of the most common cancers and includes nearly all those in the bladder, brain, breast, cervical, colon, endometrium, kidney, liver, lung, ovarian, pancreas prostate, rectum, skin, small intestine, stomach, thyroid, and uterus. A sarcoma is malignancy arising from mesenchymal cells and includes neoplasms derived from connective tissue such as, e.g., bone, cartilage, fat, nervous, and vascular tissue. A lymphoma or leukemia is malignancy arising from hematopoietic (blood-forming) cells that leave the marrow and tend to mature in the lymph nodes (lymphoma) and blood (leukemia). A germ cell tumor is malignancy arising from pluripotent cells, most often presenting in the testicle or the ovary (seminoma and dysgerminoma, respectively). A blastoma is malignancy arising from immature "precursor" cells or embryonic tissue.

[0156] Non-limiting examples of a cancer, whether a primary cancer or a metastatic cancer, include a basil-cell skin cancer, a bladder cancer, a brain cancer, a breast cancer, a cervical cancer, a colon cancer, an endometrial cancer, a glioblastoma, a Hodgkin's lymphoma, a non-Hodgkin's lymphoma, a kidney cancer, a leukemia, a lip cancer, a liver cancer, a lymphoma, a melanoma, a mesothelioma, a myeloma, a non-small cell lung cancer, a non-melanoma skin cancer, an oral cancer, an ovarian cancer, a pancreatic cancer, a prostate cancer, a rectal cancer, a sarcoma, a small cell lung cancer, a squamous cell skin cancer, and a thyroid cancer.

[0157] In aspects of this embodiment, a cancer includes a bone or muscle cancer including, without limitation, a chondrosarcoma, an Ewing's sarcoma, a malignant fibrous histiocytoma, an osteosarcoma, a rhabdomyosarcoma, and a heart cancer.

[0158] In aspects of this embodiment, a cancer includes a brain or neuronal cancer including, without limitation, an astrocytoma, a brainstem glioma, a pilocytic astrocytoma, an ependymoma, a primitive neuroectodermal tumor, a cerebellar astrocytoma, a cerebral astrocytoma, a glioblastoma, a glioma, a

medulloblastoma, a neuroblastoma, an oligodendroglioma, a pineal astrocytoma, a pituitary adenoma, and hypothalamic glioma.

[0159] In aspects of this embodiment, a cancer includes a breast cancer including, without limitation, a female breast cancer, an invasive cribriform carcinoma, an invasive lobular carcinoma, a medullary carcinoma, a male breast cancer, a phyllodes tumor, and a tubular carcinoma.

[0160] In aspects of this embodiment, a cancer includes an endocrine cancer including, without limitation, an adrenocortical carcinoma, an islet cell carcinoma (endocrine pancreas), a Merkel cell carcinoma, a multiple endocrine neoplasia syndrome, a parathyroid cancer, a pheochromocytoma, and a thyroid cancer.

[0161] In aspects of this embodiment, a cancer includes an eye cancer including, without limitation, a retinoblastoma and an uveal melanoma

[0162] In aspects of this embodiment, a cancer includes a gastrointestinal cancer including, without limitation, an anal cancer, an appendix cancer, a cholangiocarcinoma, a colon cancer, an extrahepatic bile duct cancer, a gallbladder cancer, a gastric (stomach) cancer, a gastrointestinal carcinoid tumor, a gastrointestinal stromal tumor (GIST), a hepatocellular cancer, an islet cell cancer, a pancreatic cancer, and a rectal cancer.

[0163] In aspects of this embodiment, a cancer includes a genitourinary or gynecologic cancer including, without limitation, a bladder cancer, a cervical cancer, an endometrial cancer, an extragonadal germ cell tumor, a gestational trophoblastic cancer, an ovarian cancer, an ovarian epithelial cancer (surface epithelial-stromal tumor), an ovarian germ cell cancer, a penile cancer, a renal cell carcinoma, a prostate cancer, a transitional cell cancer (renal pelvis to ureter or ureter and renal pelvis), a testicular cancer, an urethral cancer, an uterine sarcoma, a vaginal cancer, a vulvar cancer, and a Wilms tumor.

[0164] In aspects of this embodiment, a cancer includes a head and neck cancer including, without limitation, an esophageal cancer, a head cancer, a hypopharyngeal cancer, a neck cancer, a nasopharyngeal carcinoma, an oral cancer, an oropharyngeal cancer, a paranasal sinus and nasal cavity cancer, a pharyngeal cancer, a salivary gland cancer.

[0165] In aspects of this embodiment, a cancer includes a hematopoietic cancer including, without limitation, an acute biphenotypic leukemia, an acute eosinophilic leukemia, an acute lymphoblastic leukemia, an acute myeloid leukemia, an acute myeloid dendritic cell leukemia, an AIDS-related lymphoma, an anaplastic large cell lymphoma, an angioimmunoblastic T-cell lymphoma, a B-cell prolymphocytic leukemia, a Burkitt's lymphoma, a chronic lymphocytic leukemia, a chronic myelogenous leukemia, a cutaneous T-cell lymphoma, a diffuse large B-cell lymphoma, a follicular lymphoma, a hairy cell leukemia, a hepatosplenic T-cell lymphoma, a Hodgkin's lymphoma, an intravascular large B-cell lymphoma, a large granular lymphocytic leukemia, a lymphoplasmacytic lymphoma, a lymphomatoid granulomatosis, a mantle cell lymphoma, a marginal zone B-cell lymphoma, a mast cell leukemia, a mediastinal large B cell

lymphoma, a multiple myeloma/plasma cell neoplasm, a myelodysplastic syndrome, a mucosa-associated lymphoid tissue lymphoma, a mycosis fungoides lymphoma, a nodal marginal zone B cell lymphoma, a non-Hodgkin lymphoma, a precursor B lymphoblastic leukemia, a primary central nervous system lymphoma, a primary cutaneous follicular lymphoma, a primary cutaneous immunocytoma, a primary effusion lymphoma, a plasmablastic lymphoma, a Sézary syndrome, a splenic marginal zone lymphoma, and a T-cell prolymphocytic leukemia.

[0166] In aspects of this embodiment, a cancer includes a skin cancer including, without limitation, a basal cell carcinoma, a dermatofibrosarcoma protuberans sarcoma, a melanoma, a Merkel cell carcinoma, a sebaceous carcinoma, a skin adnexal tumor, and a squamous cell carcinoma.

[0167] In aspects of this embodiment, a cancer includes a thoracic or respiratory cancer including, without limitation, a bronchial adenoma/carcinoid, a laryngeal cancer, a mesothelioma, a non-small cell lung cancer, a pleuropulmonary blastoma, a small cell lung cancer, a thymoma, and a thymic carcinoma.

[0168] In aspects of this embodiment, a cancer includes a HIV/AIDS related cancer including, without limitation, a AIDS-related cancer and a Kaposi sarcoma.

[0169] In aspects of this embodiment, a cancer includes an epithelioid hemangioendothelioma (EHE), a desmoplastic small round cell tumor, and a liposarcoma.

[0170] Aspects of the present specification disclose, in part, a disease or disorder that is a chronic inflammation. Inflammation involves the activation of the immune system in response to harmful stimuli, such as, *e.g.*, a pathogen, infection, irritant, or damage to cells. As a stereotyped response, inflammation is a mechanism of innate immunity, as compared to adaptive immunity, which is specific for each pathogen. Inflammation can be classified as either acute or chronic. Generally speaking, acute inflammation is mediated by granulocytes, while chronic inflammation is mediated by mononuclear cells such as monocytes and lymphocytes.

[0171] Acute inflammation is an initial protective response of the body to remove an injurious stimulus by maintaining tissue integrity and contributing to tissue repair. It is a part of the body's natural defense system against injury and disease, and in the absence of acute inflammation, wounds and infections would never heal and progressive destruction of the tissue would compromise the survival of the organism.

[0172] The process of acute inflammation is initiated by cells already present in all tissues, mainly resident macrophages, dendritic cells, histiocytes, Kupffer cells, mastocytes, vascular endothelial cells, and vascular smooth muscle cells. At the onset of a harmful stimulus, these cells undergo activation and release inflammatory mediating and sensitizing molecules, such as, *e.g.*, pro-inflammatory cytokines, pro-inflammatory prostaglandins, leukotrienes, histamine, serotonin, neutral proteases, bradykinin and nitric oxide. These inflammatory molecules modulate a complex series of biological events involving cellular and acellular components of the local vascular system, the immune system, and the injured tissue site to propagate and mature the inflammatory response. These events are responsible for eliciting an acute

inflammatory response, typically characterized by 1) vasodilatation which increases blood flow into the tissue thereby causing erythema (redness and warmth), which may extend beyond this site (the flare response); 2) blood vessel permeability which increases plasma leakage into the tissue thereby causing edema (swelling); 3) alter the excitability of certain sensory neurons causing hypersensitivity and pain; 4) stimulate the release of inflammation inducing molecules such as, e.g., neuropeptides like substance P (SP) and calcitonin gene-related peptide (CGRP), prostaglandins, and amino acids like glutamate, from the peripheral nerve endings; and 5) increase migration of leukocytes, mainly granulocytes, from the blood vessels into the tissue. An acute inflammatory response requires constant stimulation to be sustained and must be actively terminated when no longer needed. Hence, acute inflammation ceases once the injurious stimulus has been removed.

[0173] However, severe or prolonged noxious stimulation results in a chronic inflammatory response that leads to a progressive shift in the type of cells present at the site of tissue injury. Chronic inflammation may be characterized as the simultaneous destruction and healing of tissue from the inflammatory process, with the net result of provoking injury rather than mediating repair. As such, chronic inflammation is a disease. As an inflammatory response can occur anywhere in the body, chronic inflammation has been implicated in the pathophysiology of a wide range of seemingly unrelated disorders which underlay a large and varied group of human diseases. For example, chronic inflammation is involved in diseases as diverse as cardiovascular diseases, cancers, allergies, obesity, diabetes, digestive system diseases, degenerative diseases, auto-immune disorders, and Alzheimer's disease.

[0174] Chronic inflammation symptoms include, without limitation, edema, hyperemia, erythema, bruising, tenderness, stiffness, swollenness, fever, chills, stuffy nose, stuffy head, breathing problems, fluid retention, blood clots, loss of appetite, increased heart rate, formation of granulomas, fibrinous, pus, non-viscous serous fluid, or ulcer and pain. The actual symptoms associated with a chronic inflammation are well known and can be determined by a person of ordinary skill in the art by taking into account factors, including, without limitation, the location of the inflammation, the cause of the inflammation, the severity of the inflammation, the tissue or organ affected, and the associated disorder.

[0175] Specific patterns of chronic inflammation are seen during particular situations that arise in the body, such as when inflammation occurs on an epithelial surface, or pyogenic bacteria are involved. For example, granulomatous inflammation is an inflammation resulting from the formation of granulomas arising from a limited but diverse number of diseases, including, without limitation, tuberculosis, leprosy, sarcoidosis, and syphilis. Purulent inflammation is an inflammation resulting in large amount of pus, which consists of neutrophils, dead cells, and fluid. Infection by pyogenic bacteria such as staphylococci is characteristic of this kind of inflammation. Serous inflammation is an inflammation resulting from copious effusion of non-viscous serous fluid, commonly produced by mesothelial cells of serous membranes, but may be derived from blood plasma. Skin blisters exemplify this pattern of inflammation. Ulcerative inflammation is an inflammation resulting from the necrotic loss of tissue from the epithelial surface, exposing lower layers and forming an ulcer.

[0176] A chronic inflammation symptom can be associated with a large, unrelated group of disorders which underlay a variety of diseases and disorders. The immune system is often involved with chronic inflammatory disorders, demonstrated in both allergic reactions and some myopathies, with many immune system disorders resulting in abnormal inflammation. Non-immune diseases with etiological origins in chronic inflammatory processes include cancer, atherosclerosis, and ischaemic heart disease. Non-limiting examples of disorders exhibiting chronic inflammation as a symptom include, without limitation, acne, acid reflux/heartburn, age related macular degeneration (AMD), allergy, allergic rhinitis, Alzheimer's disease, amyotrophic lateral sclerosis, anemia, appendicitis, arteritis, arthritis, asthma, atherosclerosis, autoimmune disorders, balanitis, blepharitis, bronchiolitis, bronchitis, a bullous pemphigoid, burn, bursitis, cancer, cardiac arrest, carditis, celiac disease, cellulitis, cervicitis, cholangitis, cholecystitis, chorioamnionitis, chronic obstructive pulmonary disease (COPD), cirrhosis, colitis, congestive heart failure, conjunctivitis, cyclophosphamide-induced cystitis, cystic fibrosis, cystitis, common cold, dacryoadenitis, dementia, dermatitis, dermatomyositis, diabetes, diabetic neuropathy, diabetic retinopathy, diabetic nephropathy, diabetic ulcer, digestive system disease, eczema, emphysema, encephalitis, endocarditis, endometritis, enteritis, enterocolitis, epicondylitis, epididymitis, fasciitis, fibromyalgia, fibrosis, fibrositis, gastritis, gastroenteritis, gingivitis, glomerulonephritis, glossitis, heart disease, heart valve dysfunction, hepatitis, hidradenitis suppurativa, Huntington's disease, hyperlipidemic pancreatitis, hypertension, ileitis, infection, inflammatory bowel disease, inflammatory cardiomegaly, insulin resistance, interstitial cystitis, interstitial nephritis, iritis, ischemia, ischemic heart disease, keratitis, keratoconjunctivitis, laryngitis, lupus nephritis, mastitis, mastoiditis, meningitis, metabolic syndrome (syndrome X), a migraine, multiple sclerosis, myelitis, myocarditis, myositis, nephritis, non-alcoholic steatohepatitis, obesity, omphalitis, oophoritis, orchitis, osteochondritis, osteopenia, osteomyelitis, osteoporosis, osteitis, otitis, pancreatitis, Parkinson's disease, parotitis, pelvic inflammatory disease, pemphigus vulgaris, pericarditis, peripheral neuropathy, peritonitis, pharyngitis, phlebitis, pleuritis, pneumonitis, polycystic nephritis, proctitis, prostatitis, psoriasis, pulpitis, pyelonephritis, pylephlebitis, renal failure, reperfusion injury, retinitis, rheumatic fever, rhinitis, salpingitis, sarcoidosis, sialadenitis, sinusitis, spastic colon, stenosis, stomatitis, stroke, surgical complication, synovitis, tendonitis, tendinosis, tenosynovitis, thrombophlebitis, tonsillitis, trauma, traumatic brain injury, transplant rejection, trigonitis, tuberculosis, tumor, urethritis, uritis, uveitis, vaginitis, vasculitis, and vulvitis. See also, Eric R. First, *Application of Botulinum Toxin to the Management of Neurogenic Inflammatory Disorders*, U.S. Patent 6,063,768, which is hereby incorporated by reference in its entirety.

[0177] In one embodiment, a chronic inflammation comprises a tissue inflammation. Tissue inflammation is a chronic inflammation that is confined to a particular tissue or organ. In aspect of this embodiment, a tissue inflammation comprises, e.g., a skin inflammation, a muscle inflammation, a tendon inflammation, a ligament inflammation, a bone inflammation, a cartilage inflammation, a lung inflammation, a heart inflammation, a liver inflammation, a pancreatic inflammation, a kidney inflammation, a bladder inflammation, a stomach inflammation, an intestinal inflammation, a neuronal inflammation, and a brain inflammation.

[0178] In another embodiment, a chronic inflammation comprises a systemic inflammation. Although the processes involved are identical to tissue inflammation, systemic inflammation is not confined to a particular

tissue but in fact overwhelms the body, involving the endothelium and other organ systems. When it is due to infection, the term sepsis is applied, with the terms bacteremia being applied specifically for bacterial sepsis and viremia specifically to viral sepsis. Vasodilation and organ dysfunction are serious problems associated with widespread infection that may lead to septic shock and death.

[0179] In another embodiment, a chronic inflammation comprises an arthritis. Arthritis includes a group of conditions involving damage to the joints of the body due to the inflammation of the synovium including, without limitation osteoarthritis, rheumatoid arthritis, juvenile idiopathic arthritis, spondyloarthropathies like ankylosing spondylitis, reactive arthritis (Reiter's syndrome), psoriatic arthritis, enteropathic arthritis associated with inflammatory bowel disease, Whipple disease and Behcet disease, septic arthritis, gout (also known as gouty arthritis, crystal synovitis, metabolic arthritis), pseudogout (calcium pyrophosphate deposition disease), and Still's disease. Arthritis can affect a single joint (monoarthritis), two to four joints (oligoarthritis) or five or more joints (polyarthritis) and can be either an auto-immune disease or a non-autoimmune disease.

[0180] In another embodiment, a chronic inflammation comprises an autoimmune disorder. Autoimmune diseases can be broadly divided into systemic and organ-specific autoimmune disorders, depending on the principal clinico-pathologic features of each disease. Systemic autoimmune diseases include, without limitation, systemic lupus erythematosus (SLE), Sjögren's syndrome, Scleroderma, rheumatoid arthritis, and polymyositis. Local autoimmune diseases may be endocrinologic (Diabetes Mellitus Type 1, Hashimoto's thyroiditis, Addison's disease etc.), dermatologic (pemphigus vulgaris), hematologic (autoimmune haemolytic anemia), neural (multiple sclerosis) or can involve virtually any circumscribed mass of body tissue. Types of autoimmune disorders include, without limitation, acute disseminated encephalomyelitis (ADEM), Addison's disease, an allergy or sensitivity, amyotrophic lateral sclerosis, anti-phospholipid antibody syndrome (APS), arthritis, autoimmune hemolytic anemia, autoimmune hepatitis, autoimmune inner ear disease, autoimmune pancreatitis, bullous pemphigoid, celiac disease, Chagas disease, chronic obstructive pulmonary disease (COPD), diabetes mellitus type 1 (IDDM), endometriosis, fibromyalgia, Goodpasture's syndrome, Graves' disease, Guillain-Barré syndrome (GBS), Hashimoto's thyroiditis, hidradenitis suppurativa, idiopathic thrombocytopenic purpura, inflammatory bowel disease, interstitial cystitis, lupus (including discoid lupus erythematosus, drug-induced lupus erythematosus, lupus nephritis, neonatal lupus, subacute cutaneous lupus erythematosus and systemic lupus erythematosus), morphea, multiple sclerosis (MS), myasthenia gravis, myopathies, narcolepsy, neuromyotonia, pemphigus vulgaris, pernicious anaemia, primary biliary cirrhosis, recurrent disseminated encephalomyelitis (multiphasic disseminated encephalomyelitis), rheumatic fever, schizophrenia, scleroderma, Sjögren's syndrome, tenosynovitis, vasculitis, and vitiligo. See Pamela D. Van Schaack & Kenneth L. Tong, *Treatment of Autoimmune Disorder with a Neurotoxin*, U.S. Patent Publication 2006/138059, which is hereby incorporated by reference in its entirety.

[0181] In another embodiment, a chronic inflammation comprises a myopathy. Myopathies are caused when the immune system inappropriately attacks components of the muscle, leading to inflammation in the

muscle. A myopathy includes an inflammatory myopathy and an auto-immune myopathy. Myopathies include, without limitation, dermatomyositis, inclusion body myositis, and polymyositis.

[0182] In another embodiment, a chronic inflammation comprises a vasculitis. Vasculitis is a varied group of disorders featuring inflammation of a vessel wall including lymphatic vessels and blood vessels like veins (phlebitis), arteries (arteritis) and capillaries due to leukocyte migration and resultant damage. The inflammation may affect any size blood vessel, anywhere in the body. It may affect either arteries and/or veins. The inflammation may be focal, meaning that it affects a single location within a vessel; or it may be widespread, with areas of inflammation scattered throughout a particular organ or tissue, or even affecting more than one organ system in the body. Vasculitis include, without limitation, Buerger's disease (thromboangiitis obliterans), cerebral vasculitis (central nervous system vasculitis), Churg-Strauss arteritis, cryoglobulinemia, essential cryoglobulinemic vasculitis, giant cell (temporal) arteritis, Golfer's vasculitis, Henoch-Schonlein purpura, hypersensitivity vasculitis (allergic vasculitis), Kawasaki disease, microscopic polyarteritis/polyangiitis, polyarteritis nodosa, polymyalgia rheumatica (PMR), rheumatoid vasculitis, Takayasu arteritis, Wegener's granulomatosis, and vasculitis secondary to connective tissue disorders like systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), relapsing polychondritis, Behçet's disease, or other connective tissue disorders, vasculitis secondary to viral infection.

[0183] In another embodiment, a chronic inflammation comprises a skin disorder. Skin disorders include, without limitation, an acne, including acne vulgaris, a bullous pemphigoid, a dermatitis, including atopic dermatitis and chronic actinic dermatitis, an eczema like atopic eczema, contact eczema, xerotic eczema, seborrheic dermatitis, dyshidrosis, discoid eczema, venous eczema, dermatitis herpetiformis, neurodermatitis, and autoeczematization, and stasis dermatitis, hidradenitis suppurativa, lichen planus, psoriasis including plaque psoriasis, nail psoriasis, guttate psoriasis, scalp psoriasis, inverse psoriasis, pustular psoriasis, erythrodermic psoriasis, and psoriatic arthritis, rosacea and scleroderma including morphea.

[0184] In another embodiment, a chronic inflammation comprises a gastrointestinal disorder. A gastrointestinal disorder includes, without limitation, irritable bowel disease, an inflammatory bowel disease including Crohn's disease and an ulcerative colitis like ulcerative proctitis, left-sided colitis, pancolitis and fulminant colitis.

[0185] In another embodiment, a chronic inflammation comprises a cardiovascular disease. When LDL cholesterol becomes embedded in arterial walls, it can invoke an immune response. Chronic inflammation eventually can damage the arteries, which can cause them to burst. Cardiovascular disease is any of a number of specific diseases that affect the heart itself and/or the blood vessel system, especially the veins and arteries leading to and from the heart. There are more than 60 types of cardiovascular disorders including, without limitation, a hypertension, endocarditis, myocarditis, heart valve dysfunction, congestive heart failure, myocardial infarction, a diabetic cardiac conditions, blood vessel inflammation like arteritis, phlebitis, vasculitis; arterial occlusive disease like arteriosclerosis and stenosis, inflammatory cardiomegaly, a peripheral arterial disease; an aneurysm; an embolism; a dissection; a pseudoaneurysm; a vascular

malformation; a vascular nevus; a thrombosis; a thrombophlebitis; a varicose veins; a stroke. Symptoms of a cardiovascular disorder affecting the heart include, without limitation, chest pain or chest discomfort (angina), pain in one or both arms, the left shoulder, neck, jaw, or back, shortness of breath, dizziness, faster heartbeats, nausea, abnormal heartbeats, feeling fatigued. Symptoms of a cardiovascular disorder affecting the brain include, without limitation, sudden numbness or weakness of the face, arm, or leg, especially on one side of the body, sudden confusion or trouble speaking or understanding speech, sudden trouble seeing in one or both eyes, sudden dizziness, difficulty walking, or loss of balance or coordination, sudden severe headache with no known cause. Symptoms of a cardiovascular disorder affecting the legs, pelvis and/or arm include, without limitation, claudication, which is a pain, ache, or cramp in the muscles, and cold or numb feeling in the feet or toes, especially at night.

[0186] In another embodiment, a chronic inflammation comprises a cancer. Inflammation orchestrates the microenvironment around tumors, contributing to proliferation, survival, and migration. For example, fibrinous inflammation results from a large increase in vascular permeability which allows fibrin to pass through the blood vessels. If an appropriate procoagulative stimulus is present, such as cancer cells, a fibrinous exudate is deposited. This is commonly seen in serous cavities, where the conversion of fibrinous exudate into a scar can occur between serous membranes, limiting their function. In another example, a cancer is an inflammatory cancer like a NF- κ B-driven inflammatory cancer.

[0187] In another embodiment, a chronic inflammation comprises a pharmacologically induced inflammation. Certain drugs or exogenic chemical compounds are known to affect inflammation. For example, Vitamin A deficiency causes an increase in an inflammatory response. Certain illicit drugs such as cocaine and ecstasy may exert some of their detrimental effects by activating transcription factors intimately involved with inflammation (e.g., NF- κ B).

[0188] In another embodiment, a chronic inflammation comprises an infection. An infectious organism can escape the confines of the immediate tissue via the circulatory system or lymphatic system, where it may spread to other parts of the body. If an organism is not contained by the actions of acute inflammation, it may gain access to the lymphatic system via nearby lymph vessels. An infection of the lymph vessels is known as lymphangitis, and infection of a lymph node is known as lymphadenitis. A pathogen can gain access to the bloodstream through lymphatic drainage into the circulatory system. Infections include, without limitation, bacterial cystitis, bacterial encephalitis, pandemic influenza, viral encephalitis, and viral hepatitis (A, B and C).

[0189] In another embodiment, a chronic inflammation comprises a tissue or organ injury. Tissue or organ injuries include, without limitation, a burn, a laceration, a wound, a puncture, or a trauma.

[0190] In another embodiment, a chronic inflammation comprises a transplant rejection. Transplant rejection occurs when a transplanted organ or tissue is not accepted by the body of the transplant recipient because the immune system of the recipient attacks the transplanted organ or tissue. An adaptive immune response, transplant rejection is mediated through both T cell mediated and humoral immune (antibodies)

mechanisms. A transplant rejection can be classified as a hyperacute rejection, an acute rejection, or a chronic rejection. Chronic rejection of a transplanted organ or tissue is where the rejection is due to a poorly understood chronic inflammatory and immune response against the transplanted tissue. Also included in the term "transplant rejection" is a graft-versus-host disease (GVHD). GVHD is a common complication of allogeneic bone marrow transplantation in which functional immune cells in the transplanted marrow recognize the recipient as "foreign" and mount an immunologic attack. It can also take place in a blood transfusion under certain circumstances. GVHD is divided into acute and chronic forms. Acute and chronic GVHD appear to involve different immune cell subsets, different cytokine profiles, somewhat different host targets, and respond differently to treatment.

[0191] In another embodiment, a chronic inflammation comprises a Th1-mediated inflammatory disease. In a well-functioning immune system, an immune response should result in a well-balanced pro-inflammatory Th1 response and anti-inflammatory Th2 response that is suited to address the immune challenge. Generally speaking, once a pro-inflammatory Th1 response is initiated, the body relies on the anti-inflammatory response invoked by a Th2 response to counteract this Th1 response. This counteractive response includes the release of Th2 type cytokines such as, e.g., IL-4, IL-5, and IL-13 which are associated with the promotion of IgE and eosinophilic responses in atopy, and also IL-10, which has an anti-inflammatory response. A Th1-mediated inflammatory disease involves an excessive pro-inflammatory response produced by Th1 cells that leads to chronic inflammation. The Th1-mediated disease may be virally, bacterially or chemically (e.g., environmentally) induced. For example, a virus causing the Th1-mediated disease may cause a chronic or acute infection, which may cause a respiratory disorder or influenza.

[0192] Neuroinflammation is an inflammatory response of the nervous tissue and can be both acute and chronic. Acute neuroinflammatory responses are a well-established defense against harmful conditions, such as infections, toxins, and neuronal cell injury. With respect to the peripheral nervous system (PNS), a neuroinflammatory response is handled in a manner similar to an inflammatory response. The central nervous system (CNS) is considered an immunologically privileged site since the blood–brain barrier (BBB) typically prevents peripheral immune cells from entering the CNS. Instead, in response to an inflammatory trigger, resident glia cells, called microglia, become activated to destroy infectious agents before they damage neural tissue, and as such, are the main form of active immune defense in the CNS. However, when there is a disruption in the equilibrium of anti-inflammatory and proinflammatory signaling, microglia become chronically activated, leading to overproduction of proinflammatory factors (i.e., cytokines) and a progression of neurodegenerative changes (e.g., atrophy and loss of function of neurons). Activation of chronic neuroinflammation further triggers the infiltration of immune cells from the periphery across the BBB, accelerating neuroinflammation and the neurodegenerative process. Much research has focused on the central role of neuroinflammation in the pathogenesis of many conditions relating to the CNS, including e.g., traumatic brain injury, stroke, Alzheimer's disease, post-operative cognitive decline/perioperative neurocognitive disorder and now even long-term cognitive side effects from SARS-CoV-2. Attempts to treat neuroinflammation have however been met with limited success which is largely because NSAIDs have typically been formulated for minimal blood brain barrier penetration. Therefore, compounds, compositions,

uses, and methods that can successfully deliver an anti-inflammatory agent to the brain would be highly desirable for the treatment of neuroinflammation.

[0193] In another embodiment, a chronic inflammation comprises a chronic neurogenic inflammation. Chronic neurogenic Inflammation refers to an inflammatory response initiated and/or maintained through the release of inflammatory molecules like SP or CGRP which released from peripheral sensory nerve terminals (*i.e.*, an efferent function, in contrast to the normal afferent signaling to the spinal cord in these nerves). Chronic neurogenic inflammation includes both primary inflammation and secondary neurogenic inflammation. As used herein, the term "primary" neurogenic inflammation refers to tissue inflammation (inflammatory symptoms) that is initiated by, or results from, the release of substances from primary sensory nerve terminals (such as C and A-delta fibers). As used herein, the term "secondary" neurogenic inflammation" refers to tissue inflammation initiated by non-neuronal sources (*e.g.*, extravasation from vascular bed or tissue interstitium-derived, such as from mast cells or immune cells) of inflammatory mediators, such as peptides or cytokines, stimulating sensory nerve terminals and causing a release of inflammatory mediators from the nerves. The net effect of both forms (primary and secondary) of chronic neurogenic inflammation is to have an inflammatory state that is maintained by the sensitization of the peripheral sensory nerve fibers. The physiological consequence of the resulting chronic neurogenic inflammation depends on the tissue in question, producing, such as, *e.g.*, cutaneous pain (allodynia, hyperalgesia), joint pain and/or arthritis, visceral pain and dysfunction, pulmonary dysfunction (asthma, COPD), and bladder dysfunction (pain, overactive bladder).

[0194] Neuroinflammation includes both acute neuroinflammation and chronic neuroinflammation. Acute neuroinflammation usually follows injury to the central nervous system immediately, and is characterized by rapid activation of microglia, release of inflammatory molecules, endothelial cell activation, platelet deposition, and tissue edema. Chronic neuroinflammation is the sustained activation of glial cells and recruitment of other immune cells into the brain. However, over time, chronic inflammation causes the degradation of tissue and of the BBB and reactive oxygen species generated and inflammatory signals released by microglia recruit peripheral immune cells to assist in mounting a neuroimmune response.

[0195] Chronic inflammation is typically associated with neurodegenerative diseases. A neurodegenerative disease is caused by the progressive loss of structure or function of neurons, in the process known as neurodegeneration. Such neuronal damage may ultimately involve cell death. Neurodegeneration can be found in the brain at many different levels of neuronal circuitry, ranging from molecular to systemic. Because there is no known way to reverse the progressive degeneration of neurons, these diseases are considered to be incurable. The two major contributing factors to neurodegeneration are oxidative stress and neuroinflammation. Non-limiting examples of a neurodegenerative disease associated with neuroinflammation include Alzheimer's disease, amyotrophic lateral sclerosis, aneurysm, anxiety, aphasia, Asperger's syndrome, ataxia, attention deficit hyperactivity disorder, bipolar disorder, brain cancer, cancer-related or chemotherapy-related cognitive impairment, cerebral ischemia, cerebral palsy, chronic fatigue syndrome, CNS neuropathy, Creutzfeldt-Jakob disease, dementia, depression, encephalitis, epilepsy, fibromyalgia, functional neurological disorder, Guillain-Barre syndrome, headaches, idiopathic intracranial hypertension, migraine, multiple sclerosis, Parkinson's disease, pediatric

neuroinflammatory disorder, peri-operative neurocognitive disorder, post-operative cognitive decline, post-traumatic stress disorder, SARS-CoV-2 infection, schizophrenia, stroke, substance abuse derived neuroinflammation, traumatic brain injury, Tourette syndrome.

[0196] Aspects of the present specification disclose, in part, a disease or disorder that is an idiopathic pulmonary fibrosis.

[0197] Aspects of the present specification disclose, in part, a disease or disorder that is a renal disease or disorder.

[0198] A composition or compound is administered to an individual. An individual is typically a human being. Typically, any individual who is a candidate for a conventional chronic inflammation and/or a neuroinflammation treatment is a candidate for a disease or disorder treatment disclosed herein. Pre-operative evaluation typically includes routine history and physical examination including biomarker evaluation in addition to thorough informed consent disclosing all relevant risks and benefits of the procedure.

[0199] A pharmaceutical composition disclosed herein may comprise a therapeutic compound in a therapeutically effective amount. As used herein, the term "effective amount" is synonymous with "therapeutically effective amount", "effective dose", or "therapeutically effective dose" and when used in reference to treating a disease or disorder refers to the minimum dose of a therapeutic compound disclosed herein necessary to achieve the desired therapeutic effect and includes a dose sufficient to reduce a symptom associated with a disease or disorder. The effectiveness of a therapeutic compound disclosed herein in treating a disease or disorder can be determined by observing an improvement in an individual based upon one or more clinical symptoms, and/or physiological indicators associated with the condition. An improvement in a disease or disorder also can be indicated by a reduced need for a concurrent therapy.

[0200] The appropriate effective amount of a therapeutic compound disclosed herein to be administered to an individual for a particular chronic inflammation and/or a neuroinflammation can be determined by a person of ordinary skill in the art by taking into account factors, including, without limitation, the type of chronic inflammation and/or a neuroinflammation, the location of the chronic inflammation and/or a neuroinflammation, the cause of the chronic inflammation and/or a neuroinflammation, the severity of the chronic inflammation and/or a neuroinflammation, the degree of relief desired, the duration of relief desired, the particular therapeutic compound used, the pharmacokinetic properties of the particular therapeutic compound used including liberation, absorption, distribution, metabolism, and excretion, the pharmacodynamic properties of the particular therapeutic compound used including mechanism of action, dose-response relationship, desired activity, undesirable side effects, therapeutic window and duration of action, the nature of the other compounds to be included in the composition, the particular formulation, the particular route of administration, the particular characteristics, history and risk factors of the patient, such as, e.g., age, weight, general health and the like, or any combination thereof. It is known by a person of ordinary skill in the art that an effective amount of a therapeutic compound disclosed herein can be

extrapolated from in-vitro assays and in-vivo administration studies using animal models prior to administration to humans. In addition, variations in the necessary effective amount are to be expected in view of the differing efficiencies of the various routes of administration. For instance, oral administration of a therapeutic compound disclosed herein generally would be expected to require higher dosage levels than intravenous administration. Similarly, systemic administration of a therapeutic compound disclosed herein would be expected to require higher dosage levels than a local administration. Variations in these dosage levels can be adjusted using standard empirical routines of optimization, which are well-known to a person of ordinary skill in the art. One skilled in the art will also recognize that the condition of the individual can be monitored throughout the course of a method or use disclosed herein and that the effective amount of a therapeutic compound disclosed herein that is administered can be adjusted accordingly. Thus, the precise therapeutically effective dosage levels and patterns are preferably determined by the attending healthcare professional in consideration of the above-identified factors.

[0201] In some embodiments, a therapeutically effective amount of a therapeutic compound disclosed herein reduces a symptom associated with a disease or disorder by, *e.g.*, at least 10%, at least 15%, at least 20%, at least 25%, at least 30%, at least 35%, at least 40%, at least 45%, at least 50%, at least 55%, at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95% or at least 100%. In other aspects of this embodiment, a therapeutically effective amount of a therapeutic compound disclosed herein reduces a symptom associated with a disease or disorder by, *e.g.*, at most 10%, at most 15%, at most 20%, at most 25%, at most 30%, at most 35%, at most 40%, at most 45%, at most 50%, at most 55%, at most 60%, at most 65%, at most 70%, at most 75%, at most 80%, at most 85%, at most 90%, at most 95% or at most 100%. In yet other aspects of this embodiment, a therapeutically effective amount of a therapeutic compound disclosed herein reduces a symptom associated with a disease or disorder by, *e.g.*, about 10% to about 100%, about 10% to about 90%, about 10% to about 80%, about 10% to about 70%, about 10% to about 60%, about 10% to about 50%, about 10% to about 40%, about 20% to about 100%, about 20% to about 90%, about 20% to about 80%, about 20% to about 70%, about 20% to about 60%, about 20% to about 50%, about 20% to about 40%, about 30% to about 100%, about 30% to about 90%, about 30% to about 80%, about 30% to about 70%, about 30% to about 60%, or about 30% to about 50%.

[0202] In some embodiments, a therapeutically effective amount of a therapeutic compound disclosed herein generally is in the range of about 0.01 mg/kg to about 10 mg/kg. In aspects of these embodiments, an effective amount of a therapeutic compound disclosed herein may be, *e.g.*, at least 0.01 mg/kg, at least 0.05 mg/kg, at least 0.1 mg/kg, at least 0.5 mg/kg, at least 1.0 mg/kg, at least 2.0 mg/kg, at least 3.0 mg/kg, at least 4.0 mg/kg, at least 5.0 mg/kg, at least 6.0 mg/kg, at least 7.0 mg/kg, at least 8.0 mg/kg, at least 9.0 mg/kg, or at least 10 mg/kg. In other aspects of these embodiments, an effective amount of a therapeutic compound disclosed herein may be, *e.g.*, at most 0.01 mg/kg, at most 0.05 mg/kg, at most 0.1 mg/kg, at most 0.5 mg/kg, at most 1.0 mg/kg, at most 2.0 mg/kg, at most 3.0 mg/kg, at most 4.0 mg/kg, at most 5.0 mg/kg, at most 6.0 mg/kg, at most 7.0 mg/kg, at most 8.0 mg/kg, at most 9.0 mg/kg, or at most 10 mg/kg. In yet other aspects of these embodiments, an effective amount of a therapeutic compound disclosed herein may be in the range of, *e.g.*, about 0.01 mg/kg to about 0.05 mg/kg, about 0.01 mg/kg to about 0.1 mg/kg,

about 0.01 mg/kg to about 0.5 mg/kg, about 0.01 mg/kg to about 1.0 mg/kg, about 0.01 mg/kg to about 2.0 mg/kg, about 0.01 mg/kg to about 3.0 mg/kg, about 0.01 mg/kg to about 4.0 mg/kg, about 0.01 mg/kg to about 5.0 mg/kg, about 0.01 mg/kg to about 6.0 mg/kg, about 0.01 mg/kg to about 7.0 mg/kg, about 0.01 mg/kg to about 8.0 mg/kg, about 0.01 mg/kg to about 9.0 mg/kg, about 0.01 mg/kg to about 10 mg/kg, about 0.1 mg/kg to about 0.5 mg/kg, about 0.1 mg/kg to about 1.0 mg/kg, about 0.1 mg/kg to about 2.0 mg/kg, about 0.1 mg/kg to about 3.0 mg/kg, about 0.1 mg/kg to about 4.0 mg/kg, about 0.1 mg/kg to about 5.0 mg/kg, about 0.1 mg/kg to about 6.0 mg/kg, about 0.1 mg/kg to about 7.0 mg/kg, about 0.1 mg/kg to about 8.0 mg/kg, about 0.1 mg/kg to about 9.0 mg/kg, about 0.1 mg/kg to about 10 mg/kg, about 0.5 mg/kg to about 1.0 mg/kg, about 0.5 mg/kg to about 2.0 mg/kg, about 0.5 mg/kg to about 3.0 mg/kg, about 0.5 mg/kg to about 4.0 mg/kg, about 0.5 mg/kg to about 5.0 mg/kg, about 0.5 mg/kg to about 6.0 mg/kg, about 0.5 mg/kg to about 7.0 mg/kg, about 0.5 mg/kg to about 8.0 mg/kg, about 0.5 mg/kg to about 9.0 mg/kg, about 0.5 mg/kg to about 10 mg/kg, about 1.0 mg/kg to about 2.0 mg/kg, about 1.0 mg/kg to about 3.0 mg/kg, about 1.0 mg/kg to about 4.0 mg/kg, about 1.0 mg/kg to about 5.0 mg/kg, about 1.0 mg/kg to about 6.0 mg/kg, about 1.0 mg/kg to about 7.0 mg/kg, about 1.0 mg/kg to about 8.0 mg/kg, about 1.0 mg/kg to about 9.0 mg/kg, or about 1.0 mg/kg to about 10 mg/kg.

[0203] In some embodiments, a therapeutically effective amount of a therapeutic compound disclosed herein generally is in the range of about 0.01 mg/kg/day to about 10 mg/kg/day. In aspects of these embodiments, an effective amount of a therapeutic compound disclosed herein may be, *e.g.*, at least 0.01 mg/kg/day, at least 0.05 mg/kg/day, at least 0.1 mg/kg/day, at least 0.5 mg/kg/day, at least 1.0 mg/kg/day, at least 2.0 mg/kg/day, at least 3.0 mg/kg/day, at least 4.0 mg/kg/day, at least 5.0 mg/kg/day, at least 6.0 mg/kg/day, at least 7.0 mg/kg/day, at least 8.0 mg/kg/day, at least 9.0 mg/kg/day, or at least 10 mg/kg/day. In other aspects of these embodiments, an effective amount of a therapeutic compound disclosed herein may be, *e.g.*, at most 0.01 mg/kg/day, at most 0.05 mg/kg/day, at most 0.1 mg/kg/day, at most 0.5 mg/kg/day, at most 1.0 mg/kg/day, at most 2.0 mg/kg/day, at most 3.0 mg/kg/day, at most 4.0 mg/kg/day, at most 5.0 mg/kg/day, at most 6.0 mg/kg/day, at most 7.0 mg/kg/day, at most 8.0 mg/kg/day, at most 9.0 mg/kg/day, or at most 10 mg/kg/day. In yet other aspects of these embodiments, an effective amount of a therapeutic compound disclosed herein may be in the range of, *e.g.*, about 0.01 mg/kg/day to about 0.05 mg/kg/day, about 0.01 mg/kg/day to about 0.1 mg/kg/day, about 0.01 mg/kg/day to about 0.5 mg/kg/day, about 0.01 mg/kg/day to about 1.0 mg/kg/day, about 0.01 mg/kg/day to about 2.0 mg/kg/day, about 0.01 mg/kg/day to about 3.0 mg/kg/day, about 0.01 mg/kg/day to about 4.0 mg/kg/day, about 0.01 mg/kg/day to about 5.0 mg/kg/day, about 0.01 mg/kg/day to about 6.0 mg/kg/day, about 0.01 mg/kg/day to about 7.0 mg/kg/day, about 0.01 mg/kg/day to about 8.0 mg/kg/day, about 0.01 mg/kg/day to about 9.0 mg/kg/day, about 0.01 mg/kg/day to about 10 mg/kg/day, about 0.1 mg/kg/day to about 0.5 mg/kg/day, about 0.1 mg/kg/day to about 1.0 mg/kg/day, about 0.1 mg/kg/day to about 2.0 mg/kg/day, about 0.1 mg/kg/day to about 3.0 mg/kg/day, about 0.1 mg/kg/day to about 4.0 mg/kg/day, about 0.1 mg/kg/day to about 5.0 mg/kg/day, about 0.1 mg/kg/day to about 6.0 mg/kg/day, about 0.1 mg/kg/day to about 7.0 mg/kg/day, about 0.1 mg/kg/day to about 8.0 mg/kg/day, about 0.1 mg/kg/day to about 9.0 mg/kg/day, about 0.1 mg/kg/day to about 10 mg/kg/day, about 0.5 mg/kg/day to about 1.0 mg/kg/day, about 0.5 mg/kg/day to about 2.0 mg/kg/day, about 0.5 mg/kg/day to about 3.0 mg/kg/day, about 0.5 mg/kg/day to about 4.0 mg/kg/day, about 0.5 mg/kg/day to about 5.0 mg/kg/day, about 0.5 mg/kg/day to about 6.0 mg/kg/day, about 0.5 mg/kg/day to about 7.0 mg/kg/day, about 0.5 mg/kg/day to about 8.0 mg/kg/day, about 0.5 mg/kg/day to about 9.0 mg/kg/day, about 0.5 mg/kg/day to about 10 mg/kg/day, about 1.0 mg/kg/day to about 2.0 mg/kg/day, about 1.0 mg/kg/day to about 3.0 mg/kg/day, about 1.0 mg/kg/day to about 4.0 mg/kg/day, about 1.0 mg/kg/day to about 5.0 mg/kg/day, about 1.0 mg/kg/day to about 6.0 mg/kg/day, about 1.0 mg/kg/day to about 7.0 mg/kg/day, about 1.0 mg/kg/day to about 8.0 mg/kg/day, about 1.0 mg/kg/day to about 9.0 mg/kg/day, about 1.0 mg/kg/day to about 10 mg/kg/day, or about 1.0 mg/kg/day to about 10 mg/kg/day.

about 0.5 mg/kg/day to about 7.0 mg/kg/day, about 0.5 mg/kg/day to about 8.0 mg/kg/day, about 0.5 mg/kg/day to about 9.0 mg/kg/day, about 0.5 mg/kg/day to about 10 mg/kg/day, about 1.0 mg/kg/day to about 2.0 mg/kg/day, about 1.0 mg/kg/day to about 3.0 mg/kg/day, about 1.0 mg/kg/day to about 4.0 mg/kg/day, about 1.0 mg/kg/day to about 5.0 mg/kg/day, about 1.0 mg/kg/day to about 6.0 mg/kg/day, about 1.0 mg/kg/day to about 7.0 mg/kg/day, about 1.0 mg/kg/day to about 8.0 mg/kg/day, about 1.0 mg/kg/day to about 9.0 mg/kg/day, or about 1.0 mg/kg/day to about 10 mg/kg/day.

[0204] Dosing can be single dosage or cumulative (serial dosing), and can be readily determined by one skilled in the art. For instance, treatment of a disease or disorder may comprise a one-time administration of an effective dose of a pharmaceutical composition disclosed herein. Alternatively, treatment of a disease or disorder may comprise multiple administrations of an effective dose of a pharmaceutical composition carried out over a range of time periods, such as, e.g., once daily, twice daily, trice daily, once every few days, or once weekly. The timing of administration can vary from individual to individual, depending upon such factors as the severity of an individual's symptoms. For example, an effective dose of a pharmaceutical composition disclosed herein can be administered to an individual once daily for an indefinite period of time, or until the individual no longer requires therapy. A person of ordinary skill in the art will recognize that the condition of the individual can be monitored throughout the course of treatment and that the effective amount of a pharmaceutical composition disclosed herein that is administered can be adjusted accordingly.

[0205] In one embodiment, upon administration to an individual, a pharmaceutical composition comprising a therapeutic compound disclosed herein results in a bio-distribution of the therapeutic compound different than a bio-distribution of the therapeutic compound included in the same pharmaceutical composition, except without the one or more digestion enhancers disclosed herein.

[0206] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about

30% by weight of one or more hard fats, about 30% to about 45% by weight of one or more liquid fats, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats, about 30% to about 45% by weight of one or more liquid fats, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to

about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats, about 30% to about 45% by weight of one or more liquid fats, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants.

[0207] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C_{10-C24} triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C_{10-C24} triglycerides, about 30% to about 45% by weight of one

or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C_{10-C24} triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants.

[0208] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by

weight of one or more hard fats comprising C₁₀-C₂₄ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C₁₀-C₂₄ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more

free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C₁₀-C₂₄ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, the one or more bile acids in the above embodiments comprises cholic acid.

[0209] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising a mixture of saturated C₁₀-C₁₈ triglycerides and/or saturated C₁₂-C₁₈ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and about 1% to about 5% by weight of one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by

weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and about 1% to about 5% by weight of one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising a mixture of saturated C₁₀-C₁₈ triglycerides and/or saturated C₁₂-C₁₈ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and about 1% to about 5% by weight of one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, about 1% to about 5% by weight of one or more bile acids, preferably cholic acid, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, about 1% to about 5% by weight of one or more bile acids, preferably cholic acid, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of a therapeutic compound, the therapeutic compound comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds,

about 15% to about 30% by weight of one or more hard fats comprising a mixture of saturated C₁₀-C₁₈ triglycerides and/or saturated C₁₂-C₁₈ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, about 1% to about 5% by weight of one or more bile acids, preferably cholic acid, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof.

[0210] In the embodiments of the preceding four paragraphs, the therapeutic compound is a) one or more BCS Class I therapeutic compounds, one or more BCS Class II therapeutic compounds, one or more BCS Class III therapeutic compounds, one or more BCS Class IV therapeutic compounds, or any combination thereof; or b) one or more hydrophilic therapeutic compounds, one or more amphipathic therapeutic compounds, one or more hydrophobic therapeutic compounds, one or more lipophilic therapeutic compounds, one or more therapeutic compounds comprising an organic acid functional group, one or more therapeutic compounds comprising an organic base functional group, or any combination thereof; or c) one or more analgesics, one or more anesthetics, one or more antibacterials, one or more anticoagulants, one or more anticonvulsants, one or more antidementia agents, one or more antidepressants, one or more antidotes and antitoxins, one or more antiemetics, one or more antifungals, one or more anti-inflammatory agents, one or more antimigraine agents, one or more antimuscarinic agents, one or more antimycobacterials, one or more antineoplastics, one or more antiparasitics, one or more antiparkinson agents, one or more antipsychotics, one or more antivirals, one or more anxiolytic agents, one or more bipolar agents, one or more blood glucose regulators, one or more blood products, one or more cardiovascular agents, one or more central nervous system agents, one or more dental and oral agents, one or more dermatological agents, one or more enzyme replacement agent, one or more gastrointestinal agents, one or more genitourinary agents, one or more hormonal agents, one or more hormone suppressant, one or more immunological agents, one or more inflammatory bowel disease agents, one or more metabolic bone disease agents, one or more nootropic agents, one or more ophthalmic agents, one or more otic agents, one or more respiratory tract agents, one or more sedatives and hypnotics, one or more skeletal muscle relaxants, one or more and therapeutic nutrients, one or more minerals, one or more electrolytes, or any combination thereof; or d) one or more 5-alpha-reductase inhibitors, one or more 5-aminosalicylates, one or more 5HT₃ receptor antagonists, one or more adamantane, one or more adrenal cortical steroids, one or more adrenal corticosteroid inhibitors, one or more agents for hypertensive emergencies, one or more agents for pulmonary hypertension, one or more aldosterone receptor antagonists, one or more alkylating agents, one or more allergenics, one or more alpha-glucosidase inhibitors, one or more alternative medicines, one or more amebicides, one or more aminoglycosides, one or more aminopenicillins, one or more aminosaliclates, one or more AMPA receptor antagonists, one or more amphetamines, one or more amylin analogs, one or more analgesics, one or more androgens, one or more anabolic steroids, one or more Angiotensin Converting Enzyme (ACE) inhibitors, one or more angiotensin II inhibitors, one or more angiotensin receptor blockers, one or more anorexiant, one or more antacids, one or more antiadrenergic agents, one or more antiandrogens, one or more antianginal agents,

one or more antiarrhythmic agents, one or more antiasthmatic agents, one or more antianxiety agents, one or more antibiotics, one or more anticholinergic agents, one or more anticoagulants, one or more anticoagulant reversal agents, one or more anticonvulsants, one or more antidepressants, one or more antidiabetic agents, one or more antidiarrheals, one or more antidotes, one or more antiemetic agents, one or more antifungals, one or more antigonadotropic agents, one or more antigout agents, one or more antihelminthic agents, one or more antihistamines, one or more antihyperlipidemic agents, one or more antihypertensive agents, one or more antihyperuricemic agents, one or more antiinfective agents, one or more antimalarial agents, one or more antimanic agents, one or more antimetabolites, one or more antimigraine agents, one or more antineoplastic agents, one or more antineoplastic detoxifying agents, one or more antineoplastic interferons, one or more antiparkinson agents, one or more antiplatelet agents, one or more antipseudomonal penicillins, one or more antipsoriatics, one or more antipsychotics, one or more antirheumatics, one or more antirosacea agents, one or more antiseptic and germicides, one or more antispasmodics, one or more antithyroid agents, one or more antitoxins and antivenins, one or more antituberculosis agents, one or more antitussive agents, one or more antivertigo agents, one or more antiviral agents, one or more antiviral boosters, one or more anxiolytics, one or more sedatives, one or more and hypnotics, one or more aromatase inhibitors, one or more astringents, one or more atypical antipsychotics, one or more azole, one or more barbiturates, one or more BCR-ABL tyrosine kinase inhibitors, one or more benzodiazepines, one or more beta blockers, one or more beta-adrenergic blocking agents, one or more beta-lactamase inhibitors, one or more bile acid sequestrants, one or more bisphosphonates, one or more bone morphogenetic proteins, one or more bone resorption inhibitors, one or more bronchodilator combinations, one or more bronchodilators, one or more BTK inhibitors, one or more calcimimetics, one or more calcineurin inhibitors, one or more calcitonin, one or more calcium channel blocking agents, one or more carbapenems, one or more carbonic anhydrase inhibitors, one or more cardiac stressing agents, one or more cardioselective beta blockers, one or more cardiovascular agents, one or more catecholamines, one or more CDK 4/6 inhibitors, one or more central nervous system agents, one or more cephalosporins, one or more cerumenolytics, one or more CFTR potentiators, one or more CGRP inhibitors, one or more chelating agents, one or more chemokine receptor antagonist, one or more chloride channel activators, one or more cholesterol absorption inhibitors, one or more cholinergic agonists, one or more cholinergic muscle stimulants, one or more cholinesterase inhibitors, one or more chronotropic agents, one or more CNS agents, one or more CNS stimulants, one or more coagulation modifiers, one or more colony stimulating factors, one or more corticosteroids, one or more corticotropin, one or more coumarins and indandiones, one or more cox-2 inhibitors, one or more decongestants, one or more diarylquinolines, one or more dibenzazepine, one or more diagnostic dyes, one or more dipeptidyl peptidase 4 inhibitors, one or more disease-modifying antirheumatic drugs (DMARDs), one or more diuretics, one or more echinocandins, one or more EGFR inhibitors, one or more erythropoiesis agents, one or more estrogen receptor antagonists, one or more estrogens, one or more expectorants, one or more factor Xa inhibitors, one or more fibric acid derivatives, one or more first generation cephalosporins, one or more fourth generation cephalosporins, one or more functional bowel disorder agents, one or more gallstone solubilizing agents, one or more gamma-aminobutyric acid analogs, one or more gamma-aminobutyric acid reuptake inhibitors, gastrointestinal agents, one or more genitourinary tract agents, one or more GI stimulants, one or more glucocorticoids, one or more glucose elevating agents, one or more

glycoprotein platelet inhibitors, one or more glycylicyclines, one or more gonadotropin releasing hormones, one or more gonadotropin-releasing hormone antagonists, one or more gonadotropins, one or more group I antiarrhythmics, one or more group II antiarrhythmics, one or more group III antiarrhythmics, one or more group IV antiarrhythmics, one or more group V antiarrhythmics, one or more growth hormone receptor blockers, one or more growth hormones, one or more guanylate cyclase-C agonists, one or more H. pylori eradication agents, one or more H2 antagonists, one or more hedgehog pathway inhibitors, one or more hematopoietic stem cell mobilizer, one or more heparin antagonists, one or more heparins, one or more HER2 inhibitors, one or more herbal products, one or more histone deacetylase inhibitors, one or more hormones, one or more hydantoin, one or more hydrazide derivatives, one or more immunologic agents, one or more immunostimulants, one or more immunosuppressive agents, one or more impotence agents, one or more incretin mimetics, one or more inotropic agents, one or more insulin, one or more insulin-like growth factors, one or more integrase strand transfer inhibitor, one or more interferons, one or more interleukin inhibitors, one or more interleukins, one or more intravenous nutritional products, one or more investigational drugs, one or more iodinated contrast media, one or more iron products, one or more ketolides, one or more leprostatics, one or more leukotriene modifiers, one or more lincomycin derivatives, one or more local injectable anesthetics, one or more lymphatic staining agents, one or more macrolide derivatives, one or more macrolides, one or more magnetic resonance imaging contrast media, one or more malignancy photosensitizers, one or more mast cell stabilizers, one or more meglitinides, one or more melanocortin receptor agonists, one or more metabolic agents, one or more methylxanthines, one or more mineralocorticoids, one or more minerals and electrolytes, one or more mitotic inhibitors, one or more monoamine oxidase inhibitors, one or more mTOR inhibitors, one or more mucolytics, one or more multikinase inhibitors, one or more muscle relaxants, one or more mydriatics, one or more neprilysin inhibitors, one or more neuraminidase inhibitors, one or more neuromuscular blocking agents, one or more neuronal potassium channel openers, one or more NHE3 inhibitors, one or more nicotinic acid derivatives, one or more NK1 receptor antagonists, one or more non-opioids, one or more NNRTIs, one or more non-cardioselective beta blockers, one or more non-sulfonylureas, one or more nonsteroidal anti-inflammatory drugs, one or more nootropic agents, one or more NS5A inhibitors, one or more nucleoside reverse transcriptase inhibitors (NRTIs), one or more nutraceutical products, one or more nutritional products, one or more ophthalmic agents, one or more opioids, one or more otic agents, one or more oxazolidinone, one or more parathyroid hormone and analogs, one or more PARP inhibitors, one or more PCSK9 inhibitors, one or more penicillins, one or more peripheral opioid receptor antagonists, one or more peripheral opioid receptor mixed agonists/antagonists, one or more peripheral vasodilators, one or more peripherally acting antiobesity agents, one or more phenothiazine, one or more phenylpiperazine, one or more phosphate binders, one or more PI3K inhibitors, one or more plasma expanders, one or more platelet aggregation inhibitors, one or more platelet-stimulating agents, one or more polyenes, one or more probiotics, one or more progesterone receptor modulators, one or more progestins, one or more prolactin inhibitors, one or more prostaglandin D2 antagonists, one or more protease inhibitors, one or more protease-activated receptor-1 antagonists, one or more proteasome inhibitors, one or more proton pump inhibitors, one or more PPAR agonists, one or more psoralens, one or more psychotherapeutic agents, one or more purine nucleosides, one or more pyrrolidine, one or more quinolones, one or more radiocontrast agents, one or more radiologic adjuncts, one or more radiologic agents, one or more radiologic conjugating

agents, one or more radiopharmaceuticals, one or more renal replacement solutions, one or more renin inhibitors, one or more respiratory agents, one or more rifamycin derivatives, one or more salicylates, one or more sclerosing agents, one or more second generation cephalosporins, one or more selective estrogen receptor modulators, one or more selective immunosuppressants, one or more selective phosphodiesterase-4 inhibitors, one or more selective serotonin reuptake inhibitors, one or more serotonin-norepinephrine reuptake inhibitors, one or more serotonergic neuroenteric modulators, one or more sex hormones, one or more SGLT-2 inhibitors, one or more skeletal muscle relaxants, one or more smoking cessation agents, one or more somatostatin and somatostatin analogs, one or more spermicides, one or more statins, one or more streptogramins, one or more streptomyces derivatives, one or more succinimide, one or more sulfonamides, one or more sulfonylureas, one or more sympathomimetic amines, one or more synthetic ovulation stimulants, one or more tetracyclines, one or more therapeutic radiopharmaceuticals, one or more thiazide, one or more thiazolidinediones, one or more thioxanthenes, one or more third generation cephalosporins, one or more thrombin inhibitors, one or more thrombolytics, one or more thyroid drugs, one or more TNF α inhibitors, one or more tocolytic agents, one or more transthyretin stabilizers, one or more triazines, one or more urea cycle disorder agents, one or more urinary pH modifiers, one or more uterotonic agents, one or more vasodilators, one or more vasopressin antagonists, one or more vasopressors, one or more VEGF/VEGFR inhibitors, one or more viscosupplementation agents, one or more vitamin, one or more VMAT2 inhibitors, or any combination thereof; or e) an alkylating agent, an anti-metabolite, a cytotoxic antibiotic, a NSAID, a paracetamol-type therapeutic compound, a plant alkaloid and terpenoid, a PPAR α agonist, a PPAR γ agonist, a PPAR δ agonist, a dual PPAR- α/γ agonist, a PPAR-13 agonist, a topoisomerase inhibitor, amphetamines, anticholinergic agents, anticonvulsant agents, antidementia agents, antidepressant agents, antispasticity agents, antiemetic agents, antimigraine agents, anti-obesity agents, antiparkinson agents, antipsychotic agents, anxiolytic agents, attention deficit hyperactivity disorder agents, benzodiazepines, bipolar agents, calcitonin gene-related peptide (CGRP) receptor antagonists, calcium channel modifying agents, cholinesterase inhibitors, dopamine agonists, dopamine precursors and/or l-amino acid decarboxylase inhibitors, emetogenic therapy adjuncts, ergot alkaloids, fibromyalgia agents, gamma-aminobutyric acid (GABA) augmenting agents, monoamine oxidase inhibitors, monoamine oxidase B inhibitors, multiple sclerosis agents, N-methyl-D-aspartate (NMDA) receptor antagonist, selective serotonin reuptake inhibitors/serotonin and norepinephrine reuptake inhibitors (SSRI/SNRI), serotonin (5-HT) receptor agonists, sleep disorder agents, sleep promoting agents, sodium channel modifying agents, tricyclic agents, and wakefulness promoting agents, a fibrate, a statin, a tocotrienol, a niacin, a bile acid sequestrants (resin), a cholesterol absorption inhibitor, a pancreatic lipase inhibitor, an α -adrenergic agonist, a β -adrenergic agonist, a dopaminergic agonist, a monoamine oxidase (MAO) inhibitor, a COMT inhibitor, a retinoid, a vitamin, a cannabinoid, a cannabinoid receptor modulator, a 5-HT₃ serotonin ion channel antagonist, a 5-HT serotonin G-protein receptor antagonist, a CB1 agonist, a D₂/D₃ antagonist, a H₁ antagonist, a mACh antagonist, a NK1 antagonist, or any combination thereof; or f) abiraterone, amlexanox, aprepitant, auranofin, cannabidiol, curcumin, diclofenac, eliglustat, fenofibrate, ibuprofen, mebendazole, midastaurin, naproxen, niflumic acid, nintedanib, olaparib, pirfenidone, pitolisant, telmisartan, or any combination thereof.

[0211] In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more glycerolipids, and one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats, and one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats, one or more liquid fats, and one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more glycerolipids, one or more free C₁₄₋₂₄ fatty acids, and one or more bile acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats, one or more free C₁₄₋₂₄ fatty acids, and one or more bile acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats, one or more liquid fats, one or more free C₁₄₋₂₄ fatty acids, and one or more bile acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more glycerolipids, one or more free C₁₄₋₂₄ fatty acids, one or more bile acids, and one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats, one or more free C₁₄₋₂₄ fatty acids, one or more bile acids, and one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats, one or more liquid fats, one or more free C₁₄₋₂₄ fatty acids, one or more bile acids, and one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, the one or more bile acids in the above embodiments comprises cholic acid. In some embodiments, the solid particle component of the NK₁ receptor antagonist in the above embodiments comprises cholic acid. In some embodiments, an NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0212] In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats comprising C_{10-C24} triglycerides, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more glycerolipids, one or more free C₁₄₋₂₄ fatty acids, and one or more bile acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, one or more free C₁₄₋₂₄ fatty acids, and one or more bile acids. In some embodiments, a pharmaceutical composition comprises

an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats comprising C₁₀-C₂₄ triglycerides, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, one or more free C₁₄₋₂₄ fatty acids, and one or more bile acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more glycerolipids, one or more free C₁₄₋₂₄ fatty acids, one or more bile acids, and one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, one or more free C₁₄₋₂₄ fatty acids, one or more bile acids, and one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats comprising C₁₀-C₂₄ triglycerides, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, one or more free C₁₄₋₂₄ fatty acids, one or more bile acids, and one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, the one or more bile acids in the above embodiments comprises cholic acid. In some embodiments, an NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0213] In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and one or more free C₁₄₋₁₈ fatty acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats comprising C₁₀-C₂₄ triglycerides, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and one or more free C₁₄₋₁₈ fatty acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more glycerolipids, one or more free C₁₄₋₁₈ fatty acids, and one or more bile acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, one or more free C₁₄₋₁₈ fatty acids, and one or more bile acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats comprising C₁₀-C₂₄ triglycerides, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, one or more free C₁₄₋₁₈ fatty acids, and one or more bile acids. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more glycerolipids, one or more free C₁₄₋₁₈ fatty acids, one or more bile acids, and one or more free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, one or more free C₁₄₋₁₈ fatty acids, one or more bile acids, and one or more free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, a

pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats comprising C₁₀-C₂₄ triglycerides, one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, one or more free C₁₄₋₁₈ fatty acids, one or more bile acids, and one or more free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, the one or more bile acids in the above embodiments comprises cholic acid. In some embodiments, an NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0214] In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, and one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats comprising a mixture of saturated C₁₀-C₁₈ triglycerides and/or saturated C₁₂-C₁₈ triglycerides, one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, and one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more glycerolipids, one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats comprising a mixture of saturated C₁₀-C₁₈ triglycerides and/or saturated C₁₂-C₁₈ triglycerides, one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more glycerolipids, one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, one or more bile acids, preferably cholic acid, and one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, one or more bile acids, preferably cholic acid, and one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a

stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof. In some embodiments, a pharmaceutical composition comprises an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component, one or more hard fats comprising a mixture of saturated C₁₀-C₁₈ triglycerides and/or saturated C₁₂-C₁₈ triglycerides, one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, one or more bile acids, preferably cholic acid, and one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof. In some embodiments, an NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0215] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats, about 30% to about 45% by weight of one or more liquid fats, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard

fats, about 30% to about 45% by weight of one or more liquid fats, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats, about 30% to about 45% by weight of one or more liquid fats, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, the one or more bile acids in the above embodiments comprises cholic acid. In some embodiments, an NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0216] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C₁₀-C₂₄ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more

glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C_{10-C24} triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C_{10-C24} triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, the one or more bile acids in the above embodiments comprises cholic acid. In some embodiments, an NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0217] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C_{10-C24} triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C_{10-C24} triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids

including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C₁₀-C₂₄ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, the one or more bile acids in the above embodiments comprises cholic acid. In some embodiments, an NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0218] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising a mixture of saturated C₁₀-C₁₈ triglycerides and/or saturated C₁₂-C₁₈ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and about 1% to about 5% by weight of one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, about 30% to about

45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and about 1% to about 5% by weight of one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising a mixture of saturated C_{10-C18} triglycerides and/or saturated C_{12-C18} triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C_{16-C18} mono-, C_{16-C18} di- and C_{16-C18} triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and about 1% to about 5% by weight of one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, about 1% to about 5% by weight of one or more bile acids, preferably cholic acid, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C_{16-C18} mono-, C_{16-C18} di- and C_{16-C18} triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, about 1% to about 5% by weight of one or more bile acids, preferably cholic acid, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 25% to 100% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising a mixture of saturated C_{10-C18} triglycerides and/or saturated C_{12-C18} triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C_{16-C18} mono-, C_{16-C18} di- and C_{16-C18} triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, about 1% to about 5% by weight of one or more bile acids, preferably cholic acid, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof. In some embodiments, an NK₁ receptor antagonist

comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0219] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats, about 30% to about 45% by weight of one or more liquid fats, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats, about 30% to about 45% by weight of one or more liquid fats,

about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats, about 30% to about 45% by weight of one or more liquid fats, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, the one or more bile acids in the above embodiments comprises cholic acid. In some embodiments, an NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0220] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30%

by weight of one or more hard fats comprising C₁₀-C₂₄ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C₁₀-C₂₄ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more

free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C₁₀-C₂₄ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₂₄ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₂₄ fatty acid surfactants. In some embodiments, the one or more bile acids in the above embodiments comprises cholic acid. In some embodiments, an NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0221] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C₁₀-C₂₄ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially

hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C_{10-C₂₄} triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, and about 1% to about 5% by weight of one or more bile acids. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising C_{10-C₂₄} triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed glycerolipids including a mixture of mono-, di- and triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, about 1% to about 5% by weight of one or more bile acids, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants. In some embodiments, the one or more bile acids in the above embodiments comprises cholic acid. In some embodiments, an NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0222] In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising a mixture of saturated C₁₀-C₁₈ triglycerides and/or saturated C₁₂-C₁₈ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, and about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and about 1% to about 5% by weight of one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and about 1% to about 5% by weight of one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising a mixture of saturated C₁₀-C₁₈ triglycerides and/or saturated C₁₂-C₁₈ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides

including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, and about 1% to about 5% by weight of one or more bile acids, preferably cholic acid. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 35% to about 75% of one or more glycerolipids, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, about 1% to about 5% by weight of one or more bile acids, preferably cholic acid, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, about 1% to about 5% by weight of one or more bile acids, preferably cholic acid, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof. In some embodiments, a pharmaceutical composition comprises about 25 mg/mL to about 600 mg/mL or about 0.1% to about 30% by weight of an NK₁ receptor antagonist, the NK₁ receptor antagonist comprising a solid particle component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds and a solubilized component in an amount of about 40% to about 60% by weight of the total weight amount of one or more therapeutic compounds, about 15% to about 30% by weight of one or more hard fats comprising a mixture of saturated C₁₀-C₁₈ triglycerides and/or saturated C₁₂-C₁₈ triglycerides, about 30% to about 45% by weight of one or more liquid fats comprising partially hydrolyzed triglycerides including a mixture of C₁₆-C₁₈ mono-, C₁₆-C₁₈ di- and C₁₆-C₁₈ triglycerides, about 30% to about 45% by weight of one or more free C₁₄₋₁₈ fatty acids, preferably oleic acid, steric acid, linoleic acid, or any combination thereof, about 1% to about 5% by weight of one or more bile acids, preferably cholic acid, and about 0.1% to about 5% by weight of one or more free C₁₄₋₁₈ fatty acid surfactants, preferably an oleate alkali metal or alkali earth metal salt, a stearate alkali metal or alkali earth metal salt, a linoleate alkali metal or alkali earth metal salt, or any combination thereof. In some embodiments, an NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof, preferably an NK₁ receptor antagonist comprises an aprepitant.

[0223] Aspects of the present specification can also be described by the following embodiments:

1. A pharmaceutical composition, the pharmaceutical composition comprising a) one or more therapeutic compounds, the one or more therapeutic compounds comprising a solid particle component, b) one or more glycerolipids, and c) one or more digestion enhancers, wherein the solid particle component comprises the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids.
2. The pharmaceutical composition of embodiment 1, wherein the one or more therapeutic compounds comprise a fibrate, a statin, an insulin sensitizer, a secretagogue, a benzimidazole, a Phosphodiesterase inhibitor, an adrenergic receptor antagonist, a cancer drug, a 5-lipoxygenase inhibitor, a CCR1 antagonist, an ADP receptor antagonist, an inflammasome modulator, a microglial modulator, a NSAID, a NK₁ receptor antagonist, a Cannabinoid, a protein kinase inhibitor, a PARP inhibitor, or any combination thereof.
3. The pharmaceutical composition of embodiment 2, wherein the fibrate comprises a bezafibrate, a ciprofibrate, a clonofibrate, a clofibrate, a clofibrate, an etofibrate, a fenofibrate, a fenofibric acid, a gemfibrozil, a nafenopin, a ronifibrate, a simfibrate, or any combination thereof.
4. The pharmaceutical composition of embodiment 2, wherein the statin comprises atorvastatin, fluvastatin, lovastatin, pitavastatin, pravastatin, rosuvastatin, simvastatin, or any combination thereof.
5. The pharmaceutical composition of embodiment 2, wherein the insulin sensitizer comprises a biguanide, a thiazolidinedione (or glitazone), a dual PPAR- α/γ agonist (a glitazar), a lyn kinase activator, or any combination thereof.
6. The pharmaceutical composition of embodiment 5, wherein the biguanidine comprises buformin, chlorproguanil, metformin, phenformin, proguanil, or any combination thereof.
7. The pharmaceutical composition of embodiment 5, wherein the thiazolidinedione comprises Ciglitazone, Darglitazone, Englitazone, Lobeglitazone, Netoglitazone, Pioglitazone, Rivoglitazone, Rosiglitazone, Troglitazone, or any combination thereof.
8. The pharmaceutical composition of embodiment 5, wherein the dual PPAR agonist comprises Aloglitazar, Muraglitazar, Saroglitazar, Tesaglitazar, or any combination thereof.
9. The pharmaceutical composition of embodiment 5, wherein the lyn kinase activator comprises tolmidone, or any combination thereof.
10. The pharmaceutical composition of embodiment 2, wherein the secretagogue comprises a sulfonylurea, a nonsulfonylurea, a meglitinide (or glinide), a GLP-1 receptor agonist, a DPP-4 inhibitor (or gliptin), a FFAR1 agonist, or any combination thereof.
11. The pharmaceutical composition of embodiment 10, wherein the sulfonylurea comprises acetohexamide, carbutamide, chlorpropamide, glycyclamide, metahexamide, tolazamide, tolbutamide, glibenclamide (glyburide), glibomuride, glicaramide, gliclazide, glimepiride, glipizide, gliquidone, glisoxepide, glyburide, glycopyramide, or any combination thereof.
12. The pharmaceutical composition of embodiment 10, wherein the meglitinide comprises mitiglinide, nateglinide, repaglinide, or any combination thereof.
13. The pharmaceutical composition of embodiment 10, wherein the GLP-1 receptor agonist comprises albiglutide, dulaglutide, exenatide, liraglutide, lixisenatide, semaglutide, taspoglutide, or any combination thereof.

14. The pharmaceutical composition of embodiment 10, wherein the DPP-4 inhibitor comprises alogliptin, anagliptin, evogliptin, garvagliptin, gemigliptin, gosogliptin, linagliptin, melogliptin, omarigliptin, saxagliptin, sepagliptin, sitagliptin, teneligliptin, trelagliptin, vildagliptin, or any combination thereof.
15. The pharmaceutical composition of embodiment 10, wherein the FFAR1 agonist comprises fasiglifam.
16. The pharmaceutical composition of embodiment 2, wherein the benzimidazole comprises albendazole, benzimidazole, ciclo bendazole, fenbendazole, flubendazole, mebendazole, oxfendazole, oxibendazole, thiabendazole, and triclabendazole, or any combination thereof.
17. The pharmaceutical composition of embodiment 2, wherein the phosphodiesterase inhibitor comprises a PDE 1 selective inhibitor, a PDE 2 selective inhibitor, a PDE 3 selective inhibitor, a PDE 4 selective inhibitor, a PDE 5 selective inhibitor, a PDE 10 selective inhibitor, or any combination thereof.
18. The pharmaceutical composition of embodiment 16, wherein the PDE1 selective inhibitor comprises Vinpocetine.
19. The pharmaceutical composition of embodiment 16, wherein the PDE2 selective inhibitor comprises BAY 60-7550 (2-[(3,4-dimethoxyphenyl)methyl]-7-[(1R)-1-hydroxyethyl]-4-phenylbutyl]-5-methylimidazo[5,1-f][1,2,4]triazin-4(1H)-one), EHNA (erythro-9-(2-hydroxy-3-nonyl)adenine), Oxindole, PDP (9-(6-Phenyl-2-oxohex-3-yl)-2-(3,4-dimethoxybenzyl)-purin-6-one), or any combination thereof.
20. The pharmaceutical composition of embodiment 16, wherein the PDE3 selective inhibitor comprises Anagrelide, Cilostazol, Enoximone, Inamrinone, Milrinone, or any combination thereof.
21. The pharmaceutical composition of embodiment 16, wherein the PDE4 selective inhibitor comprises Drotaverine, Ibudilast, Luteolin, Mesembrine, Piclamilast, Roflumilast, Rolipram, or any combination thereof.
22. The pharmaceutical composition of embodiment 16, wherein the PDE5 selective inhibitor comprises Avanafil, Dipyridamole, Icariin, 4-Methylpiperazine, Pyrazolo Pyrimidin-7-1, Sildenafil, Tadalafil, Udenafil, Vardenafil, or any combination thereof.
23. The pharmaceutical composition of embodiment 16, wherein the PDE10 selective inhibitor comprises Papaverine.
24. The pharmaceutical composition of embodiment 2, wherein the adrenergic receptor antagonist comprises an α 1-adrenergic antagonist, an α 2-adrenergic antagonist, a β -adrenergic antagonist, or any combination thereof.
25. The pharmaceutical composition of embodiment 24, wherein the α 1-adrenergic antagonist comprises Abanoquil, Ajmalicine, Alfuzosin, Anisodamine, Anisodine, Atiprosin, Atypical antipsychotics (e.g., brexpiprazole, clozapine, olanzapine, quetiapine, risperidone), Benoxathian, Beta blockers (e.g., adimolol, amosulalol, arotinolol, carvedilol, eugenodilol, labetalol), Buflomedil, Bunazosin, Corynanthine, Dapiprazole, Domesticine, Doxazosin, Ergolines (e.g., acetergamine, ergotamine, dihydroergotamine, lisuride, nicergoline, terguride), Etoperidone, Fenspiride, Hydroxyzine, Indoramin, Ketanserin, L-765,314, mCPP, Mepiprazole, Metazosin, Monatepil, Moxisylyte, Naftopidil, Nantenine, Neldazosin, Niaprazine, Niguldipine, Pardoprinox, Pelanserin, Perlapine, Phendioxan, Phenoxybenzamine, Phentolamine, Phenylpiperazine antidepressants (e.g., hydroxynefazodone, nefazodone, trazodone, triazoledione), Piperoxan, Prazosin, Quinazosin, Quinidine, Silodosin, Spegatine, Spiperone, Talipexole, Tamsulosin, Terazosin, Tiodazosin, Tolazoline, Tetracyclic antidepressants (e.g., amoxapine, maprotiline, mianserin), Tricyclic antidepressants (e.g., amitriptyline,

clomipramine, doxepin, imipramine, trimipramine), Trimazosin, Typical antipsychotics (e.g., chlorpromazine, fluphenazine, loxapine, thioridazine), Urapidil, WB-4101, Zolertine, or any combination thereof.

26. The pharmaceutical composition of embodiment 24, wherein the α 2-adrenergic antagonist comprises 1-PP, Adimolol, Amesergide, Aptazapine, Atipamezole, Atypical antipsychotics (e.g., asenapine, brexpiprazole, clozapine, lurasidone, olanzapine, paliperidone, quetiapine, risperidone, zotepine), Azapirones (e.g., buspirone, gepirone, ipsapirone, tandospirone), BRL-44408, Buflomedil, Cirazoline, Efaroxan, Esmirtazapine, Fenmetozole, Fluparoxan, Idazoxan, Ketanserin, Lisuride, mCPP, Mianserin, Mirtazapine, NAN-190, Pardoprunox, Phentolamine, Phenoxybenzamine, Piperoxan, Piribedil, Rauwolscine, Rotigotine, Setiptiline, Spegatine, Spiroxatrine, Sunepitron, Terguride, Tolazoline, Typical antipsychotics (e.g., chlorpromazine, fluphenazine, loxapine, thioridazine), Yohimbine, or any combination thereof.
27. The pharmaceutical composition of embodiment 24, wherein the β -adrenergic antagonist comprises Acebutolol, Adaprolol, Adimolol, Afurolol, Alprenolol, Alprenoxime, Amosulalol, Ancarolol, Arnolol, Arotinolol, Atenolol, Befunolol, Betaxolol, Bevantolol, Bisoprolol, Bopindolol, Bornaprolol, Brefonalol, Bucindolol, Bucumolol, Bufetolol, Bufuralol, Bunitrolol, Bunolol, Bupranolol, Butaxamine, Butidrine, Butofilolol, Capsinolol, Carazolol, Carpindolol, Carteolol, Carvedilol, Celiprolol, Cetamolol, Cicloprolol, Cinamolol, Cloranolol, Cyanopindolol, Dalbraminol, Dexpropranolol, Diacetolol, Dichloroisoprenaline, Dihydroalprenolol, Dilevalol, Diprafenone, Draquinolol, Ecastolol, Epanolol, Eriolol, Ersentilide, Esatenolol, Esprolol, Eugenodilol, Exaprolol, Falintolol, Flestolol, Flusoxolol, Hydroxycarteolol, Hydroxytertatolol, ICI-188,551, Idropranolol, Indenolol, Indopanolol, Iodocyanopindolol, Iprocrolol, Isoxaprolol, Isamoltane, Labetalol, Landiolol, Levobetaxolol, Levobunolol, Levomoprolol, Medroxalol, Mepindolol, Metipranolol, Metoprolol, Moprolol, Nadolol, Nadoxolol, Nebivolol, Nifenalol, Nipradilol, Oxprenolol, Pacrinolol, Pafenolol, Pamatolol, Pargolol, Penbutolol, Pindolol, Practolol, Primidolol, Procinolol, Pronethalol, Propafenone, Propranolol, Ridazolol, Ronactolol, Soquinolol, Sotalol, Spirendolol, SR 59230A, Sulfinalol, Talinolol, Tazolol, Tertatolol, Tienoxolol, Tilisolol, Timolol, Tiprenolol, Tolamolol, Toliprolol, Xibenolol, Xipranolol, or any combination thereof.
28. The pharmaceutical composition of embodiment 2, wherein the cancer drug comprises an alkylating agent, an anti-metabolite, a plant alkaloid and terpenoid, a topoisomerase inhibitor, a cytotoxic antibiotic, or any combination thereof.
29. The pharmaceutical composition of embodiment 28, wherein the alkylating agent comprises carboplatin, chlorambucil, cisplatin, cyclophosphamide, ifosfamide, oxaliplatin, mechlorethamine, or any combination thereof.
30. The pharmaceutical composition of embodiment 28, wherein the anti-metabolite comprises Azathioprine, Mercaptopurine, or any combination thereof.
31. The pharmaceutical composition of embodiment 28, wherein the plant alkaloid and terpenoid comprises a vinca alkaloid like vincristine, vinblastine, vinorelbine, and vindesine, a podophyllotoxin like etoposide and teniposide, and a taxane like docetaxel and ortataxel, or any combination thereof.
32. The pharmaceutical composition of embodiment 28, wherein the topoisomerase inhibitor comprises a type I topoisomerase inhibitor like a camptothecins, such as, e.g., exatecan, irinotecan, lurtotecan, topotecan, BNP 1350, CKD 602, DB 67 (AR67), and ST 1481, and a type II topoisomerase inhibitor

like an epipodophyllotoxin such as, e.g., amsacrine, etoposid, etoposide phosphate, and teniposide, or any combination thereof.

33. The pharmaceutical composition of embodiment 28, wherein the cytotoxic antibiotic comprises an actinomycin like actinomycin D, bacitracin, colistin (polymyxin E), and polymyxin B, an anthracenedione like mitoxantrone and pixantrone, and an anthracycline like bleomycin, doxorubicin (adriamycin), daunorubicin (daunomycin), epirubicin, idarubicin, mitomycin, plicamycin, valrubicin, aminocoumarin antibiotics such as novobiocin, or any combination thereof.
34. The pharmaceutical composition of embodiment 2, wherein the 5-lipoxygenase inhibitor comprises Zileuton.
35. The pharmaceutical composition of embodiment 2, wherein the CCR1 antagonist comprises BX-471 (CAS No. 217645-70-0).
36. The pharmaceutical composition of embodiment 2, wherein the ADP receptor antagonist comprises Ticagrelor.
37. The pharmaceutical composition of embodiment 2, wherein the inflammasome modulator comprises Amlexanox (an anti-inflammatory antiallergic immunomodulator and histamine blocker), Colchicine, Edavarone (Edaravone), Lenalidomide, Tranislast (a NLR family pyrin domain containing 3 (NLRP3) inflammasome activation inhibitor), or any combination thereof.
38. The pharmaceutical composition of embodiment 2, wherein the microglial comprises Allopregnanolone (a neurosteroid), amlexanox (an anti-inflammatory antiallergic immunomodulator), artemether (antimalarial drug), memantine, and ketamine (a N-methyl-D-aspartate (NMDA) receptor antagonist), or any combination thereof.
39. The pharmaceutical composition of embodiment 2, wherein the NSAID comprises non-selective cyclooxygenase (COX) inhibitor, a selective cyclooxygenase 1 (COX 1) inhibitor, a selective cyclooxygenase 2 (COX 2) inhibitor, or any combination thereof.
40. The pharmaceutical composition of embodiment 2, wherein the NSAID comprises an acetic acid derivative NSAID, an enolic acid derivative NSAID, a fenamic acid derivative NSAID, a p-amino phenol derivative NSAID, a propionic acid derivative NSAID, a pyrazolone/pyrazolidine derivative NSAID, a salicylate derivative NSAID, or any combination thereof.
41. The pharmaceutical composition of embodiment 40, wherein the acetic acid derivative NSAID comprises Aceclofenac, Acemetacin, Alclofenac, Amfenac, Bendazac, Bromfenac, Bufexamac, Bumadizone, Diclofenac, Difenpiramide, Etodolac, Felbinac, Fenclozic acid, Fentiazac, Indometacin, Indometacin farnesil, Isoxepac, Ketorolac, Lonazolac, Mofezolac, Oxametacin, Prodolic acid, Proglumetacin, Sulindac, Tiopinac, Tolmetin, Zomepirac, or any combination thereof.
42. The pharmaceutical composition of embodiment 40, wherein the enolic acid (Oxicam) derivative NSAID comprises Ampiroxicam, Droxicam, Isoxicam, Lornoxicam, Meloxicam, Piroxicam, Pivoxicam, and Tenoxicam, or any combination thereof.
43. The pharmaceutical composition of embodiment 40, wherein the fenamic acid (n-arylanthranilic acids) derivative NSAID comprises Azapropazone, Clonixin, Etofenamate, Floctafenine, Flufenamic acid, Flunixin, Flutiazin, Glafenine, Meclofenamic acid, Mefenamic acid, Morniflumate, Niflumic acid, Tolfenamic acid, or any combination thereof.

44. The pharmaceutical composition of embodiment 40, wherein the p-amino phenol derivative NSAID comprises Paracetamol and Phenacetin, or any combination thereof.
45. The pharmaceutical composition of embodiment 40, wherein the propionic acid derivative NSAID comprises Alminoprofen, Benoxaprofen, Carprofen, Dexibuprofen, Dexketoprofen, Fenbufen, Fenoprofen, Flunoxaprofen, Flurbiprofen, Ibuprofen, Ibuprofen, Indoprofen, Ketoprofen, Loxoprofen, Miroprofen, Naproxen, Naproxenod, Oxaprozin, Piketoprofen, Pirprofen, Suprofen, Tarenfluril, Tepoxalin, Tiaprofenic acid, Vedaprofen, Zaltoprofen, or any combination thereof.
46. The pharmaceutical composition of embodiment 40, wherein the pyrazolone/pyrazolidine derivative NSAID comprises Aminophenazone, Ampyrone, Azapropazone, Clofezone, Difenamizole, Famprofazone, Feprazone, Kebuzone, Metamizole, Mofebutazone, Morazone, Nifenazone, Oxyphenbutazone, Phenazone, Phenylbutazone, Propyphenazone, Sulfinpyrazone, Suxibuzone, or any combination thereof.
47. The pharmaceutical composition of embodiment 40, wherein the salicylate derivative NSAID comprises Aspirin (acetylsalicylic acid), Aloxiprin, Benorylate, Carbasalate calcium, Diflunisal, Dipyracetyl, Ethenzamide, Guacetisal, Magnesium salicylate, Methyl salicylate, Salsalate, Salicin, Salicylamide, Salicylic acid (salicylate), or any combination thereof.
48. The pharmaceutical composition of embodiment 2, wherein the NK₁ receptor antagonist comprises an aprepitant, a maropitant, a netupitant, a rolapitant, or any combination thereof.
49. The pharmaceutical composition of embodiment 2, wherein the Cannabinoid comprises a Phytocannabinoid, an Endocannabinoid, a synthetic cannabinoid, or any combination thereof.
50. The pharmaceutical composition of embodiment 49, wherein the Phytocannabinoid comprises a Cannabitol (including CBB), a Cannabichromene (including CBC, CBCB, CBCP, CBCV, and CBCQ), a Cannabicyclol (including CBL, CBLB, CBLP, CBLVA), a Cannabidiol (including CBD, CBD-C1, CBD-C5, CBDB, CBDD, CBDH, CBDP, CBDM, CBDV, CBDQ, and 8,9-Dihydrocannabinol), a Cannabielsoin (including CBE, CBEB, CBEP, and CBEV), a Cannabigerol (including CBG, CBGP, CBNR, CBGV, and CBGQ), a Cannabiphorol (including CBP), a Cannabinol (including CBN, CBND, CBNP, CBVD, 7,8-Dihydrocannabinol, and Hexahydrocannabinol), a Cannabitol (including CBT, CBTB, CBTV, and CBTP), and a Cannabivarin (including CBV), a Tetrahydrocannabivarin, and a Tetrahydrocannabinol (including Delta-4(8)-iso-tetrahydrocannabinol (Δ 4(8)-iso-THC), Delta-8-tetrahydrocannabinol (Δ 8-THC), Delta-8-iso-tetrahydrocannabinol (Δ 8-iso-THC), Delta-9-tetrahydrocannabinol (Δ 9-THC, THC), and Delta-10-tetrahydrocannabinol (Δ 10-THC), Cannabichromanon (CBCF), Cannabicitran, Cannabifuran (CBF), Cannabiglendol, Cannabimovone (CBM), Cannabiripsol (CBR), Cannabiripsophorolic acid (CBRPA), Caryophyllene, Dehydrocannabifuran (DCBF), Alkylamides, Epigallocatechin gallate, Gallic acid, Perrottetene, Serinolamide A, and Yangonin), or any combination thereof.
51. The pharmaceutical composition of embodiment 49, wherein the Endocannabinoid comprises Arachidonylethanolamine (Anandamide or AEA), 2-arachidonoyl glycerol (2-AG), 2-arachidonoyl glyceryl ether (noladin ether), N-arachidonoyl-dopamine (NADA), Virodhamine (OAE), Lysophosphatidylinositol (LPI), or any combination thereof.
52. The pharmaceutical composition of embodiment 49, wherein the synthetic comprises Dronabinol (Marinol), Nabilone (Cesamet), Sativex, Rimonabant (SR141716), JWH-018, JWH-073, CP-55940,

Dimethylheptylpyran, HU-210, HU-331, SR144528, WIN 55,212-2, JWH-133, Levonantradol (Nantrodolum), AM-2201, or any combination thereof.

53. The pharmaceutical composition of embodiment 2, wherein the protein kinase inhibitor comprises a tyrosine kinase inhibitor, serine-threonine kinase inhibitor, or any combination thereof.
54. The pharmaceutical composition of embodiment 53, wherein the tyrosine kinase inhibitor comprises a receptor tyrosine kinase (RTK) inhibitor, a non-receptor or cytoplasmic tyrosine kinase (nRTK) inhibitor, or any combination thereof.
55. The pharmaceutical composition of embodiment 54, wherein the RTK inhibitor comprises a RTK class I inhibitor (EGF receptor family) (including erlotinib) (ErbB family), a RTK class II inhibitor (Insulin receptor family), a RTK class III inhibitor (PDGF receptor family)(including Imatinib, Midostaurin, Nintedanib, and Sunitinib), a RTK class IV inhibitor (VEGF receptors family) (including Lenvatinib, Nintedanib, and Sunitinib), a RTK class V inhibitor (FGF receptor family)(including Nintedanib and Midostaurin), a RTK class VI inhibitor (CCK receptor family), a RTK class VII inhibitor (NGF receptor family), a RTK class VIII inhibitor (HGF receptor family), a RTK class IX inhibitor (Eph receptor family), a RTK class X inhibitor (AXL receptor family), a RTK class XI inhibitor (TIE receptor family), a RTK class XII inhibitor (RYK receptor family), a RTK class XIII inhibitor (DDR receptor family), a RTK class XIV inhibitor (RET receptor family), a RTK class XV inhibitor (ROS receptor family), a RTK class XVI inhibitor (LTK receptor family), a RTK class XVII inhibitor (ROR receptor family), a RTK class XVIII inhibitor (MuSK receptor family), a RTK class XIX inhibitor (LMR receptor), and a RTK class XX inhibitor (Undetermined), or any combination thereof.
56. The pharmaceutical composition of embodiment 54, wherein the nRTK inhibitor comprises an ABL nRTK inhibitor (including Imatinib), an ACK nRTK inhibitor, a BTK nRTK inhibitor (including Ibrutinib), a CSK nRTK inhibitor, a FAK nRTK inhibitor, a FES nRTK inhibitor, a FRK nRTK inhibitor, a JAK nRTK inhibitor, a SRC nRTK inhibitor (including Nintedanib and CCT3833/ BAL3833; MedKoo No. 206553), a SYK nRTK inhibitor, a TEC nRTK inhibitor, or any combination thereof.
57. The pharmaceutical composition of embodiment 53, wherein the serine-threonine kinase inhibitor comprises a receptor protein serine/threonine kinase (RSTK) inhibitor, a non-receptor or cytoplasmic serine/threonine kinase (nRSTK) inhibitor, or any combination thereof.
58. The pharmaceutical composition of embodiment 53 or 57, wherein the serine/threonine kinase inhibitor comprises a Polo kinase (PLK) inhibitor, a Cyclin-dependent kinase (CDK) inhibitor, a (RNA-polymerase)-subunit kinase (RPS6K) inhibitor, a Mitogen-activated protein kinase (MAPK) inhibitor (including CCT3833/ BAL3833; MedKoo No. 206553, MAPK1 inhibitor, MAPK3 inhibitor, MAPK4 inhibitor, MAPK6 inhibitor, MAPK7 inhibitor, MAPK8 inhibitor, MAPK9 inhibitor, MAPK10 inhibitor, MAPK11 inhibitor, MAPK12 inhibitor, MAPK13 inhibitor, MAPK14 inhibitor, and MAPK15 inhibitor), a MAPK kinase (MAPKK) inhibitor, a MAPK kinase kinase (MAPKKK or MAP3K) inhibitor, a Tau-protein kinase (TPK) inhibitor, a non-specific serine/threonine protein kinase inhibitor, a Pyruvate dehydrogenase kinase (PDK) inhibitor, a Dephospho-(reductase kinase) kinase inhibitor, a 3-methyl-2-oxobutanoate dehydrogenase (acetyl-transferring) kinase inhibitor, a (isocitrate dehydrogenase (NADP+)) kinase inhibitor, a (tyrosine 3-monooxygenase) kinase inhibitor, a myosin-heavy-chain kinase inhibitor, a Fas-activated serine/threonine kinase inhibitor, a Goodpasture-antigen-binding protein kinase inhibitor, an I κ B kinase inhibitor, a cAMP-dependent protein kinase (or Protein kinase A,

PKA) inhibitor, a cGMP-dependent protein kinase (or Protein kinase G, PKG) inhibitor, a Protein kinase B (PKB) inhibitor, a Protein kinase C (PKC) inhibitor, , a phosphorylase kinase inhibitor, a Rho-associated protein kinase (ROCK) kinase inhibitor (including a ROCK 1 inhibitor and a ROCK 2 inhibitor), a Rhodopsin kinase inhibitor, a Beta adrenergic receptor kinase inhibitor, a G-protein coupled receptor kinase inhibitor, a Ca^{2+} /calmodulin-dependent (CaM) kinase (CAMK) inhibitor, a Myosin light-chain kinase inhibitor, a Phosphorylase kinase inhibitor, an Elongation factor 2 kinase inhibitor, or any combination thereof.

- 59 The pharmaceutical composition of embodiment 2, wherein the PARP inhibitor comprises iniparib, olaparib, niraparib, rucaparib, talazoparib, veliparib, or any combination thereof.
60. The pharmaceutical composition of any one of embodiments 1-59, wherein between 95% and 100% of the one or more therapeutic compounds are present in solid particle component.
61. The pharmaceutical composition of any one of embodiments 1-61, wherein the one or more therapeutic compounds further comprise a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids.
62. The pharmaceutical composition of embodiment 61, wherein a ratio of the solid particle component to the solubilized component of the one or more therapeutic compounds is about 5:95, about 10:90, about 15:85, about 20:80, about 25:75, about 30:70, about 35:65, about 40:60, about 45:55, about 50:50, about 55:45, about 60:40, about 65:35, about 70:30, about 75:25, about 80:20, about 85:15, about 90:10, or about 95:5; or at least 5:95, at least 10:90, at least 15:85, at least 20:80, at least 25:75, at least 30:70, at least 35:65, at least 40:60, at least 45:55, at least 50:50, at least 55:45, at least 60:40, at least 65:35, at least 70:30, at least 75:25, at least 80:20, at least 85:15, at least 90:10, or at least 95:5 and/or at most 5:95, at most 10:90, at most 15:85, at most 20:80, at most 25:75, at most 30:70, at most 35:65, at most 40:60, at most 45:55, at most 50:50, at most 55:45, at most 60:40, at most 65:35, at most 70:30, at most 75:25, at most 80:20, at most 85:15, at most 90:10, or at most 95:5; or about 5:95 to about 10:90, about 5:95 to about 15:85, about 5:95 to about 20:80, about 5:95 to about 25:75, about 5:95 to about 30:60, about 5:95 to about 35:65, about 5:95 to about 40:60, about 5:95 to about 45:55, about 5:95 to about 50:50, about 5:95 to about 55:45, about 5:95 to about 60:40, about 5:95 to about 65:35, about 5:95 to about 70:30, about 5:95 to about 75:25, about 5:95 to about 80:20, about 5:95 to about 85:15, about 5:95 to about 90:10, about 5:95 to about 95:5, about 10:90 to about 15:85, about 10:90 to about 20:80, about 10:90 to about 25:75, about 10:90 to about 30:60, about 10:90 to about 35:65, about 10:90 to about 40:60, about 10:90 to about 45:55, about 10:90 to about 50:50, about 10:90 to about 55:45, about 10:90 to about 60:40, about 10:90 to about 65:35, about 10:90 to about 70:30, about 10:90 to about 75:25, about 10:90 to about 80:20, about 10:90 to about 85:15, about 10:90 to about 90:10, about 10:90 to about 95:5, about 15:85 to about 20:80, about 15:85 to about 25:75, about 15:85 to about 30:60, about 15:85 to about 35:65, about 15:85 to about 40:60, about 15:85 to about 45:55, about 15:85 to about 50:50, about 15:85 to about 55:45, about 15:85 to about 60:40, about 15:85 to about 65:35, about 15:85 to about 70:30, about 15:85 to about 75:25, about 15:85 to about 80:20, about 15:85 to about 85:15, about 15:85 to about 90:10, about 15:85 to about 95:5, about 20:80 to about 25:75, about 20:80 to about 30:60, about 20:80 to about 35:65, about 20:80 to about 40:60, about 20:80 to about 45:55, about 20:80 to about 50:50, about 20:80 to about 55:45, about 20:80 to about 60:40, about 20:80 to about 65:35, about 20:80 to about 70:30, about 20:80 to about 75:25, about

20:80 to about 80:20, about 20:80 to about 85:15, about 20:80 to about 90:10, about 20:80 to about 95:5, about 25:75 to about 30:60, about 25:75 to about 35:65, about 25:75 to about 40:60, about 25:75 to about 45:55, about 25:75 to about 50:50, about 25:75 to about 55:45, about 25:75 to about 60:40, about 25:75 to about 65:35, about 25:75 to about 70:30, about 25:75 to about 75:25, about 25:75 to about 80:20, about 25:75 to about 85:15, about 25:75 to about 90:10, about 25:75 to about 95:5, about 30:70 to about 35:65, about 30:70 to about 40:60, about 30:70 to about 45:55, about 30:70 to about 50:50, about 30:70 to about 55:45, about 30:70 to about 60:40, about 30:70 to about 65:35, about 30:70 to about 70:30, about 30:70 to about 75:25, about 30:70 to about 80:20, about 30:70 to about 85:15, about 30:70 to about 90:10, about 30:70 to about 95:5, about 35:65 to about 40:60, about 35:65 to about 45:55, about 35:65 to about 50:50, about 35:65 to about 55:45, about 35:65 to about 60:40, about 35:65 to about 65:35, about 35:65 to about 70:30, about 35:65 to about 75:25, about 35:65 to about 80:20, about 35:65 to about 85:15, about 35:65 to about 90:10, about 35:65 to about 95:5, about 40:60 to about 45:55, about 40:60 to about 50:50, about 40:60 to about 55:45, about 40:60 to about 60:40, about 40:60 to about 65:35, about 40:60 to about 70:30, about 40:60 to about 75:25, about 40:60 to about 80:20, about 40:60 to about 85:15, about 40:60 to about 90:10, about 40:60 to about 95:5, about 45:55 to about 50:50, about 45:55 to about 55:45, about 45:55 to about 60:40, about 45:55 to about 65:35, about 45:55 to about 70:30, about 45:55 to about 75:25, about 45:55 to about 80:20, about 45:55 to about 85:15, about 45:55 to about 90:10, about 45:55 to about 95:5, about 50:50 to about 55:45, about 50:50 to about 60:40, about 50:50 to about 65:35, about 50:50 to about 70:30, about 50:50 to about 75:25, about 50:50 to about 80:20, about 50:50 to about 85:15, about 50:50 to about 90:10, about 50:50 to about 95:5, about 55:45 to about 60:40, about 55:45 to about 65:35, about 55:45 to about 70:30, about 55:45 to about 75:25, about 55:45 to about 80:20, about 55:45 to about 85:15, about 55:45 to about 90:10, about 55:45 to about 95:5, about 60:40 to about 65:35, about 60:40 to about 70:30, about 60:40 to about 75:25, about 60:40 to about 80:20, about 60:40 to about 85:15, about 60:40 to about 90:10, about 60:40 to about 95:5, about 65:35 to about 70:30, about 65:35 to about 75:25, about 65:35 to about 80:20, about 65:35 to about 85:15, about 65:35 to about 90:10, about 65:35 to about 95:5, about 70:30 to about 75:25, about 70:30 to about 80:20, about 70:30 to about 85:15, about 70:30 to about 90:10, about 70:30 to about 95:5, about 75:25 to about 80:20, about 75:25 to about 85:15, about 75:25 to about 90:10, about 75:25 to about 95:5, about 80:20 to about 85:15, about 80:20 to about 90:10, about 80:20 to about 95:5, about 85:15 to about 90:10, about 85:15 to about 95:5, or about 90:10 to about 95:5, preferably the ratio of a solid particle component to a solubilized component of one or more therapeutic compounds is about 60:40 to about 40:60, and more preferably 55:45 to about 45:55.

63. The pharmaceutical composition of any one of embodiments 1-62, wherein the one or more therapeutic compounds are in an amount of about 0.05% to about 1%, about 0.05% to about 2.5%, about 0.05% to about 5%, about 0.05% to about 7.5%, about 0.05% to about 10%, about 0.05% to about 12.5%, about 0.05% to about 15%, about 0.05% to about 17.5%, about 0.05% to about 20%, about 0.05% to about 22.5%, about 0.05% to about 25%, about 0.05% to about 30%, about 0.05% to about 40%, about 0.05% to about 50%, about 0.1% to about 1%, about 0.1% to about 2.5%, about 0.1% to about 5%, about 0.1% to about 7.5%, about 0.1% to about 10%, about 0.1% to about 12.5%, about 0.1% to about 15%, about 0.1% to about 17.5%, about 0.1% to about 20%, about 0.1% to about 22.5%, about 0.1%

to about 25%, about 0.1% to about 30%, about 0.1% to about 40%, about 0.1% to about 50%, about 1% to about 2.5%, about 1% to about 5%, about 1% to about 7.5%, about 1% to about 10%, about 1% to about 12.5%, about 1% to about 15%, about 1% to about 17.5%, about 1% to about 20%, about 1% to about 22.5%, about 1% to about 25%, about 1% to about 30%, about 1% to about 40%, about 1% to about 50%, about 5% to about 10%, about 5% to about 20%, about 5% to about 30%, about 5% to about 40%, about 5% to about 50%, about 10% to about 20%, about 10% to about 30%, about 10% to about 40%, about 10% to about 50%, about 20% to about 30%, about 20% to about 40%, about 20% to about 50%, about 30% to about 40%, about 30% to about 50%, or about 40% to about 50% by weight.

64. The pharmaceutical composition of any one of embodiments 1-63, wherein the one or more therapeutic compounds are in an amount of about 10 mg/mL to about 25 mg/mL, about 10 mg/mL to about 50 mg/mL, about 10 mg/mL to about 75 mg/mL, about 10 mg/mL to about 100 mg/mL, about 10 mg/mL to about 125 mg/mL, about 10 mg/mL to about 150 mg/mL, about 10 mg/mL to about 200 mg/mL, about 10 mg/mL to about 250 mg/mL, about 10 mg/mL to about 300 mg/mL, about 25 mg/mL to about 50 mg/mL, about 25 mg/mL to about 75 mg/mL, about 25 mg/mL to about 100 mg/mL, about 25 mg/mL to about 125 mg/mL, about 25 mg/mL to about 150 mg/mL, about 25 mg/mL to about 200 mg/mL, about 25 mg/mL to about 250 mg/mL, about 25 mg/mL to about 300 mg/mL, about 50 mg/mL to about 100 mg/mL, about 50 mg/mL to about 150 mg/mL, about 50 mg/mL to about 200 mg/mL, about 50 mg/mL to about 250 mg/mL, about 50 mg/mL to about 300 mg/mL, about 75 mg/mL to about 100 mg/mL, about 75 mg/mL to about 150 mg/mL, about 75 mg/mL to about 200 mg/mL, about 75 mg/mL to about 250 mg/mL, about 75 mg/mL to about 300 mg/mL, about 100 mg/mL to about 150 mg/mL, about 100 mg/mL to about 200 mg/mL, about 100 mg/mL to about 250 mg/mL, about 100 mg/mL to about 300 mg/mL, about 125 mg/mL to about 150 mg/mL, about 125 mg/mL to about 200 mg/mL, about 125 mg/mL to about 250 mg/mL, about 125 mg/mL to about 300 mg/mL, about 150 mg/mL to about 200 mg/mL, about 150 mg/mL to about 250 mg/mL, about 150 mg/mL to about 300 mg/mL, about 200 mg/mL to about 250 mg/mL, about 200 mg/mL to about 300 mg/mL, or about 250 mg/mL to about 300 mg/mL.
65. The pharmaceutical composition of any one of embodiments 1-64, wherein the one or more glycerolipids are in an amount of at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, at least 75% by weight, at least 80% by weight, at least 85% by weight, at least 90% by weight, or at least 95% by weight and/or at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, at most 75% by weight, at most 80% by weight, at most 85% by weight, at most 90% by weight, or at most 95% by weight or between about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 40% to about 65%, about 40% to about 70%, about 40% to about 75%, about 40% to about 80%, about 40% to about 85%, about 40% to about 90%, about 40% to about 95%, about 45% to about 55%, about 45% to about 60%, about 45% to about 65%, about 45% to about 70%, about 45% to about 75%, about 45% to about 80%, about 45% to about 85%, about 45% to about 90%, about 45% to about 95%, about 50% to about 55%, about 50% to about 60%, about 50% to about 65%, about 50% to about 70%, about 50% to about 75%, about 50% to about 80%, about 50% to about 85%, about 50% to about 90%, about 50% to about 95%, about 55% to about 60%, about 55% to about 65%, about 55% to about 70%, about

55% to about 75%, about 55% to about 80%, about 55% to about 85%, about 55% to about 90%, about 55% to about 95%, about 60% to about 65%, about 60% to about 70%, about 60% to about 75%, about 60% to about 80%, about 60% to about 85%, about 60% to about 90%, about 60% to about 95%, about 65% to about 70%, about 65% to about 75%, about 65% to about 80%, about 65% to about 85%, about 65% to about 90%, about 65% to about 95%, about 70% to about 75%, about 70% to about 80%, about 70% to about 85%, about 70% to about 90%, about 70% to about 95%, about 75% to about 80%, about 75% to about 85%, about 75% to about 90%, about 75% to about 95%, about 80% to about 85%, about 80% to about 90%, about 80% to about 95%, about 85% to about 90%, about 85% to about 95%, or about 90% to about 95% by weight.

66. The pharmaceutical composition of any one of embodiments 1-65, wherein the one or more glycerolipids comprises one or more hard fats and one or more liquid fats.
67. The pharmaceutical composition of embodiment 66, wherein the one or more hard fats include one or more triglycerides.
68. The pharmaceutical composition of embodiment 67, wherein the one or more triglycerides include a mixture of saturated C₁₀-C₁₈ triglycerides, a mixture of saturated C₁₀-C₂₀ triglycerides, a mixture of saturated C₁₀-C₂₂ triglycerides, a mixture of saturated C₁₀-C₂₄ triglycerides, a mixture of saturated C₁₂-C₁₈ triglycerides, a mixture of saturated C₁₂-C₂₀ triglycerides, a mixture of saturated C₁₂-C₂₂ triglycerides, a mixture of saturated C₁₂-C₂₄ triglycerides, a mixture of saturated C₁₄-C₁₈ triglycerides, a mixture of saturated C₁₄-C₂₀ triglycerides, a mixture of saturated C₁₄-C₂₂ triglycerides, a mixture of saturated C₁₄-C₂₄ triglycerides, a mixture of saturated C₁₆-C₁₈ triglycerides, a mixture of saturated C₁₆-C₂₀ triglycerides, a mixture of saturated C₁₆-C₂₂ triglycerides, a mixture of saturated C₁₆-C₂₄ triglycerides, a mixture of saturated C₁₈-C₂₀ triglycerides, a mixture of saturated C₁₈-C₂₂ triglycerides, a mixture of saturated C₁₈-C₂₄ triglycerides, a mixture of saturated C₂₀-C₂₂ triglycerides, or a mixture of saturated C₂₂-C₂₄ triglycerides.
69. The pharmaceutical composition of embodiment 67, wherein the one or more triglycerides include a mixture of unsaturated C₁₀-C₁₈ triglycerides, a mixture of unsaturated C₁₀-C₂₀ triglycerides, a mixture of unsaturated C₁₀-C₂₂ triglycerides, a mixture of unsaturated C₁₀-C₂₄ triglycerides, a mixture of unsaturated C₁₂-C₁₈ triglycerides, a mixture of unsaturated C₁₂-C₂₀ triglycerides, a mixture of unsaturated C₁₂-C₂₂ triglycerides, a mixture of unsaturated C₁₂-C₂₄ triglycerides, a mixture of unsaturated C₁₄-C₁₈ triglycerides, a mixture of unsaturated C₁₄-C₂₀ triglycerides, a mixture of unsaturated C₁₄-C₂₂ triglycerides, a mixture of unsaturated C₁₄-C₂₄ triglycerides, a mixture of unsaturated C₁₆-C₁₈ triglycerides, a mixture of unsaturated C₁₆-C₂₀ triglycerides, a mixture of unsaturated C₁₆-C₂₂ triglycerides, a mixture of unsaturated C₁₆-C₂₄ triglycerides, a mixture of unsaturated C₁₈-C₂₀ triglycerides, a mixture of unsaturated C₁₈-C₂₂ triglycerides, a mixture of unsaturated C₁₈-C₂₄ triglycerides, a mixture of unsaturated C₂₀-C₂₂ triglycerides, or a mixture of unsaturated C₂₂-C₂₄ triglycerides.
70. The pharmaceutical composition of embodiment 67, wherein the one or more triglycerides include a mixture of saturated and unsaturated C₁₀-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ triglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ triglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ triglycerides.

C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ triglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ triglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ triglycerides.

71. The pharmaceutical composition of any one of embodiments 67-70, wherein the one or more hard fats are in an amount of at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, and/or at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, or between about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 50% to about 55%, about 50% to about 60%, about 55% to about 60% by weight.
72. The pharmaceutical composition of any one of embodiments 66-71, wherein the one or more liquid fats include one or more partially hydrolyzed glycerolipids, one or more monoglycerides, or a combination thereof.
73. The pharmaceutical composition of embodiment 72, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of mono-, di- and triglycerides.
74. The pharmaceutical composition of embodiment 72, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of unsaturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of unsaturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of unsaturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of unsaturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of unsaturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈

triglycerides, a mixture of unsaturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a mixture of unsaturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of unsaturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of unsaturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of unsaturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of unsaturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of unsaturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides, a mixture of unsaturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of unsaturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of unsaturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of unsaturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of unsaturated C₁₈-C₂₀ monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of unsaturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of unsaturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of unsaturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of unsaturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.

75. The pharmaceutical composition of embodiment 72, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of saturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of saturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of saturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of saturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of saturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈ triglycerides, a mixture of saturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a mixture of saturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of saturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of saturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of saturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of saturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of saturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides, a mixture of saturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of saturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of saturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of saturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of saturated C₁₈-C₂₀ monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of saturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of saturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of saturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of saturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.

76. The pharmaceutical composition of embodiment 72, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of saturated and unsaturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.
77. The pharmaceutical composition of any one of embodiments 72-76, wherein the one or more partially hydrolyzed glycerolipids are in an amount of at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, and/or at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, or between about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 60%.

50%, about 30% to about 55%, about 30% to about 60%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 50% to about 55%, about 50% to about 60%, about 55% to about 60% by weight.

78. The pharmaceutical composition of any one of embodiments 72-77, wherein the one or more monoglycerides comprise unsaturated C₁₀-C₁₈ monoglycerides, unsaturated C₁₀-C₂₀ monoglycerides, unsaturated C₁₀-C₂₂ monoglycerides, unsaturated C₁₀-C₂₄ monoglycerides, unsaturated C₁₂-C₁₈ monoglycerides, unsaturated C₁₂-C₂₀ monoglycerides, unsaturated C₁₂-C₂₂ monoglycerides, unsaturated C₁₂-C₂₄ monoglycerides, unsaturated C₁₄-C₁₈ monoglycerides, unsaturated C₁₄-C₂₀ monoglycerides, unsaturated C₁₄-C₂₂ monoglycerides, unsaturated C₁₄-C₂₄ monoglycerides, unsaturated C₁₆-C₁₈ monoglycerides, unsaturated C₁₆-C₂₀ monoglycerides, unsaturated C₁₆-C₂₂ monoglycerides, unsaturated C₁₆-C₂₄ monoglycerides, unsaturated C₁₈-C₂₀ monoglycerides, unsaturated C₁₈-C₂₂ monoglycerides, unsaturated C₁₈-C₂₄ monoglycerides, unsaturated C₂₀-C₂₂ monoglycerides, or unsaturated C₂₂-C₂₄ monoglycerides.
79. The pharmaceutical composition of any one of embodiments 72-77, wherein the one or more monoglycerides comprise saturated C₁₀-C₁₈ monoglycerides, saturated C₁₀-C₂₀ monoglycerides, saturated C₁₀-C₂₂ monoglycerides, saturated C₁₀-C₂₄ monoglycerides, saturated C₁₂-C₁₈ monoglycerides, saturated C₁₂-C₂₀ monoglycerides, saturated C₁₂-C₂₂ monoglycerides, saturated C₁₂-C₂₄ monoglycerides, saturated C₁₄-C₁₈ monoglycerides, saturated C₁₄-C₂₀ monoglycerides, saturated C₁₄-C₂₂ monoglycerides, saturated C₁₄-C₂₄ monoglycerides, saturated C₁₆-C₁₈ monoglycerides, saturated C₁₆-C₂₀ monoglycerides, saturated C₁₆-C₂₂ monoglycerides, saturated C₁₆-C₂₄ monoglycerides, saturated C₁₈-C₂₀ monoglycerides, saturated C₁₈-C₂₂ monoglycerides, saturated C₁₈-C₂₄ monoglycerides, saturated C₂₀-C₂₂ monoglycerides, or saturated C₂₂-C₂₄ monoglycerides.
80. The pharmaceutical composition of any one of embodiments 72-77, wherein the one or more monoglycerides comprise a mixture of saturated and unsaturated C₁₀-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ monoglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ monoglycerides.

81. The pharmaceutical composition of any one of embodiments 78-80, wherein the one or more monoglycerides are in an amount of at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, and/or at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, or between about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 50% to about 55%, about 50% to about 60%, about 55% to about 60% by weight.
82. The pharmaceutical composition of any one of embodiments 66-81, wherein the one or more hard fats and the one or more liquid fats are in a hard fat to liquid fat ratio of about 5:1 to about 4:1, about 5:1 to about 3:1, about 5:1 to about 2:1, about 5:1 to about 1:1, about 4:1 to about 3:1, about 4:1 to about 2:1, about 4:1 to about 1:1, about 3:1 to about 2:1, about 3:1 to about 1:1, or about 2:1 to about 1:1.
83. The pharmaceutical composition of any one of embodiments 66-81, wherein the one or more hard fats and the one or more liquid fats are in a hard fat to liquid fat ratio of about 1:5 to about 1:4, about 1:5 to about 1:3, about 1:5 to about 1:2, about 1:5 to about 1:1, about 1:4 to about 1:3, about 1:4 to about 1:2, about 1:4 to about 1:1, about 1:3 to about 1:2, about 1:3 to about 1:1, or about 1:2 to about 1:1.
84. The pharmaceutical composition of any one of embodiments 1-83, wherein the one or more digestion enhancers are in an amount of at least 1% by weight, at least 2.5% by weight, at least 5% by weight, at least 7.5% by weight, at least 10 % by weight, at least 12.5% by weight, at least 15 % by weight, at least 17.5% by weight, at least 20% by weight, at least 22.5% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, at least 75% by weight, at least 75% by weight and/or at most 1% by weight, at most 2.5% by weight, at most 5% by weight, at most 7.5% by weight, at most 10 % by weight, at most 12.5% by weight, at most 15 % by weight, at most 17.5% by weight, at most 20% by weight, at most 22.5% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, at most 75% by weight, or at most 80% by weight, or between

about 1% to about 2.5% by weight, about 1% to about 5% by weight, about 1% to about 10% by weight, about 1% to about 15% by weight, about 1% to about 20% by weight, about 1% to about 25% by weight, about 2.5% to about 5% by weight, about 2.5% to about 10% by weight, about 2.5% to about 15% by weight, about 2.5% to about 20% by weight, about 2.5% to about 25% by weight, about 5% to about 10% by weight, about 5% to about 15% by weight, about 5% to about 20% by weight, about 5% to about 25% by weight, about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 10% to about 65%, about 10% to about 70%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 15% to about 65%, about 15% to about 70%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 20% to about 65%, about 20% to about 70%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 25% to about 65%, about 25% to about 70%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 30% to about 65%, about 30% to about 70%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 35% to about 65%, about 35% to about 70%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 40% to about 65%, about 40% to about 70%, about 40% to about 75%, about 40% to about 80%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 45% to about 65%, about 45% to about 70%, about 45% to about 75%, about 45% to about 80%, about 50% to about 55%, about 50% to about 60%, about 50% to about 65%, about 50% to about 70%, about 50% to about 75%, about 50% to about 80%, about 55% to about 60%, about 55% to about 65%, about 55% to about 70%, about 55% to about 75%, about 55% to about 80%, about 60% to about 65%, about 60% to about 70%, about 60% to about 75%, about 60% to about 80%, about 65% to about 70% by weight, about 65% to about 75%, about 65% to about 80%, about 70% to about 75%, about 70% to about 80%, or about 75% to about 80% by weight.

85. The pharmaceutical composition of embodiment 84, wherein the one or more digestion enhancers include one or more bile acids, one or more phospholipids, one or more free C₁₄₋₂₄ fatty acids, one or more free C₁₄₋₂₄ fatty acid surfactants, or any combination thereof.
86. The pharmaceutical composition of embodiment 85, wherein the one or more bile acids includes cholic acid, chenodeoxycholic acid, dafachronic acid, deoxycholic acid, glycocholic acid, glycochenodeoxycholic acid, lithocholic acid, taurochenodeoxycholic acid, taurocholic acid, any stereoisomer thereof, and any combination thereof.
87. The pharmaceutical composition of embodiment 85 or 86, wherein the one or more bile acids are in an amount of at least 0.1% by weight, at least 0.5% by weight, at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by

weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, or at least 10.0% by weight and/or at most 0.1% by weight, at most 0.5% by weight, at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, or at most 10.0% by weight or between about 0.1% to about 0.5%, about 0.1% to about 1.0%, about 0.1% to about 2.0%, about 0.1% to about 3.0%, about 0.1% to about 4.0%, about 0.1% to about 5.0%, about 0.1% to about 6.0%, about 0.1% to about 7.0%, about 0.1% to about 8.0%, about 0.1% to about 9.0%, about 0.1% to about 10.0%, about 0.5% to about 1.0%, about 0.5% to about 2.0%, about 0.5% to about 3.0%, about 0.5% to about 4.0%, about 0.5% to about 5.0%, about 0.5% to about 6.0%, about 0.5% to about 7.0%, about 0.5% to about 8.0%, about 0.5% to about 9.0%, about 0.5% to about 10.0%, about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%, about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about 8.0%, about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

88. The pharmaceutical composition of any one of embodiments 85-87, wherein the one or more phospholipids include one or more phosphoglycerides, one or more phosphosphingolipids, one or more lecithins, or any combination thereof.
89. The pharmaceutical composition of embodiment 88, wherein the one or more phosphoglycerides include a phosphatidic acid (phosphatidate) (PA), a phosphatidylethanolamine (PE), a phosphatidylcholine (PC), a phosphatidylserine (PS), a cardiolipin, a phosphoinositide, or any combination thereof.
90. The pharmaceutical composition of embodiment 88, wherein the one or more phosphosphingolipids include phosphatidylethanolamine (PE), phosphatidylcholine (PC), ceramide phosphorylethanolamine (Cer-PE), ceramide phosphorylcholine (Cer-PC), or any combination thereof.
91. The pharmaceutical composition of embodiment 85 or 88-90, wherein the one or more phospholipids are in an amount of at least 0.1% by weight, at least 0.5% by weight, at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, or at least 10.0% by weight.

weight, or at least 10.0% by weight and/or at most 0.1% by weight, at most 0.5% by weight, at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, or at most 10.0% by weight or between about 0.1% to about 0.5%, about 0.1% to about 1.0%, about 0.1% to about 2.0%, about 0.1% to about 3.0%, about 0.1% to about 4.0%, about 0.1% to about 5.0%, about 0.1% to about 6.0%, about 0.1% to about 7.0%, about 0.1% to about 8.0%, about 0.1% to about 9.0%, about 0.1% to about 10.0%, about 0.5% to about 1.0%, about 0.5% to about 2.0%, about 0.5% to about 3.0%, about 0.5% to about 4.0%, about 0.5% to about 5.0%, about 0.5% to about 6.0%, about 0.5% to about 7.0%, about 0.5% to about 8.0%, about 0.5% to about 9.0%, about 0.5% to about 10.0%, about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%, about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about 8.0%, about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

92. The pharmaceutical composition of any one of embodiments 85-91, wherein the one or more free C₁₄₋₂₄ fatty acids include unsaturated free C₁₄-C₁₆ fatty acids, unsaturated free C₁₄-C₁₈ fatty acids, unsaturated free C₁₄-C₂₀ fatty acids, unsaturated free C₁₄-C₂₂ fatty acids, unsaturated free C₁₄-C₂₄ fatty acids, unsaturated free C₁₆-C₁₈ fatty acids, unsaturated free C₁₆-C₂₀ fatty acids, unsaturated free C₁₆-C₂₂ fatty acids, unsaturated free C₁₆-C₂₄ fatty acids, unsaturated free C₁₈-C₂₀ fatty acids, unsaturated free C₁₈-C₂₂ fatty acids, unsaturated free C₁₈-C₂₄ fatty acids, unsaturated free C₂₀-C₂₂ fatty acids, or unsaturated free C₂₂-C₂₄ fatty acids.
93. The pharmaceutical composition of any one of embodiments 85-91, wherein the one or more free C₁₄₋₂₄ fatty acids include ω -3 unsaturated free C₁₈-C₂₂ fatty acids, ω -5 unsaturated free C₁₈-C₂₂ fatty acids, ω -6 unsaturated free C₁₈-C₂₂ fatty acids, ω -7 unsaturated free C₁₈-C₂₂ fatty acids, ω -9 unsaturated free C₁₈-C₂₂ fatty acids, ω -10 unsaturated free C₁₈-C₂₂ fatty acids, ω -11 unsaturated free C₁₈-C₂₂ fatty acids, or ω -12 unsaturated free C₁₈-C₂₂ fatty acids.
94. The pharmaceutical composition of any one of embodiments 85-91, wherein the one or more free C₁₄₋₂₄ fatty acids include saturated free C₁₄-C₁₆ fatty acids, saturated free C₁₄-C₁₈ fatty acids, saturated free C₁₄-C₂₀ fatty acids, saturated free C₁₄-C₂₂ fatty acids, saturated free C₁₄-C₂₄ fatty acids, saturated free C₁₆-C₁₈ fatty acids, saturated free C₁₆-C₂₀ fatty acids, saturated free C₁₆-C₂₂ fatty acids, saturated free

C₁₆-C₂₄ fatty acids, saturated free C₁₈-C₂₀ fatty acids, saturated free C₁₈-C₂₂ fatty acids, saturated free C₁₈-C₂₄ fatty acids, saturated free C₂₀-C₂₂ fatty acids, or saturated free C₂₂-C₂₄ fatty acids.

95. The pharmaceutical composition of any one of embodiments 85-91, wherein the one or more free C₁₄-C₂₄ fatty acids include a mixture of saturated and unsaturated free C₁₄-C₁₆ fatty acids, a mixture of saturated and unsaturated free C₁₄-C₁₈ fatty acids, a mixture of saturated and unsaturated free C₁₄-C₂₀ fatty acids, a mixture of saturated and unsaturated free C₁₄-C₂₂ fatty acids, a mixture of saturated and unsaturated free C₁₄-C₂₄ fatty acids, a mixture of saturated and unsaturated free C₁₆-C₁₈ fatty acids, a mixture of saturated and unsaturated free C₁₆-C₂₀ fatty acids, a mixture of saturated and unsaturated free C₁₆-C₂₂ fatty acids, a mixture of saturated and unsaturated free C₁₆-C₂₄ fatty acids, a mixture of saturated and unsaturated free C₁₈-C₂₀ fatty acids, a mixture of saturated and unsaturated free C₁₈-C₂₂ fatty acids, a mixture of saturated and unsaturated free C₁₈-C₂₄ fatty acids, a mixture of saturated and unsaturated free C₂₀-C₂₂ fatty acids, or a mixture of saturated and unsaturated free C₂₂-C₂₄ fatty acids.
96. The pharmaceutical composition of any one of embodiments 85-91, wherein the one or more free C₁₄-C₂₄ fatty acids include palmitic acid (hexadecanoic acid), palmitolinolenic acid, palmitidonic acid, palmitovaccenic acid, palmitoleic acid, sapienic acid, 4-Hexadecenoic acid, stearic acid (octadecenoic acid), α -linolenic acid, stearidonic acid, α -eleostearic acid, β -eleostearic acid, punicic acid, 7,10,13-octadecatrienoic acid, 12-octadecenoic acid, linoleic acid, linolelaidic acid, γ -linolenic acid, calendic acid, pinolenic acid, vaccinic acid, rumenic acid, oleic acid, elaidic acid, petroselinic acid, arachidic acid (eicosanoic acid), dihomom- α -linolenic acid, eicosic acidtraenoic acid, eicosapentaenoic acid, 9,12,15-eicosatrienoic acid, β -eicosic acidtraenoic acid, dihomom-linoleic acid, dihomom- γ -linolenic acid, arachidonic acid, paullinic acid, 7,10,13-eicosatrienoic acid, gondoic acid, 8,11-eicosadienoic acid, meadac acid, gadoleic acid, 8-eicosenoic acid, behenic acid (docosanoic acid), clupanodonic acid, docosahexaenoic acid, adrenic acid, osbondic acid, erucic acid, lignoceric acid (tetracosanoic acid), 9,12,15,18,21-Tetracosapentaenoic acid, 6,9,12,15,18,21-Tetracosahexaenoic acid, and nervonic acid.
97. The pharmaceutical composition of any one of embodiments 85-96, wherein the one or more free C₁₄-C₂₄ fatty acids are in an amount of at least 1% by weight, at least 2.5% by weight, at least 5% by weight, at least 7.5% by weight, at least 10 % by weight, at least 12.5% by weight, at least 15 % by weight, at least 17.5% by weight, at least 20% by weight, at least 22.5% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 50% by weight, at least 60% by weight, at least 70% by weight, at least 75% by weight and/or at most 1% by weight, at most 2.5% by weight, at most 5% by weight, at most 7.5% by weight, at most 10 % by weight, at most 12.5% by weight, at most 15 % by weight, at most 17.5% by weight, at most 20% by weight, at most 22.5% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 50% by weight, at most 60% by weight, at most 70% by weight, at most 75% by weight or between about 1% to about 2.5% by weight, about 1% to about 5% by weight, about 1% to about 10% by weight, about 1% to about 15% by weight, about 1% to about 20% by weight, about 1% to about 25% by weight, about 2.5% to about 5% by weight, about 2.5% to about 10% by weight, about 2.5% to about 15% by weight, about 2.5% to about 20% by weight, about 2.5% to about 25% by weight, about 2.5% to about 30% by weight, about 5% to about 10% by weight, about 5% to about 15% by weight, about 5% to about 20% by weight, about 5% to about 25% by weight, about 5% to about 30%

by weight, about 10% to about 15% by weight, about 10% to about 20% by weight, about 10% to about 25% by weight, about 10% to about 30% by weight, about 10% to about 40% by weight, about 10% to about 45% by weight, about 10% to about 50% by weight, about 10% to about 60% by weight, about 10% to about 70% by weight, about 15% to about 20% by weight, about 15% to about 25% by weight, about 15% to about 30% by weight, about 15% to about 40% by weight, about 15% to about 45% by weight, about 15% to about 50% by weight, about 15% to about 60% by weight, about 15% to about 70% by weight, about 20% to about 25% by weight, about 20% to about 30% by weight, about 20% to about 40% by weight, about 20% to about 45% by weight, about 20% to about 50% by weight, about 20% to about 60% by weight, about 20% to about 70% by weight, about 30% to about 40% by weight, about 30% to about 50% by weight, about 30% to about 60% by weight, about 30% to about 70% by weight, about 30% to about 75% by weight, about 35% to about 40% by weight, about 35% to about 50% by weight, about 35% to about 60% by weight, about 35% to about 70% by weight, about 35% to about 75% by weight, about 40% to about 50% by weight, about 40% to about 60% by weight, about 40% to about 70% by weight, about 40% to about 75% by weight, about 50% to about 60% by weight, about 50% to about 70% by weight, or about 60% to about 70% by weight.

98. The pharmaceutical composition of any one of embodiments 85-97, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include unsaturated free C_{14-C₁₆} fatty acid surfactants, unsaturated free C_{14-C₁₈} fatty acid surfactants, unsaturated free C_{14-C₂₀} fatty acid surfactants, unsaturated free C_{14-C₂₂} fatty acid surfactants, unsaturated free C_{14-C₂₄} fatty acid surfactants, unsaturated free C_{16-C₁₈} fatty acid surfactants, unsaturated free C_{16-C₂₀} fatty acid surfactants, unsaturated free C_{16-C₂₂} fatty acid surfactants, unsaturated free C_{16-C₂₄} fatty acid surfactants, unsaturated free C_{18-C₂₀} fatty acid surfactants, unsaturated free C_{18-C₂₂} fatty acid surfactants, unsaturated free C_{18-C₂₄} fatty acid surfactants, unsaturated free C_{20-C₂₂} fatty acid surfactants, or unsaturated free C_{22-C₂₄} fatty acid surfactants.
99. The pharmaceutical composition of any one of embodiments 85-97, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include ω -3 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -5 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -6 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -7 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -9 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -10 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -11 unsaturated free C_{18-C₂₂} fatty acid surfactants, or ω -12 unsaturated free C_{18-C₂₂} fatty acid surfactants.
100. The pharmaceutical composition of any one of embodiments 85-97, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include saturated free C_{14-C₁₆} fatty acid surfactants, saturated free C_{14-C₁₈} fatty acid surfactants, saturated free C_{14-C₂₀} fatty acid surfactants, saturated free C_{14-C₂₂} fatty acid surfactants, saturated free C_{14-C₂₄} fatty acid surfactants, saturated free C_{16-C₁₈} fatty acid surfactants, saturated free C_{16-C₂₀} fatty acid surfactants, saturated free C_{16-C₂₂} fatty acid surfactants, saturated free C_{16-C₂₄} fatty acid surfactants, saturated free C_{18-C₂₀} fatty acid surfactants, saturated free C_{18-C₂₂} fatty acid surfactants, saturated free C_{18-C₂₄} fatty acid surfactants, saturated free C_{20-C₂₂} fatty acid surfactants, or saturated free C_{22-C₂₄} fatty acid surfactants.
101. The pharmaceutical composition of any one of embodiments 85-97, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include a mixture of saturated and unsaturated free C_{14-C₁₆} fatty acid surfactants, a mixture of saturated and unsaturated free C_{14-C₁₈} fatty acid surfactants, a mixture of

saturated and unsaturated free C₁₄-C₂₀ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₄-C₂₂ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₄-C₂₄ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₆-C₁₈ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₆-C₂₀ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₆-C₂₂ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₆-C₂₄ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₈-C₂₀ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₈-C₂₂ fatty acid surfactants, a mixture of saturated and unsaturated free C₁₈-C₂₄ fatty acid surfactants, a mixture of saturated and unsaturated free C₂₀-C₂₂ fatty acid surfactants, or a mixture of saturated and unsaturated free C₂₂-C₂₄ fatty acid surfactants.

102. The pharmaceutical composition of any one of embodiments 85-97, wherein the one or more free C₁₄-C₂₄ fatty acid surfactants include sodium palmitate (hexadecanoate), sodium palmitolinolenate, sodium palmitidonate, sodium palmitovaccenate, sodium palmitoleate, sodium sapienate, sodium 4-Hexadecenoate, sodium stearate (octadecenoate), sodium α -linolenate, sodium stearidonate, sodium α -eleostearate, sodium β -eleostearate, sodium punicate, sodium 7,10,13-octadecatrienoate, sodium 12-octadecenoate, sodium linoleate, sodium linolelaidate, Sodium γ -linolenate, sodium calendate, sodium pinolenate, sodium vaccinate, sodium rumenate, sodium oleate, sodium elaidate, sodium petroselinate, sodium arachidate (eicosanoate), sodium dihom- α -linolenate, sodium eicosatetraenoate, sodium eicosapentaenoate, sodium 9,12,15-eicosatrienoate, sodium β -eicosatetraenoate, sodium dihom-linoleate, sodium dihom- γ -linolenate, sodium arachidonate, sodium paullinate, sodium 7,10,13-eicosatrienoate, sodium gondoate, Sodium 8,11-eicosadienoate, sodium meadate, sodium gadoleate, sodium 8-eicosenoate, sodium behenate (docosanoate), sodium clupanodonate, sodium docosahexaenoate, sodium adrenate, sodium osbondate, sodium erucate, sodium lignocerate (tetracosanate), sodium 9,12,15,18,21-Tetracosapentaenoate, sodium 6,9,12,15,18,21-Tetracosahexaenoate, and sodium nervonate.
103. The pharmaceutical composition of any one of embodiments 85-102, wherein the one or more free C₁₄-C₂₄ fatty acid surfactants are in an amount of at least 0.5% by weight, at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, at least 10.0% by weight and/or at most 0.1% by weight, at most 0.5% by weight, at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, at most 10.0% by weight or between about 0.1% to about 0.5%, about 0.1% to about 1.0%, about 0.1% to about 2.0%, about 0.1% to about 3.0%, about 0.1% to about 4.0%, about 0.1% to about 5.0%, about 0.1% to about 6.0%, about 0.1% to about 7.0%, about 0.1% to about 8.0%, about 0.1% to about 9.0%, about 0.1% to about 10.0%, about 0.5% to about 1.0%, about 0.5% to about 2.0%, about 0.5% to about 3.0%, about 0.5% to about 4.0%, about 0.5% to about 5.0%, about 0.5% to about 6.0%, about 0.5% to about 7.0%, about 0.5% to about 8.0%,

about 0.5% to about 9.0%, about 0.5% to about 10.0%, about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%, about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about 8.0%, about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

104. The pharmaceutical composition of any one of embodiments 1-103, wherein the one or more therapeutic compounds in the solid particle component are different than the one or more therapeutic compounds in the solubilized component..
105. The pharmaceutical composition of any one of embodiments 1-103, wherein the pharmaceutical composition is not an emulsion or self-emulsifying formulation.
106. The pharmaceutical composition of any one of embodiments 1-105, wherein the pharmaceutical composition is not an emulsion or self-emulsifying formulation.
107. A pharmaceutical composition for use in treating a disease or disorder, the pharmaceutical composition being defined by any one of embodiments 1-106.
108. The pharmaceutical composition of embodiment 107, wherein the disease or disorder includes a neoplasm, a cancer, an inflammation, an autoimmune disorder, an idiopathic pulmonary fibrosis, and a renal disease or disorder.
109. A method of treating an individual with an inflammation, the method comprising the step of administering to the individual in need thereof a pharmaceutical composition as defined by any one of embodiments 1-106, wherein administration results in a reduction in a symptom associated with the inflammation, thereby treating the individual.
110. The method of embodiment 109, wherein the disease or disorder includes a neoplasm, a cancer, an inflammation, an autoimmune disorder, an idiopathic pulmonary fibrosis, and a renal disease or disorder.
111. Use of a pharmaceutical composition as defined by any one of embodiments 1-106 in the manufacture of a medicament for the treatment of a disease or disorder.
112. The use of embodiment 110, wherein the disease or disorder includes a neoplasm, a cancer, an inflammation, an autoimmune disorder, an idiopathic pulmonary fibrosis, and a renal disease or disorder.

[0224] Aspects of the present specification can also be described by the following embodiments:

1. A pharmaceutical composition, the pharmaceutical composition comprising a) one or more therapeutic compounds, the one or more therapeutic compounds comprising a solid particle component, b) one or

more glycerolipids, and c) one or more digestion enhancers, wherein the solid particle component comprises the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids.

2. The pharmaceutical composition of embodiment 1, wherein the one or more therapeutic compounds comprise one or more pharmaceutical active agents or ingredients, one or more diagnostic agents or ingredients, one or more cosmeceutical active agents or ingredients, one or more nutraceutical active agents or ingredients, or any combination thereof.
3. The pharmaceutical composition of any one of embodiments 1-2, wherein the one or more therapeutic compounds comprise:
 - a) one or more BCS Class I therapeutic compounds, one or more BCS Class II therapeutic compounds, one or more BCS Class III therapeutic compounds, one or more BCS Class IV therapeutic compounds, or any combination thereof; or
 - b) one or more hydrophilic therapeutic compounds, one or more amphipathic therapeutic compounds, one or more hydrophobic therapeutic compounds, one or more lipophilic therapeutic compounds, one or more therapeutic compounds comprising an organic acid functional group, one or more therapeutic compounds comprising an organic base functional group, or any combination thereof; or
 - c) one or more analgesics, one or more anesthetics, one or more antibacterials, one or more anticoagulants, one or more anticonvulsants, one or more antidementia agents, one or more antidepressants, one or more antidotes and antitoxins, one or more antiemetics, one or more antifungals, one or more anti-inflammatory agents, one or more antimigraine agents, one or more antimuscarinic agents, one or more antimycobacterials, one or more antineoplastics, one or more antiparasitics, one or more antiparkinson agents, one or more antipsychotics, one or more antivirals, one or more anxiolytic agents, one or more bipolar agents, one or more blood glucose regulators, one or more blood products, one or more cardiovascular agents, one or more central nervous system agents, one or more dental and oral agents, one or more dermatological agents, one or more enzyme replacement agent, one or more gastrointestinal agents, one or more genitourinary agents, one or more hormonal agents, one or more hormone suppressant, one or more immunological agents, one or more inflammatory bowel disease agents, one or more metabolic bone disease agents, one or more nootropic agents, one or more ophthalmic agents, one or more otic agents, one or more respiratory tract agents, one or more sedatives and hypnotics, one or more skeletal muscle relaxants, one or more and therapeutic nutrients, one or more minerals, one or more electrolytes, or any combination thereof; or
 - d) one or more 5-alpha-reductase inhibitors, one or more 5-aminosalicylates, one or more 5HT₃ receptor antagonists, one or more adamantane, one or more adrenal cortical steroids, one or more adrenal corticosteroid inhibitors, one or more agents for hypertensive emergencies, one or more agents for pulmonary hypertension, one or more aldosterone receptor antagonists, one or more alkylating agents, one or more allergens, one or more alpha-glucosidase inhibitors, one or more alternative medicines, one or more amebicides, one or more aminoglycosides, one or more aminopenicillins, one or more aminosaliclates, one or more AMPA receptor antagonists, one or more amphetamines, one or more amylin analogs, one or more analgesics, one or more

androgens, one or more anabolic steroids, one or more Angiotensin Converting Enzyme (ACE) inhibitors, one or more angiotensin II inhibitors, one or more angiotensin receptor blockers, one or more anorexiant, one or more antacids, one or more antiadrenergic agents, one or more antiandrogens, one or more antianginal agents, one or more antiarrhythmic agents, one or more antiasthmatic agents, one or more antianxiety agents, one or more antibiotics, one or more anticholinergic agents, one or more anticoagulants, one or more anticoagulant reversal agents, one or more anticonvulsants, one or more antidepressants, one or more antidiabetic agents, one or more antidiarrheals, one or more antidotes, one or more antiemetic agents, one or more antifungals, one or more antigonadotropic agents, one or more antigout agents, one or more antihelminthic agents, one or more antihistamines, one or more antihyperlipidemic agents, one or more antihypertensive agents, one or more antihyperuricemic agents, one or more antiinfective agents, one or more antimalarial agents, one or more antimanic agents, one or more antimetabolites, one or more antimigraine agents, one or more antineoplastic agents, one or more antineoplastic detoxifying agents, one or more antineoplastic interferons, one or more antiparkinson agents, one or more antiplatelet agents, one or more antipseudomonal penicillins, one or more antipsoriatics, one or more antipsychotics, one or more antirheumatics, one or more antirosacea agents, one or more antiseptic and germicides, one or more antispasmodics, one or more antithyroid agents, one or more antitoxins and antivenins, one or more antituberculosis agents, one or more antitussive agents, one or more antivertigo agents, one or more antiviral agents, one or more antiviral boosters, one or more anxiolytics, one or more sedatives, one or more and hypnotics, one or more aromatase inhibitors, one or more astringents, one or more atypical antipsychotics, one or more azole, one or more barbiturates, one or more BCR-ABL tyrosine kinase inhibitors, one or more benzodiazepines, one or more beta blockers, one or more beta-adrenergic blocking agents, one or more beta-lactamase inhibitors, one or more bile acid sequestrants, one or more bisphosphonates, one or more bone morphogenetic proteins, one or more bone resorption inhibitors, one or more bronchodilator combinations, one or more bronchodilators, one or more BTK inhibitors, one or more calcimimetics, one or more calcineurin inhibitors, one or more calcitonin, one or more calcium channel blocking agents, one or more carbapenems, one or more carbonic anhydrase inhibitors, one or more cardiac stressing agents, one or more cardioselective beta blockers, one or more cardiovascular agents, one or more catecholamines, one or more CDK 4/6 inhibitors, one or more central nervous system agents, one or more cephalosporins, one or more cerumenolytics, one or more CFTR potentiators, one or more CGRP inhibitors, one or more chelating agents, one or more chemokine receptor antagonist, one or more chloride channel activators, one or more cholesterol absorption inhibitors, one or more cholinergic agonists, one or more cholinergic muscle stimulants, one or more cholinesterase inhibitors, one or more chronotropic agents, one or more CNS agents, one or more CNS stimulants, one or more coagulation modifiers, one or more colony stimulating factors, one or more corticosteroids, one or more corticotropin, one or more coumarins and indandiones, one or more cox-2 inhibitors, one or more decongestants, one or more diarylquinolines, one or more dibenzazepine, one or more diagnostic dyes, one or more dipeptidyl peptidase 4 inhibitors, one or more disease-modifying antirheumatic drugs (DMARDs), one or more diuretics, one or more echinocandins, one or more

EGFR inhibitors, one or more erythropoiesis agents, one or more estrogen receptor antagonists, one or more estrogens, one or more expectorants, one or more factor Xa inhibitors, one or more fibric acid derivatives, one or more first generation cephalosporins, one or more fourth generation cephalosporins, one or more functional bowel disorder agents, one or more gallstone solubilizing agents, one or more gamma-aminobutyric acid analogs, one or more gamma-aminobutyric acid reuptake inhibitors, gastrointestinal agents, one or more genitourinary tract agents, one or more GI stimulants, one or more glucocorticoids, one or more glucose elevating agents, one or more glycoprotein platelet inhibitors, one or more glycylicyclines, one or more gonadotropin releasing hormones, one or more gonadotropin-releasing hormone antagonists, one or more gonadotropins, one or more group I antiarrhythmics, one or more group II antiarrhythmics, one or more group III antiarrhythmics, one or more group IV antiarrhythmics, one or more group V antiarrhythmics, one or more growth hormone receptor blockers, one or more growth hormones, one or more guanylate cyclase-C agonists, one or more H. pylori eradication agents, one or more H2 antagonists, one or more hedgehog pathway inhibitors, one or more hematopoietic stem cell mobilizer, one or more heparin antagonists, one or more heparins, one or more HER2 inhibitors, one or more herbal products, one or more histone deacetylase inhibitors, one or more hormones, one or more hydantoin, one or more hydrazide derivatives, one or more immunologic agents, one or more immunostimulants, one or more immunosuppressive agents, one or more impotence agents, one or more incretin mimetics, one or more inotropic agents, one or more insulin, one or more insulin-like growth factors, one or more integrase strand transfer inhibitor, one or more interferons, one or more interleukin inhibitors, one or more interleukins, one or more intravenous nutritional products, one or more investigational drugs, one or more iodinated contrast media, one or more iron products, one or more ketolides, one or more leprostatics, one or more leukotriene modifiers, one or more lincomycin derivatives, one or more local injectable anesthetics, one or more lymphatic staining agents, one or more macrolide derivatives, one or more macrolides, one or more magnetic resonance imaging contrast media, one or more malignancy photosensitizers, one or more mast cell stabilizers, one or more meglitinides, one or more melanocortin receptor agonists, one or more metabolic agents, one or more methylxanthines, one or more mineralocorticoids, one or more minerals and electrolytes, one or more mitotic inhibitors, one or more monoamine oxidase inhibitors, one or more mTOR inhibitors, one or more mucolytics, one or more multikinase inhibitors, one or more muscle relaxants, one or more mydriatics, one or more neprilysin inhibitors, one or more neuraminidase inhibitors, one or more neuromuscular blocking agents, one or more neuronal potassium channel openers, one or more NHE3 inhibitors, one or more nicotinic acid derivatives, one or more NK1 receptor antagonists, one or more non-opioids, one or more NNRTIs, one or more non-cardioselective beta blockers, one or more non-sulfonylureas, one or more nonsteroidal anti-inflammatory drugs, one or more nootropic agents, one or more NS5A inhibitors, one or more nucleoside reverse transcriptase inhibitors (NRTIs), one or more nutraceutical products, one or more nutritional products, one or more ophthalmic agents, one or more opioids, one or more otic agents, one or more oxazolidinone, one or more parathyroid hormone and analogs, one or more PARP inhibitors, one or more PCSK9 inhibitors, one or more penicillins, one or more peripheral opioid receptor antagonists, one or more peripheral opioid receptor mixed agonists/antagonists,

one or more peripheral vasodilators, one or more peripherally acting antiobesity agents, one or more phenothiazine, one or more phenylpiperazine, one or more phosphate binders, one or more PI3K inhibitors, one or more plasma expanders, one or more platelet aggregation inhibitors, one or more platelet-stimulating agents, one or more polyenes, one or more probiotics, one or more progesterone receptor modulators, one or more progestins, one or more prolactin inhibitors, one or more prostaglandin D2 antagonists, one or more protease inhibitors, one or more protease-activated receptor-1 antagonists, one or more proteasome inhibitors, one or more proton pump inhibitors, one or more PPAR agonists, one or more psoralens, one or more psychotherapeutic agents, one or more purine nucleosides, one or more pyrrolidine, one or more quinolones, one or more radiocontrast agents, one or more radiologic adjuncts, one or more radiologic agents, one or more radiologic conjugating agents, one or more radiopharmaceuticals, one or more renal replacement solutions, one or more renin inhibitors, one or more respiratory agents, one or more rifamycin derivatives, one or more salicylates, one or more sclerosing agents, one or more second generation cephalosporins, one or more selective estrogen receptor modulators, one or more selective immunosuppressants, one or more selective phosphodiesterase-4 inhibitors, one or more selective serotonin reuptake inhibitors, one or more serotonin-norepinephrine reuptake inhibitors, one or more serotonergic neuroenteric modulators, one or more sex hormones, one or more SGLT-2 inhibitors, one or more skeletal muscle relaxants, one or more smoking cessation agents, one or more somatostatin and somatostatin analogs, one or more spermicides, one or more statins, one or more streptogramins, one or more streptomyces derivatives, one or more succinimide, one or more sulfonamides, one or more sulfonylureas, one or more sympathomimetic amines, one or more synthetic ovulation stimulants, one or more tetracyclines, one or more therapeutic radiopharmaceuticals, one or more thiazide, one or more thiazolidinediones, one or more thioxanthenes, one or more third generation cephalosporins, one or more thrombin inhibitors, one or more thrombolytics, one or more thyroid drugs, one or more TNF α inhibitors, one or more tocolytic agents, one or more transthyretin stabilizers, one or more triazines, one or more urea cycle disorder agents, one or more urinary pH modifiers, one or more uterotonic agents, one or more vasodilators, one or more vasopressin antagonists, one or more vasopressors, one or more VEGF/VEGFR inhibitors, one or more viscosupplementation agents, one or more vitamin, one or more VMAT2 inhibitors, or any combination thereof; or

- e) an alkylating agent, an anti-metabolite, a cytotoxic antibiotic, a NSAID, a paracetamol-type therapeutic compound, a plant alkaloid and terpenoid, a PPAR α agonist, a PPAR γ agonist, a PPAR δ agonist, a dual PPAR- α/γ agonist, a PPAR-13 agonist, a topoisomerase inhibitor, amphetamines, anticholinergic agents, anticonvulsant agents, antidementia agents, antidepressant agents, antispasticity agents, antiemetic agents, antimigraine agents, anti-obesity agents, antiparkinson agents, antipsychotic agents, anxiolytic agents, attention deficit hyperactivity disorder agents, benzodiazepines, bipolar agents, calcitonin gene-related peptide (CGRP) receptor antagonists, calcium channel modifying agents, cholinesterase inhibitors, dopamine agonists, dopamine precursors and/or l-amino acid decarboxylase inhibitors, emetogenic therapy adjuncts, ergot alkaloids, fibromyalgia agents, gamma-aminobutyric acid (GABA) augmenting agents, monoamine oxidase inhibitors, monoamine oxidase B inhibitors, multiple sclerosis agents, N-

- methyl-D-aspartate (NMDA) receptor antagonist, selective serotonin reuptake inhibitors/serotonin and norepinephrine reuptake inhibitors (SSRI/SNRI), serotonin (5-HT) receptor agonists, sleep disorder agents, sleep promoting agents, sodium channel modifying agents, tricyclic agents, and wakefulness promoting agents, a fibrate, a statin, a tocotrienol, a niacin, a bile acid sequestrants (resin), a cholesterol absorption inhibitor, a pancreatic lipase inhibitor, an α -adrenergic agonist, a β -adrenergic agonist, a dopaminergic agonist, a monoamine oxidase (MAO) inhibitor, a COMT inhibitor, a retinoid, a vitamin, a cannabinoid, a cannabinoid receptor modulator, a 5-HT₃ serotonin ion channel antagonist, a 5-HT serotonin G-protein receptor antagonist, a CB₁ agonist, a D₂/D₃ antagonist, a H₁ antagonist, a mACh antagonist, a NK₁ antagonist, or any combination thereof; or
- f) abiraterone, amlexanox, aprepitant, auranofin, cannibidiol, curcumin, diclofenac, eliglustat, fenofibrate, ibuprofen, mebendazole, midastaurin, naproxen, niflumic acid, nintedanib, olaparib, pirfenidone, pitolisant, telmisartan, or any combination thereof.
4. The pharmaceutical composition of any one of embodiments 1-3, wherein the one or more therapeutic compounds are in an amount of about 0.1% to about 1%, about 0.1% to about 2.5%, about 0.1% to about 5%, about 0.1% to about 7.5%, about 0.1% to about 10%, about 0.1% to about 12.5%, about 0.1% to about 15%, about 0.1% to about 17.5%, about 0.1% to about 20%, about 0.1% to about 22.5%, about 0.1% to about 25%, about 0.1% to about 30%, about 0.1% to about 40%, about 0.1% to about 50%, about 1% to about 2.5%, about 1% to about 5%, about 1% to about 7.5%, about 1% to about 10%, about 1% to about 12.5%, about 1% to about 15%, about 1% to about 17.5%, about 1% to about 20%, about 1% to about 22.5%, about 1% to about 25%, about 1% to about 30%, about 1% to about 40%, about 1% to about 50%, about 5% to about 10%, about 5% to about 15%, about 5% to about 20%, about 5% to about 25%, about 5% to about 30%, about 5% to about 40%, about 5% to about 50%, about 10% to about 15%, about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 40%, about 10% to about 50%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 40%, about 15% to about 50%, about 20% to about 30%, about 20% to about 40%, about 20% to about 50%, about 30% to about 40%, about 30% to about 50%, or about 40% to about 50% by weight.
5. The pharmaceutical composition of any one of embodiments 1-4, wherein the one or more therapeutic compounds are in an amount of about 25 mg/mL to about 50 mg/mL, about 25 mg/mL to about 75 mg/mL, about 25 mg/mL to about 100 mg/mL, about 25 mg/mL to about 125 mg/mL, about 25 mg/mL to about 150 mg/mL, about 25 mg/mL to about 200 mg/mL, about 25 mg/mL to about 250 mg/mL, about 25 mg/mL to about 300 mg/mL, about 25 mg/mL to about 350 mg/mL, about 25 mg/mL to about 400 mg/mL, about 25 mg/mL to about 450 mg/mL, about 25 mg/mL to about 500 mg/mL, about 25 mg/mL to about 550 mg/mL, about 25 mg/mL to about 600 mg/mL, about 50 mg/mL to about 100 mg/mL, about 50 mg/mL to about 150 mg/mL, about 50 mg/mL to about 200 mg/mL, about 50 mg/mL to about 250 mg/mL, about 50 mg/mL to about 300 mg/mL, about 50 mg/mL to about 350 mg/mL, about 50 mg/mL to about 400 mg/mL, about 50 mg/mL to about 450 mg/mL, about 50 mg/mL to about 500 mg/mL, about 50 mg/mL to about 550 mg/mL, about 50 mg/mL to about 600 mg/mL, about 75 mg/mL to about 100 mg/mL, about 75 mg/mL to about 150 mg/mL, about 75 mg/mL to about 200 mg/mL, about 75 mg/mL to about 250 mg/mL, about 75 mg/mL to about 300 mg/mL, about 75 mg/mL to about 350 mg/mL, about 75 mg/mL to about 400 mg/mL, about 75 mg/mL to about 450 mg/mL, about 75 mg/mL to about 500

mg/mL, about 75 mg/mL to about 550 mg/mL, about 75 mg/mL to about 600 mg/mL, about 100 mg/mL to about 150 mg/mL, about 100 mg/mL to about 200 mg/mL, about 100 mg/mL to about 250 mg/mL, about 100 mg/mL to about 300 mg/mL, about 100 mg/mL to about 350 mg/mL, about 100 mg/mL to about 400 mg/mL, about 100 mg/mL to about 450 mg/mL, about 100 mg/mL to about 500 mg/mL, about 100 mg/mL to about 550 mg/mL, or about 100 mg/mL to about 600 mg/mL.

6. The pharmaceutical composition of any one of embodiments 1-5, wherein about 50% to about 100% of the one or more therapeutic compounds are present in solid particle component.
7. The pharmaceutical composition of any one of embodiments 1-6, wherein the one or more therapeutic compounds further comprise a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids.
8. The pharmaceutical composition of embodiment 7, wherein a ratio of the solid particle component to the solubilized component of the one or more therapeutic compounds is about 5:95, about 10:90, about 15:85, about 20:80, about 25:75, about 30:70, about 35:65, about 40:60, about 45:55, about 50:50, about 55:45, about 60:40, about 65:35, about 70:30, about 75:25, about 80:20, about 85:15, about 90:10, or about 95:5; or at least 5:95, at least 10:90, at least 15:85, at least 20:80, at least 25:75, at least 30:70, at least 35:65, at least 40:60, at least 45:55, at least 50:50, at least 55:45, at least 60:40, at least 65:35, at least 70:30, at least 75:25, at least 80:20, at least 85:15, at least 90:10, or at least 95:5 and/or at most 5:95, at most 10:90, at most 15:85, at most 20:80, at most 25:75, at most 30:70, at most 35:65, at most 40:60, at most 45:55, at most 50:50, at most 55:45, at most 60:40, at most 65:35, at most 70:30, at most 75:25, at most 80:20, at most 85:15, at most 90:10, or at most 95:5; or about 5:95 to about 10:90, about 5:95 to about 15:85, about 5:95 to about 20:80, about 5:95 to about 25:75, about 5:95 to about 30:60, about 5:95 to about 35:65, about 5:95 to about 40:60, about 5:95 to about 45:55, about 5:95 to about 50:50, about 5:95 to about 55:45, about 5:95 to about 60:40, about 5:95 to about 65:35, about 5:95 to about 70:30, about 5:95 to about 75:25, about 5:95 to about 80:20, about 5:95 to about 85:15, about 5:95 to about 90:10, about 5:95 to about 95:5, about 10:90 to about 15:85, about 10:90 to about 20:80, about 10:90 to about 25:75, about 10:90 to about 30:60, about 10:90 to about 35:65, about 10:90 to about 40:60, about 10:90 to about 45:55, about 10:90 to about 50:50, about 10:90 to about 55:45, about 10:90 to about 60:40, about 10:90 to about 65:35, about 10:90 to about 70:30, about 10:90 to about 75:25, about 10:90 to about 80:20, about 10:90 to about 85:15, about 10:90 to about 90:10, about 10:90 to about 95:5, about 15:85 to about 20:80, about 15:85 to about 25:75, about 15:85 to about 30:60, about 15:85 to about 35:65, about 15:85 to about 40:60, about 15:85 to about 45:55, about 15:85 to about 50:50, about 15:85 to about 55:45, about 15:85 to about 60:40, about 15:85 to about 65:35, about 15:85 to about 70:30, about 15:85 to about 75:25, about 15:85 to about 80:20, about 15:85 to about 85:15, about 15:85 to about 90:10, about 15:85 to about 95:5, about 20:80 to about 25:75, about 20:80 to about 30:60, about 20:80 to about 35:65, about 20:80 to about 40:60, about 20:80 to about 45:55, about 20:80 to about 50:50, about 20:80 to about 55:45, about 20:80 to about 60:40, about 20:80 to about 65:35, about 20:80 to about 70:30, about 20:80 to about 75:25, about 20:80 to about 80:20, about 20:80 to about 85:15, about 20:80 to about 90:10, about 20:80 to about 95:5, about 25:75 to about 30:60, about 25:75 to about 35:65, about 25:75 to about 40:60, about 25:75 to about 45:55, about 25:75 to about 50:50, about 25:75 to about 55:45, about 25:75 to about 60:40, about 25:75 to about 65:35, about 25:75 to about 70:30, about 25:75 to about 75:25, about 25:75 to

about 80:20, about 25:75 to about 85:15, about 25:75 to about 90:10, about 25:75 to about 95:5, about 30:70 to about 35:65, about 30:70 to about 40:60, about 30:70 to about 45:55, about 30:70 to about 50:50, about 30:70 to about 55:45, about 30:70 to about 60:40, about 30:70 to about 65:35, about 30:70 to about 70:30, about 30:70 to about 75:25, about 30:70 to about 80:20, about 30:70 to about 85:15, about 30:70 to about 90:10, about 30:70 to about 95:5, about 35:65 to about 40:60, about 35:65 to about 45:55, about 35:65 to about 50:50, about 35:65 to about 55:45, about 35:65 to about 60:40, about 35:65 to about 65:35, about 35:65 to about 70:30, about 35:65 to about 75:25, about 35:65 to about 80:20, about 35:65 to about 85:15, about 35:65 to about 90:10, about 35:65 to about 95:5, about 40:60 to about 45:55, about 40:60 to about 50:50, about 40:60 to about 55:45, about 40:60 to about 60:40, about 40:60 to about 65:35, about 40:60 to about 70:30, about 40:60 to about 75:25, about 40:60 to about 80:20, about 40:60 to about 85:15, about 40:60 to about 90:10, about 40:60 to about 95:5, about 45:55 to about 50:50, about 45:55 to about 55:45, about 45:55 to about 60:40, about 45:55 to about 65:35, about 45:55 to about 70:30, about 45:55 to about 75:25, about 45:55 to about 80:20, about 45:55 to about 85:15, about 45:55 to about 90:10, about 45:55 to about 95:5, about 50:50 to about 55:45, about 50:50 to about 60:40, about 50:50 to about 65:35, about 50:50 to about 70:30, about 50:50 to about 75:25, about 50:50 to about 80:20, about 50:50 to about 85:15, about 50:50 to about 90:10, about 50:50 to about 95:5, about 55:45 to about 60:40, about 55:45 to about 65:35, about 55:45 to about 70:30, about 55:45 to about 75:25, about 55:45 to about 80:20, about 55:45 to about 85:15, about 55:45 to about 90:10, about 55:45 to about 95:5, about 60:40 to about 65:35, about 60:40 to about 70:30, about 60:40 to about 75:25, about 60:40 to about 80:20, about 60:40 to about 85:15, about 60:40 to about 90:10, about 60:40 to about 95:5, about 65:35 to about 70:30, about 65:35 to about 75:25, about 65:35 to about 80:20, about 65:35 to about 85:15, about 65:35 to about 90:10, about 65:35 to about 95:5, about 70:30 to about 75:25, about 70:30 to about 80:20, about 70:30 to about 85:15, about 70:30 to about 90:10, about 70:30 to about 95:5, about 75:25 to about 80:20, about 75:25 to about 85:15, about 75:25 to about 90:10, about 75:25 to about 95:5, about 80:20 to about 85:15, about 80:20 to about 90:10, about 80:20 to about 95:5, about 85:15 to about 90:10, about 85:15 to about 95:5, or about 90:10 to about 95:5, preferably the ratio of a solid particle component to a solubilized component of one or more therapeutic compounds is about 60:40 to about 40:60, and more preferably 55:45 to about 45:55.

9. The pharmaceutical composition of any one of embodiments 7-8, wherein the one or more therapeutic compounds present in the solubilized component are in an amount of about 0.05% to about 1%, about 0.05% to about 2.5%, about 0.05% to about 5%, about 0.05% to about 7.5%, about 0.05% to about 10%, about 0.05% to about 12.5%, about 0.05% to about 15%, about 0.05% to about 17.5%, about 0.05% to about 20%, about 0.05% to about 22.5%, about 0.05% to about 25%, about 0.05% to about 30%, about 0.05% to about 40%, about 0.05% to about 50%, about 0.1% to about 1%, about 0.1% to about 2.5%, about 0.1% to about 5%, about 0.1% to about 7.5%, about 0.1% to about 10%, about 0.1% to about 12.5%, about 0.1% to about 15%, about 0.1% to about 17.5%, about 0.1% to about 20%, about 0.1% to about 22.5%, about 0.1% to about 25%, about 0.1% to about 30%, about 0.1% to about 40%, about 0.1% to about 50%, about 1% to about 2.5%, about 1% to about 5%, about 1% to about 7.5%, about 1% to about 10%, about 1% to about 12.5%, about 1% to about 15%, about 1% to about 17.5%, about 1% to about 20%, about 1% to about 22.5%, about 1% to about 25%, about 1% to about 30%, about 1% to about 40%, about 1% to about 50%, about 1% to about 60%, about 1% to about 70%, about 1% to about 80%, about 1% to about 90%, about 1% to about 95%, about 1% to about 99%, or about 1% to about 100%, preferably the amount of one or more therapeutic compounds is about 0.05% to about 1%, and more preferably about 0.05% to about 0.1%, or about 0.1% to about 1%, or about 1% to about 10%, or about 10% to about 50%, or about 50% to about 90%, or about 90% to about 99%, or about 99% to about 100%.

30%, about 1% to about 40%, about 1% to about 50%, about 5% to about 10%, about 5% to about 20%, about 5% to about 30%, about 5% to about 40%, about 5% to about 50%, about 10% to about 20%, about 10% to about 30%, about 10% to about 40%, about 10% to about 50%, about 20% to about 30%, about 20% to about 40%, about 20% to about 50%, about 30% to about 40%, about 30% to about 50%, or about 40% to about 50% by weight.

10. The pharmaceutical composition of any one of embodiments 7-9, wherein the one or more therapeutic compounds present in the solubilized component are in an amount of about 10 mg/mL to about 25 mg/mL, about 10 mg/mL to about 50 mg/mL, about 10 mg/mL to about 75 mg/mL, about 10 mg/mL to about 100 mg/mL, about 10 mg/mL to about 125 mg/mL, about 10 mg/mL to about 150 mg/mL, about 10 mg/mL to about 200 mg/mL, about 10 mg/mL to about 250 mg/mL, about 10 mg/mL to about 300 mg/mL, about 25 mg/mL to about 50 mg/mL, about 25 mg/mL to about 75 mg/mL, about 25 mg/mL to about 100 mg/mL, about 25 mg/mL to about 125 mg/mL, about 25 mg/mL to about 150 mg/mL, about 25 mg/mL to about 200 mg/mL, about 25 mg/mL to about 250 mg/mL, about 25 mg/mL to about 300 mg/mL, about 50 mg/mL to about 100 mg/mL, about 50 mg/mL to about 150 mg/mL, about 50 mg/mL to about 200 mg/mL, about 50 mg/mL to about 250 mg/mL, about 50 mg/mL to about 300 mg/mL, about 75 mg/mL to about 100 mg/mL, about 75 mg/mL to about 150 mg/mL, about 75 mg/mL to about 200 mg/mL, about 75 mg/mL to about 250 mg/mL, about 75 mg/mL to about 300 mg/mL, about 100 mg/mL to about 150 mg/mL, about 100 mg/mL to about 200 mg/mL, about 100 mg/mL to about 250 mg/mL, about 100 mg/mL to about 300 mg/mL, about 125 mg/mL to about 150 mg/mL, about 125 mg/mL to about 200 mg/mL, about 125 mg/mL to about 250 mg/mL, about 125 mg/mL to about 300 mg/mL, about 150 mg/mL to about 200 mg/mL, about 150 mg/mL to about 250 mg/mL, about 150 mg/mL to about 300 mg/mL, about 200 mg/mL to about 250 mg/mL, about 200 mg/mL to about 300 mg/mL, or about 250 mg/mL to about 300 mg/mL.
11. The pharmaceutical composition of any one of embodiments 7-10, wherein the one or more therapeutic compounds present in the solid particle component are in an amount of about 0.05% to about 1%, about 0.05% to about 2.5%, about 0.05% to about 5%, about 0.05% to about 7.5%, about 0.05% to about 10%, about 0.05% to about 12.5%, about 0.05% to about 15%, about 0.05% to about 17.5%, about 0.05% to about 20%, about 0.05% to about 22.5%, about 0.05% to about 25%, about 0.05% to about 30%, about 0.05% to about 40%, about 0.05% to about 50%, about 0.1% to about 1%, about 0.1% to about 2.5%, about 0.1% to about 5%, about 0.1% to about 7.5%, about 0.1% to about 10%, about 0.1% to about 12.5%, about 0.1% to about 15%, about 0.1% to about 17.5%, about 0.1% to about 20%, about 0.1% to about 22.5%, about 0.1% to about 25%, about 0.1% to about 30%, about 0.1% to about 40%, about 0.1% to about 50%, about 1% to about 2.5%, about 1% to about 5%, about 1% to about 7.5%, about 1% to about 10%, about 1% to about 12.5%, about 1% to about 15%, about 1% to about 17.5%, about 1% to about 20%, about 1% to about 22.5%, about 1% to about 25%, about 1% to about 30%, about 1% to about 40%, about 1% to about 50%, about 5% to about 10%, about 5% to about 20%, about 5% to about 30%, about 5% to about 40%, about 5% to about 50%, about 10% to about 20%, about 10% to about 30%, about 10% to about 40%, about 10% to about 50%, about 20% to about 30%, about 20% to about 40%, about 20% to about 50%, about 30% to about 40%, about 30% to about 50%, or about 40% to about 50% by weight.

12. The pharmaceutical composition of any one of embodiments 7-11, wherein the one or more therapeutic compounds present in the solid particle component are in an amount of about 10 mg/mL to about 25 mg/mL, about 10 mg/mL to about 50 mg/mL, about 10 mg/mL to about 75 mg/mL, about 10 mg/mL to about 100 mg/mL, about 10 mg/mL to about 125 mg/mL, about 10 mg/mL to about 150 mg/mL, about 10 mg/mL to about 200 mg/mL, about 10 mg/mL to about 250 mg/mL, about 10 mg/mL to about 300 mg/mL, about 25 mg/mL to about 50 mg/mL, about 25 mg/mL to about 75 mg/mL, about 25 mg/mL to about 100 mg/mL, about 25 mg/mL to about 125 mg/mL, about 25 mg/mL to about 150 mg/mL, about 25 mg/mL to about 200 mg/mL, about 25 mg/mL to about 250 mg/mL, about 25 mg/mL to about 300 mg/mL, about 50 mg/mL to about 100 mg/mL, about 50 mg/mL to about 150 mg/mL, about 50 mg/mL to about 200 mg/mL, about 50 mg/mL to about 250 mg/mL, about 50 mg/mL to about 300 mg/mL, about 75 mg/mL to about 100 mg/mL, about 75 mg/mL to about 150 mg/mL, about 75 mg/mL to about 200 mg/mL, about 75 mg/mL to about 250 mg/mL, about 75 mg/mL to about 300 mg/mL, about 100 mg/mL to about 150 mg/mL, about 100 mg/mL to about 200 mg/mL, about 100 mg/mL to about 250 mg/mL, about 100 mg/mL to about 300 mg/mL, about 125 mg/mL to about 150 mg/mL, about 125 mg/mL to about 200 mg/mL, about 125 mg/mL to about 250 mg/mL, about 125 mg/mL to about 300 mg/mL, about 150 mg/mL to about 200 mg/mL, about 150 mg/mL to about 250 mg/mL, about 150 mg/mL to about 300 mg/mL, about 200 mg/mL to about 250 mg/mL, about 200 mg/mL to about 300 mg/mL, or about 250 mg/mL to about 300 mg/mL.
13. The pharmaceutical composition of any one of embodiments 1-12, wherein the one or more glycerolipids are in an amount of at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, at least 75% by weight, at least 80% by weight, at least 85% by weight, at least 90% by weight, or at least 95% by weight and/or at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, at most 75% by weight, at most 80% by weight, at most 85% by weight, at most 90% by weight, or at most 95% by weight or between about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 40% to about 65%, about 40% to about 70%, about 40% to about 75%, about 40% to about 80%, about 40% to about 85%, about 40% to about 90%, about 40% to about 95%, about 45% to about 55%, about 45% to about 60%, about 45% to about 65%, about 45% to about 70%, about 45% to about 75%, about 45% to about 80%, about 45% to about 85%, about 45% to about 90%, about 45% to about 95%, about 50% to about 55%, about 50% to about 60%, about 50% to about 65%, about 50% to about 70%, about 50% to about 75%, about 50% to about 80%, about 50% to about 85%, about 50% to about 90%, about 50% to about 95%, about 55% to about 60%, about 55% to about 65%, about 55% to about 70%, about 55% to about 75%, about 55% to about 80%, about 55% to about 85%, about 55% to about 90%, about 55% to about 95%, about 60% to about 65%, about 60% to about 70%, about 60% to about 75%, about 60% to about 80%, about 60% to about 85%, about 60% to about 90%, about 60% to about 95%, about 65% to about 70%, about 65% to about 75%, about 65% to about 80%, about 65% to about 85%, about 65% to about 90%, about 65% to about 95%, about 70% to about 75%, about 70% to about 80%, about 70% to about 85%, about 70% to about 90%, about 70% to about 95%, about 75% to about 80%, about 75% to about 85%, about 75% to about 90%, about 75% to about 95%, about 80% to about 85%, about

80% to about 90%, about 80% to about 95%, about 85% to about 90%, about 85% to about 95%, or about 90% to about 95% by weight.

14. The pharmaceutical composition of any one of embodiments 1-13, wherein the one or more glycerolipids comprises one or more hard fats and one or more liquid fats.
15. The pharmaceutical composition of embodiment 14, wherein the one or more hard fats include one or more triglycerides.
16. The pharmaceutical composition of embodiment 15, wherein the one or more triglycerides include a mixture of saturated C₁₀-C₁₈ triglycerides, a mixture of saturated C₁₀-C₂₀ triglycerides, a mixture of saturated C₁₀-C₂₂ triglycerides, a mixture of saturated C₁₀-C₂₄ triglycerides, a mixture of saturated C₁₂-C₁₈ triglycerides, a mixture of saturated C₁₂-C₂₀ triglycerides, a mixture of saturated C₁₂-C₂₂ triglycerides, a mixture of saturated C₁₂-C₂₄ triglycerides, a mixture of saturated C₁₄-C₁₈ triglycerides, a mixture of saturated C₁₄-C₂₀ triglycerides, a mixture of saturated C₁₄-C₂₂ triglycerides, a mixture of saturated C₁₄-C₂₄ triglycerides, a mixture of saturated C₁₆-C₁₈ triglycerides, a mixture of saturated C₁₆-C₂₀ triglycerides, a mixture of saturated C₁₆-C₂₂ triglycerides, a mixture of saturated C₁₆-C₂₄ triglycerides, a mixture of saturated C₁₈-C₂₀ triglycerides, a mixture of saturated C₁₈-C₂₂ triglycerides, a mixture of saturated C₁₈-C₂₄ triglycerides, a mixture of saturated C₂₀-C₂₂ triglycerides, or a mixture of saturated C₂₂-C₂₄ triglycerides.
17. The pharmaceutical composition of embodiment 15, wherein the one or more triglycerides include a mixture of unsaturated C₁₀-C₁₈ triglycerides, a mixture of unsaturated C₁₀-C₂₀ triglycerides, a mixture of unsaturated C₁₀-C₂₂ triglycerides, a mixture of unsaturated C₁₀-C₂₄ triglycerides, a mixture of unsaturated C₁₂-C₁₈ triglycerides, a mixture of unsaturated C₁₂-C₂₀ triglycerides, a mixture of unsaturated C₁₂-C₂₂ triglycerides, a mixture of unsaturated C₁₂-C₂₄ triglycerides, a mixture of unsaturated C₁₄-C₁₈ triglycerides, a mixture of unsaturated C₁₄-C₂₀ triglycerides, a mixture of unsaturated C₁₄-C₂₂ triglycerides, a mixture of unsaturated C₁₄-C₂₄ triglycerides, a mixture of unsaturated C₁₆-C₁₈ triglycerides, a mixture of unsaturated C₁₆-C₂₀ triglycerides, a mixture of unsaturated C₁₆-C₂₂ triglycerides, a mixture of unsaturated C₁₆-C₂₄ triglycerides, a mixture of unsaturated C₁₈-C₂₀ triglycerides, a mixture of unsaturated C₁₈-C₂₂ triglycerides, a mixture of unsaturated C₁₈-C₂₄ triglycerides, a mixture of unsaturated C₂₀-C₂₂ triglycerides, or a mixture of unsaturated C₂₂-C₂₄ triglycerides.
18. The pharmaceutical composition of embodiment 15, wherein the one or more triglycerides include a mixture of saturated and unsaturated C₁₀-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ triglycerides, a mixture of saturated

and unsaturated C₁₈-C₂₄ triglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ triglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ triglycerides.

19. The pharmaceutical composition of any one of embodiments 15-18, wherein the one or more hard fats are in an amount of at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, and/or at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, or between about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 50% to about 55%, about 50% to about 60%, about 55% to about 60% by weight.
20. The pharmaceutical composition of any one of embodiments 14-19, wherein the one or more liquid fats include one or more partially hydrolyzed glycerolipids, one or more monoglycerides, or a combination thereof.
21. The pharmaceutical composition of embodiment 20, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of mono-, di- and triglycerides.
22. The pharmaceutical composition of embodiment 20, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of unsaturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of unsaturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of unsaturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of unsaturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of unsaturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈ triglycerides, a mixture of unsaturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a mixture of unsaturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of unsaturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of unsaturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of unsaturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of unsaturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of unsaturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides.

triglycerides, a mixture of unsaturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of unsaturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of unsaturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of unsaturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of unsaturated C₁₈-C₂₀ monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of unsaturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of unsaturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of unsaturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of unsaturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.

23. The pharmaceutical composition of embodiment 20, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of saturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of saturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of saturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of saturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of saturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈ triglycerides, a mixture of saturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a mixture of saturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of saturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of saturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of saturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of saturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of saturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides, a mixture of saturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of saturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of saturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of saturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of saturated C₁₈-C₂₀ monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of saturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of saturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of saturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of saturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.
24. The pharmaceutical composition of embodiment 20, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of saturated and unsaturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a

mixture of saturated and unsaturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.

25. The pharmaceutical composition of any one of embodiments 20-24, wherein the one or more partially hydrolyzed glycerolipids are in an amount of at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, and/or at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, or between about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 50% to about 55%, about 50% to about 60%, about 55% to about 60% by weight.
26. The pharmaceutical composition of any one of embodiments 20-25, wherein the one or more monoglycerides comprise unsaturated C₁₀-C₁₈ monoglycerides, unsaturated C₁₀-C₂₀ monoglycerides, unsaturated C₁₀-C₂₂ monoglycerides, unsaturated C₁₀-C₂₄ monoglycerides, unsaturated C₁₂-C₁₈

monoglycerides, unsaturated C₁₂-C₂₀ monoglycerides, unsaturated C₁₂-C₂₂ monoglycerides, unsaturated C₁₂-C₂₄ monoglycerides, unsaturated C₁₄-C₁₈ monoglycerides, unsaturated C₁₄-C₂₀ monoglycerides, unsaturated C₁₄-C₂₂ monoglycerides, unsaturated C₁₄-C₂₄ monoglycerides, unsaturated C₁₆-C₁₈ monoglycerides, unsaturated C₁₆-C₂₀ monoglycerides, unsaturated C₁₆-C₂₂ monoglycerides, unsaturated C₁₆-C₂₄ monoglycerides, unsaturated C₁₈-C₂₀ monoglycerides, unsaturated C₁₈-C₂₂ monoglycerides, unsaturated C₁₈-C₂₄ monoglycerides, unsaturated C₂₀-C₂₂ monoglycerides, or unsaturated C₂₂-C₂₄ monoglycerides.

27. The pharmaceutical composition of any one of embodiments 20-25, wherein the one or more monoglycerides comprise saturated C₁₀-C₁₈ monoglycerides, saturated C₁₀-C₂₀ monoglycerides, saturated C₁₀-C₂₂ monoglycerides, saturated C₁₀-C₂₄ monoglycerides, saturated C₁₂-C₁₈ monoglycerides, saturated C₁₂-C₂₀ monoglycerides, saturated C₁₂-C₂₂ monoglycerides, saturated C₁₂-C₂₄ monoglycerides, saturated C₁₄-C₁₈ monoglycerides, saturated C₁₄-C₂₀ monoglycerides, saturated C₁₄-C₂₂ monoglycerides, saturated C₁₄-C₂₄ monoglycerides, saturated C₁₆-C₁₈ monoglycerides, saturated C₁₆-C₂₀ monoglycerides, saturated C₁₆-C₂₂ monoglycerides, saturated C₁₆-C₂₄ monoglycerides, saturated C₁₈-C₂₀ monoglycerides, saturated C₁₈-C₂₂ monoglycerides, saturated C₁₈-C₂₄ monoglycerides, saturated C₂₀-C₂₂ monoglycerides, or saturated C₂₂-C₂₄ monoglycerides.
28. The pharmaceutical composition of any one of embodiments 20-25, wherein the one or more monoglycerides comprise a mixture of saturated and unsaturated C₁₀-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ monoglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ monoglycerides.
29. The pharmaceutical composition of any one of embodiments 26-28, wherein the one or more monoglycerides are in an amount of at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, and/or at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, or between about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about

15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 50% to about 55%, about 50% to about 60%, about 55% to about 60% by weight.

30. The pharmaceutical composition of any one of embodiments 14-29, wherein the one or more hard fats and the one or more liquid fats are in a hard fat to liquid fat ratio of about 5:1 to about 4:1, about 5:1 to about 3:1, about 5:1 to about 2:1, about 5:1 to about 1:1, about 4:1 to about 3:1, about 4:1 to about 2:1, about 4:1 to about 1:1, about 3:1 to about 2:1, about 3:1 to about 1:1, or about 2:1 to about 1:1.
31. The pharmaceutical composition of any one of embodiments 14-29, wherein the one or more hard fats and the one or more liquid fats are in a hard fat to liquid fat ratio of about 1:5 to about 1:4, about 1:5 to about 1:3, about 1:5 to about 1:2, about 1:5 to about 1:1, about 1:4 to about 1:3, about 1:4 to about 1:2, about 1:4 to about 1:1, about 1:3 to about 1:2, about 1:3 to about 1:1, or about 1:2 to about 1:1.
32. The pharmaceutical composition of any one of embodiments 1-31, wherein the one or more digestion enhancers are in an amount of at least 1% by weight, at least 2.5% by weight, at least 5% by weight, at least 7.5% by weight, at least 10 % by weight, at least 12.5% by weight, at least 15 % by weight, at least 17.5% by weight, at least 20% by weight, at least 22.5% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, at least 75% by weight, at least 75% by weight and/or at most 1% by weight, at most 2.5% by weight, at most 5% by weight, at most 7.5% by weight, at most 10 % by weight, at most 12.5% by weight, at most 15 % by weight, at most 17.5% by weight, at most 20% by weight, at most 22.5% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, at most 75% by weight, or at most 80% by weight, or between about 1% to about 2.5% by weight, about 1% to about 5% by weight, about 1% to about 10% by weight, about 1% to about 15% by weight, about 1% to about 20% by weight, about 1% to about 25% by weight, about 2.5% to about 5% by weight, about 2.5% to about 10% by weight, about 2.5% to about 15% by weight, about 2.5% to about 20% by weight, about 2.5% to about 25% by weight, about 5% to about 10% by weight, about 5% to about 15% by weight, about 5% to about 20% by weight, about 5% to about 25% by weight, about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 10% to about 65%, about 10% to about 70%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%,

about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 15% to about 65%, about 15% to about 70%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 20% to about 65%, about 20% to about 70%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 25% to about 65%, about 25% to about 70%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 30% to about 65%, about 30% to about 70%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 35% to about 65%, about 35% to about 70%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 40% to about 65%, about 40% to about 70%, about 40% to about 75%, about 40% to about 80%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 45% to about 65%, about 45% to about 70%, about 45% to about 75%, about 45% to about 80%, about 50% to about 55%, about 50% to about 60%, about 50% to about 65%, about 50% to about 70%, about 50% to about 75%, about 50% to about 80%, about 55% to about 60%, about 55% to about 65%, about 55% to about 70%, about 55% to about 75%, about 55% to about 80%, about 60% to about 65%, about 60% to about 70%, about 60% to about 75%, about 60% to about 80%, about 65% to about 70% by weight, about 65% to about 75%, about 65% to about 80%,. about 70% to about 75%, about 70% to about 80%, or about 75% to about 80% by weight.

33. The pharmaceutical composition of embodiment 32, wherein the one or more digestion enhancers include one or more bile acids, one or more phospholipids, one or more free C₁₄₋₂₄ fatty acids, one or more free C₁₄₋₂₄ fatty acid surfactants, or any combination thereof.
34. The pharmaceutical composition of embodiment 33, wherein the one or more bile acids includes cholic acid, chenodeoxycholic acid, dafachronic acid, deoxycholic acid, glycocholic acid, glycochenodeoxycholic acid, lithocholic acid, taurochenodeoxycholic acid, taurocholic acid, any stereoisomer thereof, and any combination thereof.
35. The pharmaceutical composition of embodiment 33 or 34, wherein the one or more bile acids are in an amount of at least 0.1% by weight, at least 0.5% by weight, at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, or at least 10.0% by weight and/or at most 0.1% by weight, at most 0.5% by weight, at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, or at most 10.0% by weight or between about 0.1% to about 0.5%, about 0.1% to about 1.0%, about 0.1% to about 2.0%, about 0.1% to about 3.0%, about 0.1% to about 4.0%, about 0.1% to about 5.0%, about 0.1% to about 6.0%, about 0.1% to about 7.0%, about

0.1% to about 8.0%, about 0.1% to about 9.0%, about 0.1% to about 10.0%, about 0.5% to about 1.0%, about 0.5% to about 2.0%, about 0.5% to about 3.0%, about 0.5% to about 4.0%, about 0.5% to about 5.0%, about 0.5% to about 6.0%, about 0.5% to about 7.0%, about 0.5% to about 8.0%, about 0.5% to about 9.0%, about 0.5% to about 10.0%, about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%, about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about 8.0%, about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

36. The pharmaceutical composition of any one of embodiments 33-35, wherein the one or more phospholipids include one or more phosphoglycerides, one or more phosphosphingolipids, one or more lecithins, or any combination thereof.
37. The pharmaceutical composition of embodiment 36, wherein the one or more phosphoglycerides include a phosphatidic acid (phosphatidate) (PA), a phosphatidylethanolamine (PE), a phosphatidylcholine (PC), a phosphatidylserine (PS), a cardiolipin, a phosphoinositide, or any combination thereof.
38. The pharmaceutical composition of embodiment 36, wherein the one or more phosphosphingolipids include phosphatidylethanolamine (PE), phosphatidylcholine (PC), ceramide phosphorylethanolamine (Cer-PE), ceramide phosphorylcholine (Cer-PC), or any combination thereof.
39. The pharmaceutical composition of embodiment 33 or 36-38, wherein the one or more phospholipids are in an amount of at least 0.1% by weight, at least 0.5% by weight, at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, or at least 10.0% by weight and/or at most 0.1% by weight, at most 0.5% by weight, at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, or at most 10.0% by weight or between about 0.1% to about 0.5%, about 0.1% to about 1.0%, about 0.1% to about 2.0%, about 0.1% to about 3.0%, about 0.1% to about 4.0%, about 0.1% to about 5.0%, about 0.1% to about 6.0%, about 0.1% to about 7.0%, about 0.1% to about 8.0%, about 0.1% to about 9.0%, about 0.1% to about 10.0%, about 0.5% to about 1.0%,

about 0.5% to about 2.0%, about 0.5% to about 3.0%, about 0.5% to about 4.0%, about 0.5% to about 5.0%, about 0.5% to about 6.0%, about 0.5% to about 7.0%, about 0.5% to about 8.0%, about 0.5% to about 9.0%, about 0.5% to about 10.0%, about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%, about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about 8.0%, about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

40. The pharmaceutical composition of any one of embodiments 33-39, wherein the one or more free C₁₄₋₂₄ fatty acids include unsaturated free C_{14-C₁₆} fatty acids, unsaturated free C_{14-C₁₈} fatty acids, unsaturated free C_{14-C₂₀} fatty acids, unsaturated free C_{14-C₂₂} fatty acids, unsaturated free C_{14-C₂₄} fatty acids, unsaturated free C_{16-C₁₈} fatty acids, unsaturated free C_{16-C₂₀} fatty acids, unsaturated free C_{16-C₂₂} fatty acids, unsaturated free C_{16-C₂₄} fatty acids, unsaturated free C_{18-C₂₀} fatty acids, unsaturated free C_{18-C₂₂} fatty acids, unsaturated free C_{18-C₂₄} fatty acids, unsaturated free C_{20-C₂₂} fatty acids, or unsaturated free C_{22-C₂₄} fatty acids.
41. The pharmaceutical composition of any one of embodiments 33-39, wherein the one or more free C₁₄₋₂₄ fatty acids include ω -3 unsaturated free C_{18-C₂₂} fatty acids, ω -5 unsaturated free C_{18-C₂₂} fatty acids, ω -6 unsaturated free C_{18-C₂₂} fatty acids, ω -7 unsaturated free C_{18-C₂₂} fatty acids, ω -9 unsaturated free C_{18-C₂₂} fatty acids, ω -10 unsaturated free C_{18-C₂₂} fatty acids, ω -11 unsaturated free C_{18-C₂₂} fatty acids, or ω -12 unsaturated free C_{18-C₂₂} fatty acids.
42. The pharmaceutical composition of any one of embodiments 33-3991, wherein the one or more free C₁₄₋₂₄ fatty acids include saturated free C_{14-C₁₆} fatty acids, saturated free C_{14-C₁₈} fatty acids, saturated free C_{14-C₂₀} fatty acids, saturated free C_{14-C₂₂} fatty acids, saturated free C_{14-C₂₄} fatty acids, saturated free C_{16-C₁₈} fatty acids, saturated free C_{16-C₂₀} fatty acids, saturated free C_{16-C₂₂} fatty acids, saturated free C_{16-C₂₄} fatty acids, saturated free C_{18-C₂₀} fatty acids, saturated free C_{18-C₂₂} fatty acids, saturated free C_{18-C₂₄} fatty acids, saturated free C_{20-C₂₂} fatty acids, or saturated free C_{22-C₂₄} fatty acids.
43. The pharmaceutical composition of any one of embodiments 33-39, wherein the one or more free C₁₄₋₂₄ fatty acids include a mixture of saturated and unsaturated free C_{14-C₁₆} fatty acids, a mixture of saturated and unsaturated free C_{14-C₁₈} fatty acids, a mixture of saturated and unsaturated free C_{14-C₂₀} fatty acids, a mixture of saturated and unsaturated free C_{14-C₂₂} fatty acids, a mixture of saturated and unsaturated free C_{14-C₂₄} fatty acids, a mixture of saturated and unsaturated free C_{16-C₁₈} fatty acids, a mixture of saturated and unsaturated free C_{16-C₂₀} fatty acids, a mixture of saturated and unsaturated free C_{16-C₂₂} fatty acids, a mixture of saturated and unsaturated free C_{16-C₂₄} fatty acids, a mixture of saturated and unsaturated free C_{18-C₂₀} fatty acids, a mixture of saturated and unsaturated free C_{18-C₂₂}

fatty acids, a mixture of saturated and unsaturated free C₁₈-C₂₄ fatty acids, a mixture of saturated and unsaturated free C₂₀-C₂₂ fatty acids, or a mixture of saturated and unsaturated free C₂₂-C₂₄ fatty acids.

44. The pharmaceutical composition of any one of embodiments 33-39, wherein the one or more free C₁₄₋₂₄ fatty acids include palmitic acid (hexadecanoic acid), palmitolinolenic acid, palmitidonic acid, palmitovaccenic acid, palmitoleic acid, sapienic acid, 4-Hexadecenoic acid, stearic acid (octadecenoic acid), α -linolenic acid, stearidonic acid, α -eleostearic acid, β -eleostearic acid, punicic acid, 7,10,13-octadecatrenoic acid, 12-octadecenoic acid, linoleic acid, linolelaidic acid, γ -linolenic acid, calendic acid, pinolenic acid, vaccinic acid, rumenic acid, oleic acid, elaidic acid, petroselinic acid, arachidic acid (eicosanoic acid), dihom- α -linolenic acid, eicosic acidtraenoic acid, eicosapentaenoic acid, 9,12,15-eicosatrienoic acid, β -eicosic acidtraenoic acid, dihom-linoleic acid, dihom- γ -linolenic acid, arachidonic acid, paullinic acid, 7,10,13-eicosatrienoic acid, gondoic acid, 8,11-eicosadienoic acid, meadic acid, gadoleic acid, 8-eicosenoic acid, behenic acid (docosanoic acid), clupanodonic acid, docosahexaenoic acid, adrenic acid, osbondic acid, erucic acid, lignoceric acid (tetracosanic acid), 9,12,15,18,21-Tetracosapentaenoic acid, 6,9,12,15,18,21-Tetracosahexaenoic acid, and nervonic acid.
45. The pharmaceutical composition of any one of embodiments 33-44, wherein the one or more free C₁₄₋₂₄ fatty acids are in an amount of at least 1% by weight, at least 2.5% by weight, at least 5% by weight, at least 7.5% by weight, at least 10 % by weight, at least 12.5% by weight, at least 15 % by weight, at least 17.5% by weight, at least 20% by weight, at least 22.5% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 50% by weight, at least 60% by weight, at least 70% by weight, at least 75% by weight and/or at most 1% by weight, at most 2.5% by weight, at most 5% by weight, at most 7.5% by weight, at most 10 % by weight, at most 12.5% by weight, at most 15 % by weight, at most 17.5% by weight, at most 20% by weight, at most 22.5% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 50% by weight, at most 60% by weight, at most 70% by weight, at most 75% by weight or between about 1% to about 2.5% by weight, about 1% to about 5% by weight, about 1% to about 10% by weight, about 1% to about 15% by weight, about 1% to about 20% by weight, about 1% to about 25% by weight, about 2.5% to about 5% by weight, about 2.5% to about 10% by weight, about 2.5% to about 15% by weight, about 2.5% to about 20% by weight, about 2.5% to about 25% by weight, about 2.5% to about 30% by weight, about 5% to about 10% by weight, about 5% to about 15% by weight, about 5% to about 20% by weight, about 5% to about 25% by weight, about 5% to about 30% by weight, about 10% to about 15% by weight, about 10% to about 20% by weight, about 10% to about 25% by weight, about 10% to about 30% by weight, about 10% to about 40% by weight, about 10% to about 45% by weight, about 10% to about 50% by weight, about 10% to about 60% by weight, about 10% to about 70% by weight, about 15% to about 20% by weight, about 15% to about 25% by weight, about 15% to about 30% by weight, about 15% to about 40% by weight, about 15% to about 45% by weight, about 15% to about 50% by weight, about 15% to about 60% by weight, about 15% to about 70% by weight, about 20% to about 25% by weight, about 20% to about 30% by weight, about 20% to about 40% by weight, about 20% to about 45% by weight, about 20% to about 50% by weight, about 20% to about 60% by weight, about 20% to about 70% by weight, about 30% to about 40% by weight, about 30% to about 50% by weight, about 30% to about 60% by weight, about 30% to about 70% by weight,

weight, about 30% to about 75% by weight, about 35% to about 40% by weight, about 35% to about 50% by weight, about 35% to about 60% by weight, about 35% to about 70% by weight, about 35% to about 75% by weight, about 40% to about 50% by weight, about 40% to about 60% by weight, about 40% to about 70% by weight, about 40% to about 75% by weight, about 50% to about 60% by weight, about 50% to about 70% by weight, or about 60% to about 70% by weight.

46. The pharmaceutical composition of any one of embodiments 33-45, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include unsaturated free C_{14-C₁₆} fatty acid surfactants, unsaturated free C_{14-C₁₈} fatty acid surfactants, unsaturated free C_{14-C₂₀} fatty acid surfactants, unsaturated free C_{14-C₂₂} fatty acid surfactants, unsaturated free C_{14-C₂₄} fatty acid surfactants, unsaturated free C_{16-C₁₈} fatty acid surfactants, unsaturated free C_{16-C₂₀} fatty acid surfactants, unsaturated free C_{16-C₂₂} fatty acid surfactants, unsaturated free C_{16-C₂₄} fatty acid surfactants, unsaturated free C_{18-C₂₀} fatty acid surfactants, unsaturated free C_{18-C₂₂} fatty acid surfactants, unsaturated free C_{18-C₂₄} fatty acid surfactants, unsaturated free C_{20-C₂₂} fatty acid surfactants, or unsaturated free C_{22-C₂₄} fatty acid surfactants.
47. The pharmaceutical composition of any one of embodiments 33-45, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include ω -3 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -5 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -6 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -7 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -9 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -10 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -11 unsaturated free C_{18-C₂₂} fatty acid surfactants, or ω -12 unsaturated free C_{18-C₂₂} fatty acid surfactants.
48. The pharmaceutical composition of any one of embodiments 33-45, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include saturated free C_{14-C₁₆} fatty acid surfactants, saturated free C_{14-C₁₈} fatty acid surfactants, saturated free C_{14-C₂₀} fatty acid surfactants, saturated free C_{14-C₂₂} fatty acid surfactants, saturated free C_{14-C₂₄} fatty acid surfactants, saturated free C_{16-C₁₈} fatty acid surfactants, saturated free C_{16-C₂₀} fatty acid surfactants, saturated free C_{16-C₂₂} fatty acid surfactants, saturated free C_{16-C₂₄} fatty acid surfactants, saturated free C_{18-C₂₀} fatty acid surfactants, saturated free C_{18-C₂₂} fatty acid surfactants, saturated free C_{18-C₂₄} fatty acid surfactants, saturated free C_{20-C₂₂} fatty acid surfactants, or saturated free C_{22-C₂₄} fatty acid surfactants.
49. The pharmaceutical composition of any one of embodiments 33-45, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include a mixture of saturated and unsaturated free C_{14-C₁₆} fatty acid surfactants, a mixture of saturated and unsaturated free C_{14-C₁₈} fatty acid surfactants, a mixture of saturated and unsaturated free C_{14-C₂₀} fatty acid surfactants, a mixture of saturated and unsaturated free C_{14-C₂₂} fatty acid surfactants, a mixture of saturated and unsaturated free C_{14-C₂₄} fatty acid surfactants, a mixture of saturated and unsaturated free C_{16-C₁₈} fatty acid surfactants, a mixture of saturated and unsaturated free C_{16-C₂₀} fatty acid surfactants, a mixture of saturated and unsaturated free C_{16-C₂₂} fatty acid surfactants, a mixture of saturated and unsaturated free C_{16-C₂₄} fatty acid surfactants, a mixture of saturated and unsaturated free C_{18-C₂₀} fatty acid surfactants, a mixture of saturated and unsaturated free C_{18-C₂₂} fatty acid surfactants, a mixture of saturated and unsaturated free C_{18-C₂₄} fatty acid surfactants, a mixture of saturated and unsaturated free C_{20-C₂₂} fatty acid surfactants, or a mixture of saturated and unsaturated free C_{22-C₂₄} fatty acid surfactants.

50. The pharmaceutical composition of any one of embodiments 33-45, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include sodium palmitate (hexadecanoate), sodium palmitolinolenate, sodium palmitidonate, sodium palmitovaccenate, sodium palmitoleate, sodium sapienate, sodium 4-Hexadecenoate, sodium stearate (octadecenoate), sodium α -linolenate, sodium stearidonate, sodium α -eleostearate, sodium β -eleostearate, sodium punicate, sodium 7,10,13-octadecatrienoate, sodium 12-octadecenoate, sodium linoleate, sodium linolealdate. Sodium γ -linolenate, sodium calendate, sodium pinolenate, sodium vaccinate, sodium rumenate, sodium oleate, sodium elaidate, sodium petroselinate, sodium arachidate (eicosanoate), sodium dihomom- α -linolenate, sodium eicosatetraenoate, sodium eicosapentaenoate, sodium 9,12,15-eicosatrienoate, sodium β -eicosatetraenoate, sodium dihomom-linoleate, sodium dihomom- γ -linolenate, sodium arachidonate, sodium paullinate, sodium 7,10,13-eicosatrienoate, sodium gondoate, Sodium 8,11-eicosadienoate, sodium meadate, sodium gadoleate, sodium 8-eicosenoate, sodium behenate (docosanoate), sodium clupanodonate, sodium docosahexaenoate, sodium adrenate, sodium osbondate, sodium erucate, sodium lignocerate (tetracosanate), sodium 9,12,15,18,21-Tetracosapentaenoate, sodium 6,9,12,15,18,21-Tetracosahexaenoate, and sodium nervonate.
51. The pharmaceutical composition of any one of embodiments 33-50, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants are in an amount of at least 0.5% by weight, at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, at least 10.0% by weight and/or at most 0.1% by weight, at most 0.5% by weight, at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, at most 10.0% by weight or between about 0.1% to about 0.5%, about 0.1% to about 1.0%, about 0.1% to about 2.0%, about 0.1% to about 3.0%, about 0.1% to about 4.0%, about 0.1% to about 5.0%, about 0.1% to about 6.0%, about 0.1% to about 7.0%, about 0.1% to about 8.0%, about 0.1% to about 9.0%, about 0.1% to about 10.0%, about 0.5% to about 1.0%, about 0.5% to about 2.0%, about 0.5% to about 3.0%, about 0.5% to about 4.0%, about 0.5% to about 5.0%, about 0.5% to about 6.0%, about 0.5% to about 7.0%, about 0.5% to about 8.0%, about 0.5% to about 9.0%, about 0.5% to about 10.0%, about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%,

about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about 8.0%, about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

52. The pharmaceutical composition of any one of embodiments 1-51, wherein the one or more therapeutic compounds are the same in the solid particle component and solubilized component..
53. The pharmaceutical composition of any one of embodiments 1-51, wherein the one or more therapeutic compounds in the solid particle component are different than the one or more therapeutic compounds in the solubilized component..
54. The pharmaceutical composition of any one of embodiments 1-53, wherein the pharmaceutical composition is not an emulsion or self-emulsifying formulation.
55. A pharmaceutical composition for use in treating a disease or disorder, the pharmaceutical composition being defined by any one of embodiments 1-54.
56. The pharmaceutical composition of embodiment 55, wherein the disease or disorder includes a neoplasm, a cancer, an inflammation, an autoimmune disorder, an idiopathic pulmonary fibrosis, and a renal disease or disorder.
57. A method of treating an individual with an inflammation, the method comprising the step of administering to the individual in need thereof a pharmaceutical composition as defined by any one of embodiments 1-54, wherein administration results in a reduction in a symptom associated with the inflammation, thereby treating the individual.
58. The method of embodiment 57, wherein the disease or disorder includes a neoplasm, a cancer, an inflammation, an autoimmune disorder, an idiopathic pulmonary fibrosis, and a renal disease or disorder.
59. Use of a pharmaceutical composition as defined by any one of embodiments 1-54 in the manufacture of a medicament for the treatment of a disease or disorder.
60. The use of embodiment 59, wherein the disease or disorder includes a neoplasm, a cancer, an inflammation, an autoimmune disorder, an idiopathic pulmonary fibrosis, and a renal disease or disorder.

EXAMPLES

[0225] The following non-limiting examples are provided for illustrative purposes only in order to facilitate a more complete understanding of representative embodiments now contemplated. These examples should not be construed to limit any of the embodiments described in the present specification, including those pertaining to the compounds, pharmaceutical compositions, or methods and uses disclosed herein.

Example 1 Aprepitant Solid Suspension Formulations

[0226] Pharmacokinetic experiments were performed to assess whether pharmaceutical compositions comprising aprepitant and formulated as a dual or mixed phase composition comprising a solid particle

having aprepitant present as a solid dispersion within a lipid matrix and a solubilized component having dissolved aprepitant within the lipid matrix resulted in a higher bioavailability of this therapeutic compound.

[0227] In one series of experiments, pharmaceutical compositions comprising aprepitant were prepared (see Table 1) to assess the impact of having 50% and 100% of aprepitant present as a solid dispersion would have on the bioavailability of this therapeutic compound. APRF9 is a pharmaceutical composition formulated as a liquid solution and comprises 0.95% aprepitant, 33.30% MAISINE™ CC, 27.56% GELUCIRE® 43/01, 33.30% oleic acid, and 4.90% cholic acid. APRF9 served as a baseline control to APRF10, APRF11, and APRF12, the 50:50 dual or mixed phase composition comprising a solid particle having 50% of the total aprepitant present as a solid dispersion within a lipid matrix and a solubilized component having 50% of the total aprepitant dissolved within the lipid matrix. These formulations were also evaluated against Comparator Formulation 1 (CMF1), a commercial product (Emend) comprising aprepitant suspended in carboxymethylcellulose. For APRF10 and APRF11, aprepitant was micronized to produce a smaller mean particle size while for APRF12, aprepitant was used as received from the chemical manufacturer with no additional processing.

Table 1. Aprepitant Compositions				
Component	APRF9	APRF10	APRF11	APRF12
Aprepitant (solubilized)	0.95%	0.48%	0.00%	0.48%
Aprepitant (dispersed)	0.00%	0.48%	0.98%	0.48%
MAISINE™ CC	33.30%	39.70%	40.21%	39.70%
Oleic Acid	33.30%	39.70%	40.21%	39.70%
GELUCIRE® 43/01	27.56%	17.12%	17.34%	17.12%
Cholic Acid	4.90%	2.51%	1.27%	1.27%

[0228] To prepare APRF10- APRF12, and referring to Table 2, aprepitant was added to a solution comprising MAISINE™ CC heated to 140°C to dissolve the therapeutic compound and then cooled to 50°C resulting the solubilized admixture. Note that the temperature is one high enough to dissolve the aprepitant in the heated solution. In a separate container, micronized aprepitant particles were added to a solution comprising GELUCIRE® 43/01 and oleic acid heated to 50°C and stirred to create a dispersion (the solid particle admixture). Note that the temperature is one high enough to melt the lipids but not dissolve the aprepitant in the heated solution. Also note that the type and amount of lipids added to the solid dispersion admixture are ones to achieve a melting temperature of the resulting solid composition of about 30°C to 37°C. The solid particle admixture is then mixed with the solubilized admixture and cooled to room temperature (17°C to 20°C) to solidify into a pharmaceutical composition comprising a) aprepitant, b) one or more glycerolipids, and c) one or more digestion enhancers, wherein the aprepitant comprise a solid particle component having aprepitant present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having aprepitant dissolved within the lipid matrix including the one or more glycerolipids

Table 2. Aprepitant Dual or Mixed Phase Formulations			
Component	APRF10	APRF11	APRF12
Liquid Admixture			

Aprepitant (solubilized)	0.48%	0.98%	0.48%
MAISINE™ CC	39.70%	40.21%	39.70%
Cholic Acid	2.51%	1.27%	1.27%
Solid Dispersion Admixture			
Aprepitant (particles)	0.48%	0.98%	0.48%
GELUCIRE® 43/01	17.12%	17.34%	17.12%
Oleic Acid	39.70%	40.21%	39.70%

[0229] The particle size distribution of fine and course material in the four aprepitant pharmaceutical compositions was determined by laser diffraction particle analysis (Malvern 3000). The results are shown in Table 3. As expected APRF9, the completely solubilized formulation, contained no detectable solid particles of aprepitant. APRF10 and APRF11, formulations containing micronized solid dispersions of aprepitant showed comparable particle size distributions while APRF12, a formulation containing unmiconized or course solid dispersions of aprepitant contained a particle size distribution of aprepitant that was significantly larger than APRF10 and APRF11.

Table 3. Particle Size Distribution of Aprepitant Particles in Solid Particle Component				
Equivalent Spherical Diameter	APRF9	APRF10	APRF11	APRF12
D10	ND	0.49 µm	0.49 µm	12.4 µm
D50	ND	1.55 µm	1.55 µm	62.1 µm
D90	ND	4.18 µm	4.18 µm	175.9 µm
ND, none detected.				

[0230] To assess the pharmacokinetics of the four aprepitant pharmaceutical compositions, male Bama mini pigs, each with an average weight of between 20 g to 25 g, were divided into five groups of three animals. Animals from each group were oral dosed by gavage as follows: Group 1 animals received a single dose of APRF9 administered at 9 mg/kg; Group 2 animals received a single dose of APRF10 administered at 9 mg/kg; Group 3 animals received a single dose of APRF11 administered at 9 mg/kg; Group 4 animals received a single dose of APRF12 administered at 9 mg/kg; and Group 5 animals received a single dose of CMF1 administered at 9 mg/kg. Samples of whole blood were taken just prior to administration, 0 h, and at the following 8 post-administration time points: 0.5 hr, 1 hr, 2 hr, 4 hr, 6 hr, 8 hr, 12 hr, and 24 hr. Collected whole blood samples were processed by adding 200 µL of a warfarin internal standard solution (100 ng/mL warfarin in DMSO/water/acetonitrile) to 50 µL of whole blood and precipitating blood proteins from this admixture using standard procedures and the resulting supernatants were stored frozen at approximately -80°C (4) prior to analysis. Processed blood supernatants were sent for bioanalysis, utilizing LC-MS/MS with a reverse phase C18 column (2.1 mm x 50 mm), 1.7 µm 40°C with a mobile phase gradient between: 0.1% formic acid in water and 0.1% formic acid in acetonitrile, a flow rate of 0.6 mL/min and injection volume 2 µL. Blood samples were analyzed for various pharmacokinetic parameters including the amount of aprepitant administer (dose), the peak concentration of aprepitant achieved after administration (C_{max}), the time required for aprepitant to reach its C_{max} (T_{max}), the time required for the concentration of aprepitant to reach half its C_{max} (T_{1/2}), and the integral of the

concentration-time curve between from time zero to the time of last quantifiable measurement taken during the experiments (AUClast).

[0231] As shown in Table 4, all four aprepitant pharmaceutical compositions exhibited superior pharmacokinetic properties for aprepitant relative to CMF1. For example, APRF9, APRF10, APRF11, and APRF12 all demonstrated higher absorption levels of aprepitant in blood as indicated lower clearance over time as indicated by a larger AUClast and AUC ratio values versus CMF1. With respect to comparison of the four aprepitant pharmaceutical compositions, the three solid dispersion formulations APRF10, APRF11, and APRF12 all demonstrated substantially higher absorption levels of aprepitant in blood as indicated by lower clearance over time as indicated by decreased Tmax and a larger AUClast versus APRF9, the completely solubilized formulation. In addition, APRF10 and APRF11 had a significantly higher Cmax than either APRF9 or APRF12 suggesting that APRF10 and APRF11 produce higher concentrations of aprepitant in blood with and the slowest clearance over time indicating greater drug exposure relative to the other formulations. The pharmacokinetic properties APRF12 were similar to APRF9 suggesting that particle size has a bearing on aprepitant absorption, with micronized solid dispersions being more advantageous than course solid dispersions. Overall, APRF9, APRF10, APRF11, and APRF12 demonstrate pharmacokinetic improvements compared to CMF1, with the 50% micronized solid dispersion formulation APRF10 and the 100% micronized solid dispersion formulation APRF11 exhibiting the most improved pharmacokinetic properties of the formulations tested.

Table 4. Mean Pharmacokinetic Parameters of Aprepitant Blood Levels by Formulation					
Parameter	APRF9	APRF10	APRF11	APRF12	CMF1
T1/2 (hr)	11.84 ± 5.00	10.51 ± 3.90	11.48 ± 5.64	8.65 ± 2.65	6.76 ± 1.46
Tmax (hr)	10.67 ± 2.31	10.00 ± 3.46	8.00 ± 0.00	9.33 ± 2.31	5.33 ± 1.15
Cmax (ng/mL)	2164 ± 464	2555 ± 1051	2582 ± 888	2204 ± 825	2433 ± 397
AUClast (hr*ng/mL)	39741 ± 12329	47864 ± 10856	49091 ± 23060	41181 ± 18658	34507 ± 1909
AUC Ratio*	1.15	1.39	1.42	1.19	1.0
* AUC Ratio is the AUClast value of a formulation divided by AUClast value of CMF1.					

[0232] These results indicate that pharmaceutical compositions comprising a solid dispersion of aprepitant in a lipid excipient vehicle significantly improves the absorption of aprepitant when compared to either 1) a pharmaceutical composition comprising a solid dispersion of aprepitant in a non-lipid excipient vehicle (CMF1); or 2) a pharmaceutical composition comprising a completely solubilized aprepitant in a lipid excipient vehicle (APRF9). These results are surprising because it was not expected that small sized particles when subjected to the digestive processes would have improved absorption.

[0233] A potential mechanism of action could involve absorption of dissolved drug into the lymphatic system and absorption of solid drug particles into the circulatory system because particles are present in aqueous component of chyme in intestine. For example, in, APRF10, the 50/50 solid suspension formulation, the portion of the aprepitant solubilized in lipid could be absorbed by the lymphatic system while the portion of the aprepitant present as solid particles could be absorbed by the circulatory system via the portal vein as these solid particles are dissolved in the aqueous component of chyme. As a result, the two routes are additive given improved exposure. When the aprepitant is presented as 100% solid, as

shown with APRF11, a portion of the aprepitant present as solid particles is solvated into the lipid during digestion so allowing lymphatic absorption to occur while the rest is solvated into the aqueous compartment and absorbed into the circulatory system via the portal vein.

[0234] In another series of experiments, pharmaceutical compositions comprising aprepitant were prepared (see Table 5) to assess the impact of having 50% and 100% of the aprepitant present as a solid dispersion would have on the bioavailability of this therapeutic compound in a multiple dose setting. APRF13 is a pharmaceutical composition formulated as a 50:50 solid dispersion formulation solution and comprises 0.96% aprepitant, 39.70% MAISINE™ CC, 17.12% GELUCIRE® 43/01, 39.70% oleic acid, and 2.51% cholic acid. APRF14 is a pharmaceutical composition formulated as a 100% solid dispersion formulation and comprises 0.98% aprepitant, 40.21% MAISINE™ CC, 17.34% GELUCIRE® 43/01, 40.21% oleic acid, and 1.27% cholic acid. These formulations were also evaluated against Comparator Formulation 1 (CMF1), a commercial product (Emend) comprising aprepitant suspended in carboxymethylcellulose. For APRF13 and APRF14, aprepitant was micronized to produce a smaller mean particle size (D10 0.61 µm, D50 2.91 µm, and D90 6.19 µm) and was formulated by adding aprepitant to a solution comprising MAISINE™ CC heated to 140°C to dissolve the therapeutic compound and then cooled to 50°C resulting the solubilized admixture. In a separate container, micronized aprepitant particles were added to a solution comprising GELUCIRE® 43/01 and oleic acid heated to 50°C and stirred to create a dispersion (the solid particle admixture). The solid particle admixture is then mixed with the solubilized admixture and cooled to room temperature (17°C to 20°C) to solidify into a pharmaceutical composition comprising a) aprepitant, b) one or more glycerolipids, and c) one or more digestion enhancers, wherein the aprepitant comprise a solid particle component having aprepitant present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having aprepitant dissolved within the lipid matrix including the one or more glycerolipids

Table 5. Aprepitant Compositions		
Component	APRF13	APRF14
Aprepitant (solubilized)	0.48%	0.0%
Aprepitant (dispersed)	0.48%	0.98%
MAISINE™ CC	39.70%	40.21%
Oleic Acid	39.70%	40.21%
GELUCIRE® 43/01	17.12%	17.34%
Cholic Acid	2.51%	1.27%

[0235] To assess the pharmacokinetics of the two aprepitant pharmaceutical compositions, male Bama mini pigs, each with an average weight of between 20 g to 25 g, were divided into three groups of five animals. Animals from each group were oral dosed by gavage as follows: Group 1 animals received APRF14 at 9 mg/kg administered twice daily 8 hours apart; Group 2 animals received APRF13 at 9 mg/kg administered twice daily 8 hours apart; Group 3 animals received CMF1 at 9 mg/kg administered twice daily 8 hours apart. Samples of whole blood were taken just prior to administration, 0 h, and at the following 8 post-administration time points: 0.5 hr, 1 hr, 2 hr, 4 hr, 6 hr, 8 hr, 12 hr, 24 hr, and 30 hr after Day 1, Day 7

and Day 14. On Day 15, animals were euthanized and tissue was harvested from brain, adipose tissue, liver, lymph node, lung, pancreas, and bone marrow and stored at -80°C until bioanalysis.

[0236] Collected whole blood samples were processed by adding 200 µL of a warfarin internal standard solution (100 ng/mL warfarin in DMSO/water/acetonitrile) to 50 µL of whole blood and precipitating blood proteins from this admixture using standard procedures and the resulting supernatants were stored frozen at approximately -80°C (4) prior to analysis. Processed blood supernatants were sent for bioanalysis, utilizing LC-MS/MS with a reverse phase C18 column (2.1 mm x 50 mm), 1.7 µm 40°C with a mobile phase gradient between: 0.1% formic acid in water and 0.1% formic acid in acetonitrile, a flow rate of 0.6 mL/min and injection volume 2 µL. Blood samples were analyzed for various pharmacokinetic parameters including the amount of aprepitant administer (dose), the peak concentration of aprepitant achieved after administration (C_{max}), the time required for aprepitant to reach its C_{max} (T_{max}), the time required for the concentration of aprepitant to reach half its C_{max} (T_{1/2}), and the integral of the concentration-time curve between from time zero to the time of last quantifiable measurement taken during the experiments (AUC_{last}).

[0237] As shown in Table 6, the pharmaceutical composition formulated as a 50:50 solid dispersion (APRF13) exhibited superior pharmacokinetic properties for aprepitant relative to a pharmaceutical composition formulated as a 100% dispersion (APRF14) or a pharmaceutical composition formulated as a suspension (CMF1). For example, APRF14 demonstrated higher absorption levels of aprepitant in blood as indicated by a higher concentration of aprepitant in the blood as indicated by a higher C_{max} value and a lower clearance over time as indicated by a larger AUC_{max} values relative to APRF13 and CMF1, and a higher AUC ratio values versus CMF1. These results indicate that a pharmaceutical composition formulated as a 50:50 solid dispersion (APRF14) exhibited significantly better bioavailability relative to the control formulations that are solely a solution (APRF13) or a suspension (CMF1).

Table 6. Mean Pharmacokinetic Parameters of Aprepitant Blood Levels by Formulation				
Day	Parameter	APRF13	APRF14	CMF1
1	T_{max} (hr)	21.60 ± 5.037	21.60 ± 5.037	12.00 ± 0.00
	C_{max} (ng/mL)	3400.46 ± 954.54	2915.60 ± 460.50	2855.78 ± 260.20
	AUC_{last} (hr*ng/mL)	70511.07 ± 19434.81	62421.16 ± 11096.35	58688.54 ± 8790.70
	AUC Ratio*	1.20	1.06	1.0
7	T_{max} (hr)	8.40 ± 4.98	8.40 ± 4.02	12.00 ± 0.00
	C_{max} (ng/mL)	3572.22 ± 1208.17	2682.25 ± 421.52	2385.47 ± 437.16
	AUC_{last} (hr*ng/mL)	83677.17 ± 39766.60	60278.73 ± 11752.72	48554.82 ± 8843.22
	AUC Ratio*	1.72	1.24	1.0
14	T_{max} (hr)	6.40 ± 5.18	10.40 ± 9.10	16.50 ± 9.00
	C_{max} (ng/mL)	4053.57 ± 1470.44	1712.70 ± 692.85	2278.72 ± 448.51
	AUC_{last} (hr*ng/mL)	87706.43 ± 36046.92	36944.55 ± 12715.71	46968.97 ± 8297.74
	AUC Ratio*	1.87	0.79	1.0
* AUC Ratio is the AUC _{last} value of a formulation divided by AUC _{last} value of CMF1.				

[0238] With respect to comparison of the pharmacokinetic properties over the three time points assayed and surprising property was revealed for APRF13. For example, a Day 1, while showing signs on increase bioavailability due higher C_{max} and AUC_{max} values relative to APRF14 and CMF1, APRF13 took a longer period of time to achieve these initial values (compare T_{max} of 21.60 ± 5.037 hr for APRF14 versus a T_{max} of 12.00 ± 0.00 hr for CMF1 in Table 6). However, at Day 7 and Day 14, APRF13 took a significantly shorter period of time to achieve an even greater increase in bioavailability due to even higher C_{max} and AUC_{max} values relative to CMF1. For example, at Day 7, APRF13 had a T_{max} of 8.40 ± 4.98 hr, a C_{max} of 3572.22 ± 1208.17 ng/mL, and a AUC_{max} of 83677.17 ± 39766.60 hr*ng/mL while CMF1 had a T_{max} of 12.00 ± 0.00 hr, a C_{max} of 2385.47 ± 437.16 ng/mL, and a AUC_{max} of 48554.82 ± 8843.22 hr*ng/mL. The differences were even more striking by Day 14 with APRF13 having a T_{max} of 6.40 ± 5.18 hr, a C_{max} of 4053.57 ± 1470.44 ng/mL, and a AUC_{max} of 87706.43 ± 36046.92 hr*ng/mL while CMF1 had a T_{max} of 16.50 ± 9.00 hr, a C_{max} of 2278.72 ± 448.51 ng/mL, and a AUC_{max} of 46968.97 ± 8297.74 hr*ng/mL. Interestingly, while APRF14 showed similar effects to APRF13 relative to CMF1 at Days 1 and 7, this effect was lost by Day 14.

[0239] One explanation for these results is that the cells involved in processing the micelle and chylomicrons containing the micronized aprepitant particles may be intracellularly storing this therapeutic compound and releasing the aprepitant over time. For example, as APRF 13 is processed in the small intestine, the resulting micelles contain a higher concentration of aprepitant due to the fact that a portion exists a micronized particles and not just a solute dissolved the lipid excipients. These micelles are then absorbed into the enterocytes where the high concentration, aprepitant-loaded micelles are either 1) processed into chylomicrons and released into the lymphatic system cells, or 2) stored by the enterocyte for future processing. The high concentration, aprepitant-loaded chylomicrons are subsequently processed by lipocytes, macrophages, and other cell types capable of chylomicron processing and the contents of these chylomicrons, including the aprepitant, are stored by these cells. This creates a distribution of "aprepitant depots" within the enterocytes and cell types capable of chylomicrons processing that enables a continuous release of aprepitant over time. This release establishes a systemic equilibrium aprepitant that results in greater bioavailability due to increased plasma concentration as well as decreased clearance rate of the therapeutic compound. The initial longer T_{max} observed for APRF13 relative to CMF1 is reflective of the time period the cells processing and storing the micelles and chylomicron while the initial increase in C_{max} and AUC_{max} is indicative of a more effective processing of the pharmaceutical composition by the lipid digestive system and transportation of the dissolved portion of the aprepitant by the chylomicron system to the body via the lymphatic system (which also occurs in APRF14). The switch to a shorter T_{max} observed for APRF13 relative to CMF1 is indicative of the establishment of the depot network that is already enabling a continuous release of aprepitant. This continuous depot release in conjunction with additional daily dosing of APRF13 results even further increases in blood absorption and prolonged clearance rates as shown by the increasing values of C_{max} and AUC_{max} over time. These results indicate that a pharmaceutical composition formulated as a 50:50 solid dispersion (APRF13) exhibited significantly better bioavailability relative to the controls and provide a significant increase in the bioavailability of a therapeutic compound contained within.

[0240] Another explanation for the increased bioavailability of the dual-phase formulation of APRF13 relative to either single phase formulations (APRF14 and CMF1) involves the exploitation of two lymphatic uptake mechanisms at the same time which results in more therapeutic compound being absorbed thereby increasing bioavailability. The first uptake mechanism is the use of the enterocyte uptake of aprepitant contained in micelles while the second uptake mechanism employs Peyer's patches to uptake solid aprepitant particles. The use of enterocyte uptake is consistent with the data observed for both APRF13 and APRF14 where absorption is similar although to a lesser extent by APRF14. Peyer's patches are known to be a part of lymphatic uptake mechanisms and evidence has suggested that these structures can uptake therapeutic compounds as solid particles, see Jenkins, et al., *Microparticulate Absorption from the Rat Intestine*, J. Controlled Release 29(3): 339-350 (1994). Thus, the pharmacokinetic profiles observed in this series of experiments suggest that aprepitant is being processed by two separate uptake mechanisms that appear to be more lymphatically driven than portal vein-based uptake (like CMF1).

Example 2 Mebendazole Solid Suspension Formulations

[0241] Experiments were performed to assess whether pharmaceutical compositions comprising mebendazole and formulated as a dual or mixed phase composition comprising a solid particle component having mebendazole present as a solid dispersion within a lipid matrix and a solubilized component having dissolved mebendazole within the lipid matrix could be formulated. In addition, pharmacokinetic and pharmacodynamic experiments of these formulations will be assessed to determine whether these formulations resulted in a higher bioavailability of mebendazole and how this therapeutic compound affects an organism.

[0242] In one series of experiments, three mebendazole pharmaceutical compositions comprising about 0.5 g/mL to 1.0 g/mL mebendazole were formulated according to Table 7 to assess the impact of having 50% of the mebendazole present as a solid dispersion on the bioavailability of this therapeutic compound. For all formulations, mebendazole particles were micronized to produce a smaller mean particle size.

[0243] For MEBF1-MEBF3, mebendazole was added to a solution comprising the one or more fatty acid or the fatty acid and hydrophilic carboxylic acid, and if present cholic acid, heated to 190°C to dissolve the therapeutic compound. MAISINE™ CC was then subsequently added to this melted solution and cooled to 50°C resulting in a solubilized admixture. Note that the temperature is one high enough to dissolve the mebendazole in the heated solution. In a separate container, micronized mebendazole particles were added to a solution comprising GELUCIRE® 43/01 and oleic acid heated to 50°C and stirred to create a dispersion (the solid particle admixture). Note that the temperature is one high enough to melt the lipids but not dissolve the mebendazole in the heated solution. Also note that the type and amount of lipids added to the solid dispersion admixture are ones to achieve a melting temperature of the resulting solid composition of about 30°C to 37°C. The solid particle admixture is then mixed with the solubilized admixture and cooled to room temperature (17°C to 20°C) to solidify into a pharmaceutical composition comprising a) mebendazole, b) one or more glycerolipids, and c) one or more digestion enhancers, wherein the mebendazole comprises a solid particle component having mebendazole present as a solid dispersion

within a lipid matrix including the one or more glycerolipids and a solubilized component having mebendazole dissolved within the lipid matrix including the one or more glycerolipids

Table 7. Mebendazole Dual or Mixed Phase Formulations			
Component	MEBF1	MEBF2	MEBF3
Liquid Admixture			
Mebendazole (solubilized)	3.5%	8.0%	5.9%
MAISINE™ CC	26.2%	74.5%	63.5%
Oleic Acid	57.0%	—	—
Acetic Acid	—	—	21.2%
Steric Acid	11.2%	16.0%	6.4%
Cholic Acid	2.1%	1.6%	3.0%
Solid Dispersion Admixture			
Mebendazole (particles)	7.7%	17.4%	13.1%
GELUCIRE® 43/01	30.8%	23.3%	28.6%
Oleic Acid	61.5%	59.3%	58.2%
Solid 50:50 Composition			
Mebendazole (solubilized)	2.4%	5.5%	4.1%
Mebendazole (dispersed)	2.4%	5.5%	4.1%
MAISINE™ CC	18.0%	51.1%	43.8%
GELUCIRE® 43/01	9.8%	7.3%	8.9%
Oleic Acid	58.4%	18.6%	18.1%
Steric Acid	7.7%	10.9%	4.4%
Acetic Acid	—	—	14.6%
Cholic Acid	1.4%	1.0%	2.0%

Example 3 Curcumin Solid Suspension Formulations

[0244] Experiments were performed to assess whether pharmaceutical compositions comprising curcumin and formulated as a dual or mixed phase composition comprising a solid particle component having curcumin present as a solid dispersion within a lipid matrix and a solubilized component having dissolved curcumin within the lipid matrix could be formulated. In addition, pharmacokinetic and pharmacodynamic experiments of these formulations will be assessed to determine whether these formulations resulted in a higher bioavailability of curcumin and how this therapeutic compound affects an organism.

[0245] In one series of experiments, three curcumin pharmaceutical compositions comprising about 1.0 g/mL curcumin were formulated as shown in Table 8. For all formulations, curcumin was added to a solution comprising all components except for MAISINE™ CC and GELUCIRE® 43/01, heated to 190°C to dissolve the therapeutic compound. MAISINE™ CC was then subsequently added to this melted solution and cooled to 50°C resulting the solubilized admixture. Note that the temperature is one high enough to dissolve the curcumin in the heated solution. In a separate container, micronized curcumin particles were added to a solution comprising GELUCIRE® 43/01 heated to 50°C and stirred to create a dispersion (the solid particle admixture). Note that the temperature is one high enough to melt the lipids but not dissolve the curcumin

in the heated solution. Also note that the type and amount of lipids added to the solid dispersion admixture are ones to achieve a melting temperature of the resulting solid composition of about 30°C to 37°C. The solid particle admixture is then mixed with the solubilized admixture and cooled to room temperature (17°C to 20°C) to solidify into a pharmaceutical composition comprising a) curcumin, b) one or more glycerolipids, and c) one or more digestion enhancers, wherein the curcumin comprise a solid particle component having curcumin present as a solid dispersion within a lipid matrix including the one or more glycerolipids and a solubilized component having curcumin dissolved within the lipid matrix including the one or more glycerolipids

Table 8. Curcumin Dual or Mixed Phase Formulations						
Component	CRCF1	CRCF2	CRC3	CRCF4	CRCF5	CRC6
Mebendazole (solubilized)	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%
Mebendazole (dispersed)	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%
MAISINE™ CC	32.9%	32.8%	32.0%	32.0%	31.8%	32.9%
GELUCIRE® 43/01	32.9%	32.8%	32.0%	32.0%	31.8%	32.9%
Oleic Acid	33.0%	32.8%	32.0%	32.0%	31.8%	33.0%
Conenzyme Q10		0.5%				
Cholic Acid			2.9%	2.8%	2.9%	
Lecithin				0.1%		
Cholesterol					0.6%	
Sodium docusate						0.1%
Component	CRCF7	CRCF8	CRC9			
Mebendazole (solubilized)	0.55%	0.55%	0.55%			
Mebendazole (dispersed)	0.55%	0.55%	0.55%			
MAISINE™ CC	32.9%	31.7%	32.8%			
GELUCIRE® 43/01	32.9%	31.7%	32.8%			
Oleic Acid	33.0%	31.7%	32.8%			
Sodium stearate	0.1%	0.2%				
Cholic Acid		2.9%				
Cholesterol		0.5%				
Lecithin		0.1%				
Sodium docusate		0.1%				
Tris(hydroxymethyl)aminomethane			0.25%			
Propylene glycol			0.25%			

Example 4 Clinical Studies Demonstrate Efficacy of Therapeutic Compound

[0246] In the preclinical pharmacokinetic studies conducted, formulations had the best therapeutic compound exposure in blood based on pharmacokinetic data, pharmacodynamic data, or both will be selected to be developed for human clinical pharmacokinetic and pharmacodynamic studies. As the preclinical studies used a dose strength appropriate for the animal model, the appropriate dose for human clinical studies will be selected based on at least the following two factors. First, since the mean weight of an animal is significantly lower than the mean weight of a human (about 75 kg), a higher dose strength will be required for the clinical studies due to the much higher weight of an average human. Additionally, if the

therapeutic compound is already in use for humans, then the dose strength used in the clinical studies will bracket the unit dose strengths already in use. Consequently, accounting for the weight differential and to bracket these known oral doses, appropriate unit dose strengths of the therapeutic compound can be selected, and pharmaceutical compositions comprising the therapeutic compound prepared to assess human exposure for the therapeutic compound in subsequent clinical studies.

[0247] Phase I clinical studies will be conducted to evaluate the safety and systemic availability of a disclosed pharmaceutical composition comprising the therapeutic compound compared to a standard therapeutic compound formulation (STND) as the comparator. In a first clinical study, approximately 32 healthy volunteers will be recruited and equally divided into four groups. The first group will receive a single dose of the disclosed pharmaceutical composition comprising the therapeutic compound administered in an amount below the anticipated efficacious dose; the second group will receive a single dose of the disclosed pharmaceutical composition comprising the therapeutic compound administered in an amount at the anticipated efficacious dose; the third group will receive a single dose of the disclosed pharmaceutical composition comprising the therapeutic compound administered in an amount above the anticipated efficacious dose; and the fourth group will receive a single dose of STND (or placebo) administered in an effective amount currently approved by a regulatory agency. The pharmacokinetic results of this first clinical study are expected to demonstrate that administration of the disclosed pharmaceutical composition comprising the therapeutic compound is safe.

[0248] In a second Phase I clinical study, approximately 32 healthy volunteers will be recruited and equally divided into five groups. The first group will receive multiple doses of the disclosed pharmaceutical composition comprising the therapeutic compound administered at one dose level; the second group will receive multiple doses of the disclosed pharmaceutical composition comprising the therapeutic compound administered at a second dose level ; the third group will receive multiple doses of the disclosed pharmaceutical composition comprising the therapeutic compound administered at a third dose level; the fourth group will receive multiple doses of STND (or placebo) administered at an effective dose currently approved by a regulatory agency. The results of this second clinical study are expected to demonstrate that administration of the disclosed pharmaceutical composition comprising the therapeutic compound is safe.

[0249] Phase II clinical studies will be conducted to demonstrate dose finding, safety, and the efficacy of the disclosed pharmaceutical composition comprising the therapeutic compound to protect patients. In this double-blind study, 120 to 150 patients will be recruited and equally divided into three groups. The first group will receive a dose level of the disclosed pharmaceutical composition comprising the therapeutic compound administered in an amount determined to be an efficacious dose in the Phase I clinical studies; the second group will receive two doses of the disclosed pharmaceutical composition comprising the therapeutic compound administered in an amount determined to be an efficacious dose in the Phase I clinical studies; and the third group will receive a single dose of STND/placebo administered in an effective amount currently approved by a regulatory agency. Patients will be followed up for the appropriate amount of time. The results of this Phase II clinical study are expected to demonstrate that administration of the

disclosed pharmaceutical composition comprising the therapeutic compound is safe and provide some evidence of effectiveness.

[0250] Phase III clinical studies will be conducted to demonstrate safety and efficacy of the disclosed pharmaceutical composition comprising the therapeutic compound to protect patients. In this double-blind study, approximately 300 patients will be recruited and equally divided into two groups. The first group will receive a dose level of the disclosed pharmaceutical composition comprising the therapeutic compound administered at an amount determined to be an efficacious dose in the Phase II clinical study; the second group will receive a dose level of STND/placebo administered in an effective amount currently approved by a regulatory agency. Patients will be followed for 12 weeks post-surgery. The results of this Phase III clinical study are expected to demonstrate that administration of the disclosed pharmaceutical composition comprising the therapeutic compound is safe and effective.

[0251] In closing, foregoing descriptions of embodiments of the present invention have been presented for the purposes of illustration and description. It is to be understood that, although aspects of the present invention are highlighted by referring to specific embodiments, one skilled in the art will readily appreciate that these described embodiments are only illustrative of the principles comprising the present invention and such examples are not limiting thereto. As such, the specific embodiments are not intended to be exhaustive or to limit the invention to the precise forms disclosed. The use of any and all examples or exemplary language (e.g., "such as") provided herein is intended merely to better illuminate the present invention and does not pose a limitation on the scope of the invention otherwise claimed. No language in the present specification should be construed as indicating any non-claimed element essential to the practice of the invention.

[0252] In addition, groupings of alternative embodiments, elements, steps and/or limitations of the present invention are not to be construed as limitations. Each such grouping may be referred to and claimed individually or in any combination with other groupings disclosed herein. It is anticipated that one or more alternative embodiments, elements, steps and/or limitations of a grouping may be included in, or deleted from, the grouping for reasons of convenience and/or patentability. When any such inclusion or deletion occurs, the specification is deemed to contain the grouping as modified, thus fulfilling the written description of all Markush groups used in the appended claims. In addition, all methods described herein can be performed in any suitable order unless otherwise indicated herein or otherwise clearly contradicted by context. Therefore, it should be understood that embodiments of the disclosed subject matter are in no way limited to a particular element, compound, composition, component, article, apparatus, methodology, use, protocol, step, and/or limitation described herein, unless expressly stated as such.

[0253] While aspects of the invention have been described with reference to at least one exemplary embodiment, it is to be clearly understood by those skilled in the art that the invention is not limited thereto. Furthermore, those of ordinary skill in the art will recognize that certain changes, modifications, permutations, alterations, additions, subtractions, and sub-combinations thereof can be made in accordance with the teachings herein without departing from the spirit of the present invention. It is intended

that the following appended claims and claims hereafter introduced are interpreted to include all such changes, modifications, permutations, alterations, additions, subtractions, and sub-combinations as are within their true spirit and scope. Accordingly, the scope of the present invention is not to be limited to that precisely as shown and described by this specification. Rather, the scope of the invention is to be interpreted only in conjunction with the appended claims and it is made clear, here, that the inventor(s) believe that the claimed subject matter is the invention.

[0254] Certain embodiments of the present invention are described herein, including the best mode known to the inventors for conducting the invention. Of course, variations on these described embodiments will become apparent to those of ordinary skill in the art upon reading the foregoing description. The inventor expects skilled artisans to employ such variations as appropriate, and the inventors intend for the present invention to be practiced otherwise than specifically described herein. Accordingly, this invention includes all modifications and equivalents of the subject matter recited in the claims appended hereto as permitted by applicable law. Moreover, any combination of the above-described embodiments in all possible variations thereof is encompassed by the invention unless otherwise indicated herein or otherwise clearly contradicted by context.

[0255] The words, language, and terminology used in this specification is for the purpose of describing particular embodiments, elements, steps and/or limitations only and is not intended to limit the scope of the present invention, which is defined solely by the claims. In addition, such words, language, and terminology are to be understood not only in the sense of their commonly defined meanings, but to include by special definition in this specification structure, material or acts beyond the scope of the commonly defined meanings. Thus, if an element, step, or limitation can be understood in the context of this specification as including more than one meaning, then its use in a claim must be understood as being generic to all possible meanings supported by the specification and by the word itself.

[0256] The definitions and meanings of the elements, steps or limitations recited in a claim set forth below are, therefore, defined in this specification to include not only the combination of elements, steps or limitations which are literally set forth, but all equivalent structure, material or acts for performing substantially the same function in substantially the same way to obtain substantially the same result. In this sense it is therefore contemplated that an equivalent substitution of two or more elements, steps and/or limitations may be made for any one of the elements, steps or limitations in a claim set forth below or that a single element, step, or limitation may be substituted for two or more elements, steps and/or limitations in such a claim. Although elements, steps or limitations may be described above as acting in certain combinations and even initially claimed as such, it is to be expressly understood that one or more elements, steps and/or limitations from a claimed combination can in some cases be excised from the combination and that the claimed combination may be directed to a sub-combination or variation of a sub-combination. As such, notwithstanding the fact that the elements, steps and/or limitations of a claim are set forth below in a certain combination, it must be expressly understood that the invention includes other combinations of fewer, more, or different elements, steps and/or limitations, which are disclosed in above combination even when not initially claimed in such combinations. Furthermore, insubstantial changes from the claimed

subject matter as viewed by a person with ordinary skill in the art, now known or later devised, are expressly contemplated as being equivalently within the scope of the claims. Therefore, obvious substitutions now or later known to one with ordinary skill in the art are defined to be within the scope of the defined elements. Accordingly, the claims are thus to be understood to include what is specifically illustrated and described above, what is conceptually equivalent, what can be obviously substituted and also what essentially incorporates the essential idea of the invention.

[0257] Unless otherwise indicated, all numbers expressing a characteristic, item, quantity, parameter, property, term, and so forth used in the present specification and claims are to be understood as being modified in all instances by the term “about.” As used herein, the term “about” means that the characteristic, item, quantity, parameter, property, or term so qualified encompasses a range of plus or minus ten percent above and below the value of the stated characteristic, item, quantity, parameter, property, or term. Similarly, as used herein, unless indicated to the contrary, the term “substantially” is a term of degree intended to indicate an approximation of the characteristic, item, quantity, parameter, property, or term so qualified, encompassing a range that can be understood and construed by those of ordinary skill in the art. Accordingly, unless indicated to the contrary, the numerical parameters set forth in the specification and attached claims are approximations that may vary. At the very least, and not as an attempt to limit the application of the doctrine of equivalents to the scope of the claims, each numerical indication should at least be construed in light of the number of reported significant digits and by applying ordinary rounding techniques.

[0258] Notwithstanding that the numerical ranges and values setting forth the broad scope of the invention are approximations, the numerical ranges and values set forth in the specific examples are reported as precisely as possible. Any numerical range or value, however, inherently contains certain errors necessarily resulting from the standard deviation found in their respective testing measurements. Unless the context dictates the contrary, all ranges set forth herein should be interpreted as being inclusive of their endpoints and open-ended ranges should be interpreted to include only commercially practical values. Recitation of numerical ranges of values herein is merely intended to serve as a shorthand method of referring individually to each separate numerical value falling within the range. Unless otherwise indicated herein, each individual value of a numerical range is incorporated into the present specification as if it were individually recited herein. Similarly, all lists of values should be considered as inclusive of intermediate values unless the context indicates the contrary.

[0259] Use of the terms “may” or “can” in reference to an embodiment or aspect of an embodiment also carries with it the alternative meaning of “may not” or “cannot.” As such, if the present specification discloses that an embodiment or an aspect of an embodiment may be or can be included as part of the inventive subject matter, then the negative limitation or exclusionary proviso is also explicitly meant, meaning that an embodiment or an aspect of an embodiment may not be or cannot be included as part of the inventive subject matter. In a comparable manner, use of the term “optionally” in reference to an embodiment or aspect of an embodiment means that such embodiment or aspect of the embodiment may be included as part of the inventive subject matter or may not be included as part of the inventive subject

matter. Whether such a negative limitation or exclusionary proviso applies will be based on whether the negative limitation or exclusionary proviso is recited in the claimed subject matter.

[0260] The terms “a,” “an,” “the” and similar references used in the context of describing the present invention (especially in the context of the following claims) are to be construed to cover both the singular and the plural, unless otherwise indicated herein or clearly contradicted by context. Further, ordinal indicators – such as, e.g., “first,” “second,” “third,” etc. – for identified elements are used to distinguish between the elements, and do not indicate or imply a required or limited number of such elements, and do not indicate a particular position or order of such elements unless otherwise specifically stated.

[0261] When used in the claims, whether as filed or added per amendment, the open-ended transitional term “comprising”, variations thereof such as, e.g., “comprise” and “comprises”, and equivalent open-ended transitional phrases thereof like “including”, “containing” and “having”, encompass all the expressly recited elements, limitations, steps, integers, and/or features alone or in combination with unrecited subject matter; the named elements, limitations, steps, integers, and/or features are essential, but other unnamed elements, limitations, steps, integers, and/or features may be added and still form a construct within the scope of the claim. Specific embodiments disclosed herein may be further limited in the claims using the closed-ended transitional phrases “consisting of” or “consisting essentially of” (or variations thereof such as, e.g., “consist of”, “consists of”, “consist essentially of”, and “consists essentially of”) in lieu of or as an amendment for “comprising.” When used in the claims, whether as filed or added per amendment, the closed-ended transitional phrase “consisting of” excludes any element, limitation, step, integer, or feature not expressly recited in the claims. The closed-ended transitional phrase “consisting essentially of” limits the scope of a claim to the expressly recited elements, limitations, steps, integers, and/or features and any other elements, limitations, steps, integers, and/or features that do not materially affect the basic and novel characteristic(s) of the claimed subject matter. Thus, the meaning of the open-ended transitional phrase “comprising” is being defined as encompassing all the specifically recited elements, limitations, steps and/or features as well as any optional, additional unspecified ones. The meaning of the closed-ended transitional phrase “consisting of” is being defined as only including those elements, limitations, steps, integers, and/or features specifically recited in the claim, whereas the meaning of the closed-ended transitional phrase “consisting essentially of” is being defined as only including those elements, limitations, steps, integers, and/or features specifically recited in the claim and those elements, limitations, steps, integers, and/or features that do not materially affect the basic and novel characteristic(s) of the claimed subject matter. Therefore, the open-ended transitional phrase “comprising” (and equivalent open-ended transitional phrases thereof) includes within its meaning, as a limiting case, claimed subject matter specified by the closed-ended transitional phrases “consisting of” or “consisting essentially of.” As such, the embodiments described herein or so claimed with the phrase “comprising” expressly and unambiguously provide description, enablement, and support for the phrases “consisting essentially of” and “consisting of.”

[0262] It should be apparent to those skilled in the art that many more modifications besides those already described are possible without departing from the inventive concepts herein. The inventive subject matter, therefore, is not to be restricted except in the spirit of the appended claims. Moreover, in interpreting

both the specification and the claims, all terms should be interpreted in the broadest possible manner consistent with the context. In particular, the terms “comprises” and “comprising” should be interpreted as referring to elements, components, or steps in a non-exclusive manner, indicating that the referenced elements, components, or steps may be present, or utilized, or combined with other elements, components, or steps that are not expressly referenced. Where the specification claims refer to at least one of something selected from the group consisting of A, B, C and N, the text should be interpreted as requiring only one element from the group, not A plus N, or B plus N, etc.

[0263] Any claims intended to be treated under 35 U.S.C. §112(f) will begin with the words “means for,” but use of the term “for” in any other context is not intended to invoke treatment under 35 U.S.C. §112(f). Accordingly, Applicant reserves the right to pursue additional claims after filing this application, in either this application or in a continuing application.

[0264] It should be understood that the methods and the order in which the respective elements of each method are performed are purely exemplary. Depending on the implementation, they may be performed in any order or in parallel, unless indicated otherwise in the present disclosure.

[0265] Finally, all patents, patent publications, and other references cited and identified in the present specification are individually and expressly incorporated herein by reference in their entirety to the same extent as if each individual publication or patent application were specifically and individually indicated to be incorporated by reference. These publications are provided solely for their disclosure prior to the filing date of the present application. The reference to any prior art in this specification is not, and should not be taken as, an acknowledgement or any form of suggestion that the prior art forms part of the common general knowledge from any country. In addition, where a definition or use of a term in an incorporated reference is inconsistent or contrary to the definition of that term provided herein, the definition of that term provided herein applies and the definition of that term in the reference does not apply. Lastly, nothing in this regard is or should be construed as an admission that the inventors are not entitled to antedate such disclosure by virtue of prior invention or for any other reason. All statements as to the date or representation as to the contents of these documents are based on the information available to the applicant and do not constitute any admission as to the correctness of the dates or contents of these documents.

CLAIMS

1. A pharmaceutical composition, the pharmaceutical composition comprising a) one or more therapeutic compounds, the one or more therapeutic compounds comprising a solid particle component, b) one or more glycerolipids, and c) one or more digestion enhancers, wherein the solid particle component comprises the one or more therapeutic compounds present as a solid dispersion within a lipid matrix including the one or more glycerolipids.
2. The pharmaceutical composition of claim 1, wherein between 50% and 100% of the one or more therapeutic compounds are present in solid particle component.
3. The pharmaceutical composition of claim 1 or 2, wherein the one or more therapeutic compounds further comprise a solubilized component having the one or more therapeutic compounds dissolved within the lipid matrix including the one or more glycerolipids.
4. The pharmaceutical composition of claim 3, wherein a ratio of the solid particle component to the solubilized component of the one or more therapeutic compounds is about 5:95, about 10:90, about 15:85, about 20:80, about 25:75, about 30:70, about 35:65, about 40:60, about 45:55, about 50:50, about 55:45, about 60:40, about 65:35, about 70:30, about 75:25, about 80:20, about 85:15, about 90:10, or about 95:5; or at least 5:95, at least 10:90, at least 15:85, at least 20:80, at least 25:75, at least 30:70, at least 35:65, at least 40:60, at least 45:55, at least 50:50, at least 55:45, at least 60:40, at least 65:35, at least 70:30, at least 75:25, at least 80:20, at least 85:15, at least 90:10, or at least 95:5 and/or at most 5:95, at most 10:90, at most 15:85, at most 20:80, at most 25:75, at most 30:70, at most 35:65, at most 40:60, at most 45:55, at most 50:50, at most 55:45, at most 60:40, at most 65:35, at most 70:30, at most 75:25, at most 80:20, at most 85:15, at most 90:10, or at most 95:5; or about 5:95 to about 10:90, about 5:95 to about 15:85, about 5:95 to about 20:80, about 5:95 to about 25:75, about 5:95 to about 30:60, about 5:95 to about 35:65, about 5:95 to about 40:60, about 5:95 to about 45:55, about 5:95 to about 50:50, about 5:95 to about 55:45, about 5:95 to about 60:40, about 5:95 to about 65:35, about 5:95 to about 70:30, about 5:95 to about 75:25, about 5:95 to about 80:20, about 5:95 to about 85:15, about 5:95 to about 90:10, about 5:95 to about 95:5, about 10:90 to about 15:85, about 10:90 to about 20:80, about 10:90 to about 25:75, about 10:90 to about 30:60, about 10:90 to about 35:65, about 10:90 to about 40:60, about 10:90 to about 45:55, about 10:90 to about 50:50, about 10:90 to about 55:45, about 10:90 to about 60:40, about 10:90 to about 65:35, about 10:90 to about 70:30, about 10:90 to about 75:25, about 10:90 to about 80:20, about 10:90 to about 85:15, about 10:90 to about 90:10, about 10:90 to about 95:5, about 15:85 to about 20:80, about 15:85 to about 25:75, about 15:85 to about 30:60, about 15:85 to about 35:65, about 15:85 to about 40:60, about 15:85 to about 45:55, about 15:85 to about 50:50, about 15:85 to about 55:45, about 15:85 to about 60:40, about 15:85 to about 65:35, about 15:85 to about 70:30, about 15:85 to about 75:25, about 15:85 to about 80:20, about 15:85 to about 85:15, about 15:85 to about 90:10, about 15:85 to about 95:5, about 20:80 to about 25:75, about 20:80 to about 30:60, about 20:80 to about 35:65, about 20:80 to about 40:60, about 20:80 to about 45:55, about 20:80 to about 50:50, about 20:80 to about 55:45, about 20:80 to about 60:40, about 20:80 to about 65:35, about 20:80 to about 70:30, about 20:80 to about 75:25, about 20:80 to about 80:20, about 20:80 to about 85:15, about 20:80 to about 90:10, about 20:80 to about 95:5, about 25:75 to about 30:60, about 25:75 to about 35:65, about 25:75 to about 40:60, about 25:75

to about 45:55, about 25:75 to about 50:50, about 25:75 to about 55:45, about 25:75 to about 60:40, about 25:75 to about 65:35, about 25:75 to about 70:30, about 25:75 to about 75:25, about 25:75 to about 80:20, about 25:75 to about 85:15, about 25:75 to about 90:10, about 25:75 to about 95:5, about 30:70 to about 35:65, about 30:70 to about 40:60, about 30:70 to about 45:55, about 30:70 to about 50:50, about 30:70 to about 55:45, about 30:70 to about 60:40, about 30:70 to about 65:35, about 30:70 to about 70:30, about 30:70 to about 75:25, about 30:70 to about 80:20, about 30:70 to about 85:15, about 30:70 to about 90:10, about 30:70 to about 95:5, about 35:65 to about 40:60, about 35:65 to about 45:55, about 35:65 to about 50:50, about 35:65 to about 55:45, about 35:65 to about 60:40, about 35:65 to about 65:35, about 35:65 to about 70:30, about 35:65 to about 75:25, about 35:65 to about 80:20, about 35:65 to about 85:15, about 35:65 to about 90:10, about 35:65 to about 95:5, about 40:60 to about 45:55, about 40:60 to about 50:50, about 40:60 to about 55:45, about 40:60 to about 60:40, about 40:60 to about 65:35, about 40:60 to about 70:30, about 40:60 to about 75:25, about 40:60 to about 80:20, about 40:60 to about 85:15, about 40:60 to about 90:10, about 40:60 to about 95:5, about 45:55 to about 50:50, about 45:55 to about 55:45, about 45:55 to about 60:40, about 45:55 to about 65:35, about 45:55 to about 70:30, about 45:55 to about 75:25, about 45:55 to about 80:20, about 45:55 to about 85:15, about 45:55 to about 90:10, about 45:55 to about 95:5, about 50:50 to about 55:45, about 50:50 to about 60:40, about 50:50 to about 65:35, about 50:50 to about 70:30, about 50:50 to about 75:25, about 50:50 to about 80:20, about 50:50 to about 85:15, about 50:50 to about 90:10, about 50:50 to about 95:5, about 55:45 to about 60:40, about 55:45 to about 65:35, about 55:45 to about 70:30, about 55:45 to about 75:25, about 55:45 to about 80:20, about 55:45 to about 85:15, about 55:45 to about 90:10, about 55:45 to about 95:5, about 60:40 to about 65:35, about 60:40 to about 70:30, about 60:40 to about 75:25, about 60:40 to about 80:20, about 60:40 to about 85:15, about 60:40 to about 90:10, about 60:40 to about 95:5, about 65:35 to about 70:30, about 65:35 to about 75:25, about 65:35 to about 80:20, about 65:35 to about 85:15, about 65:35 to about 90:10, about 65:35 to about 95:5, about 70:30 to about 75:25, about 70:30 to about 80:20, about 70:30 to about 85:15, about 70:30 to about 90:10, about 70:30 to about 95:5, about 75:25 to about 80:20, about 75:25 to about 85:15, about 75:25 to about 90:10, about 75:25 to about 95:5, about 80:20 to about 85:15, about 80:20 to about 90:10, about 80:20 to about 95:5, about 85:15 to about 90:10, about 85:15 to about 95:5, or about 90:10 to about 95:5, preferably the ratio of a solid particle component to a solubilized component of one or more therapeutic compounds is about 60:40 to about 40:60, and more preferably 55:45 to about 45:55.

5. The pharmaceutical composition of any one of claims 1-4, wherein the one or more therapeutic compounds present in the solid particle component are in an amount of about 0.05% to about 1%, about 0.05% to about 2.5%, about 0.05% to about 5%, about 0.05% to about 7.5%, about 0.05% to about 10%, about 0.05% to about 12.5%, about 0.05% to about 15%, about 0.05% to about 17.5%, about 0.05% to about 20%, about 0.05% to about 22.5%, about 0.05% to about 25%, about 0.05% to about 30%, about 0.05% to about 40%, about 0.05% to about 50%, about 0.1% to about 1%, about 0.1% to about 2.5%, about 0.1% to about 5%, about 0.1% to about 7.5%, about 0.1% to about 10%, about 0.1% to about 12.5%, about 0.1% to about 15%, about 0.1% to about 17.5%, about 0.1% to about 20%, about 0.1% to about 22.5%, about 0.1% to about 25%, about 0.1% to about 30%, about 0.1% to about 40%, about 0.1% to about 50%, about 1% to about 2.5%, about 1% to about 5%, about

1% to about 7.5%, about 1% to about 10%, about 1% to about 12.5%, about 1% to about 15%, about 1% to about 17.5%, about 1% to about 20%, about 1% to about 22.5%, about 1% to about 25%, about 1% to about 30%, about 1% to about 40%, about 1% to about 50%, about 5% to about 10%, about 5% to about 20%, about 5% to about 30%, about 5% to about 40%, about 5% to about 50%, about 10% to about 20%, about 10% to about 30%, about 10% to about 40%, about 10% to about 50%, about 20% to about 30%, about 20% to about 40%, about 20% to about 50%, about 30% to about 40%, about 30% to about 50%, or about 40% to about 50% by weight.

6. The pharmaceutical composition of any one of claims 1-5, wherein the one or more therapeutic compounds present in the solid particle component are in an amount of about 10 mg/mL to about 25 mg/mL, about 10 mg/mL to about 50 mg/mL, about 10 mg/mL to about 75 mg/mL, about 10 mg/mL to about 100 mg/mL, about 10 mg/mL to about 125 mg/mL, about 10 mg/mL to about 150 mg/mL, about 10 mg/mL to about 200 mg/mL, about 10 mg/mL to about 250 mg/mL, about 10 mg/mL to about 300 mg/mL, about 25 mg/mL to about 50 mg/mL, about 25 mg/mL to about 75 mg/mL, about 25 mg/mL to about 100 mg/mL, about 25 mg/mL to about 125 mg/mL, about 25 mg/mL to about 150 mg/mL, about 25 mg/mL to about 200 mg/mL, about 25 mg/mL to about 250 mg/mL, about 25 mg/mL to about 300 mg/mL, about 50 mg/mL to about 100 mg/mL, about 50 mg/mL to about 150 mg/mL, about 50 mg/mL to about 200 mg/mL, about 50 mg/mL to about 250 mg/mL, about 50 mg/mL to about 300 mg/mL, about 75 mg/mL to about 100 mg/mL, about 75 mg/mL to about 150 mg/mL, about 75 mg/mL to about 200 mg/mL, about 75 mg/mL to about 250 mg/mL, about 75 mg/mL to about 300 mg/mL, about 100 mg/mL to about 150 mg/mL, about 100 mg/mL to about 200 mg/mL, about 100 mg/mL to about 250 mg/mL, about 100 mg/mL to about 300 mg/mL, about 125 mg/mL to about 150 mg/mL, about 125 mg/mL to about 200 mg/mL, about 125 mg/mL to about 250 mg/mL, about 125 mg/mL to about 300 mg/mL, about 150 mg/mL to about 200 mg/mL, about 150 mg/mL to about 250 mg/mL, about 150 mg/mL to about 300 mg/mL, about 200 mg/mL to about 250 mg/mL, about 200 mg/mL to about 300 mg/mL, or about 250 mg/mL to about 300 mg/mL.
7. The pharmaceutical composition of any one of claims 3-6, wherein the one or more therapeutic compounds present in the solubilized component are in an amount of about 0.05% to about 1%, about 0.05% to about 2.5%, about 0.05% to about 5%, about 0.05% to about 7.5%, about 0.05% to about 10%, about 0.05% to about 12.5%, about 0.05% to about 15%, about 0.05% to about 17.5%, about 0.05% to about 20%, about 0.05% to about 22.5%, about 0.05% to about 25%, about 0.05% to about 30%, about 0.05% to about 40%, about 0.05% to about 50%, about 0.1% to about 1%, about 0.1% to about 2.5%, about 0.1% to about 5%, about 0.1% to about 7.5%, about 0.1% to about 10%, about 0.1% to about 12.5%, about 0.1% to about 15%, about 0.1% to about 17.5%, about 0.1% to about 20%, about 0.1% to about 22.5%, about 0.1% to about 25%, about 0.1% to about 30%, about 0.1% to about 40%, about 0.1% to about 50%, about 1% to about 2.5%, about 1% to about 5%, about 1% to about 7.5%, about 1% to about 10%, about 1% to about 12.5%, about 1% to about 15%, about 1% to about 17.5%, about 1% to about 20%, about 1% to about 22.5%, about 1% to about 25%, about 1% to about 30%, about 1% to about 40%, about 1% to about 50%, about 5% to about 10%, about 5% to about 20%, about 5% to about 30%, about 5% to about 40%, about 5% to about 50%, about 10% to about 20%, about 10% to about 30%, about 10% to about 40%, about 10% to about 50%, about 20% to about

30%, about 20% to about 40%, about 20% to about 50%, about 30% to about 40%, about 30% to about 50%, or about 40% to about 50% by weight.

8. The pharmaceutical composition of any one of claims 3-7, wherein the one or more therapeutic compounds present in the solubilized component are in an amount of about 10 mg/mL to about 25 mg/mL, about 10 mg/mL to about 50 mg/mL, about 10 mg/mL to about 75 mg/mL, about 10 mg/mL to about 100 mg/mL, about 10 mg/mL to about 125 mg/mL, about 10 mg/mL to about 150 mg/mL, about 10 mg/mL to about 200 mg/mL, about 10 mg/mL to about 250 mg/mL, about 10 mg/mL to about 300 mg/mL, about 25 mg/mL to about 50 mg/mL, about 25 mg/mL to about 75 mg/mL, about 25 mg/mL to about 100 mg/mL, about 25 mg/mL to about 125 mg/mL, about 25 mg/mL to about 150 mg/mL, about 25 mg/mL to about 200 mg/mL, about 25 mg/mL to about 250 mg/mL, about 25 mg/mL to about 300 mg/mL, about 50 mg/mL to about 100 mg/mL, about 50 mg/mL to about 150 mg/mL, about 50 mg/mL to about 200 mg/mL, about 50 mg/mL to about 250 mg/mL, about 50 mg/mL to about 300 mg/mL, about 75 mg/mL to about 100 mg/mL, about 75 mg/mL to about 150 mg/mL, about 75 mg/mL to about 200 mg/mL, about 75 mg/mL to about 250 mg/mL, about 75 mg/mL to about 300 mg/mL, about 100 mg/mL to about 150 mg/mL, about 100 mg/mL to about 200 mg/mL, about 100 mg/mL to about 250 mg/mL, about 100 mg/mL to about 300 mg/mL, about 125 mg/mL to about 150 mg/mL, about 125 mg/mL to about 200 mg/mL, about 125 mg/mL to about 250 mg/mL, about 125 mg/mL to about 300 mg/mL, about 150 mg/mL to about 200 mg/mL, about 150 mg/mL to about 250 mg/mL, about 150 mg/mL to about 300 mg/mL, about 200 mg/mL to about 250 mg/mL, about 200 mg/mL to about 300 mg/mL, or about 250 mg/mL to about 300 mg/mL.
9. The pharmaceutical composition of any one of claims 1-8, wherein the one or more glycerolipids are in an amount of at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, at least 75% by weight, at least 80% by weight, at least 85% by weight, at least 90% by weight, or at least 95% by weight and/or at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, at most 75% by weight, at most 80% by weight, at most 85% by weight, at most 90% by weight, or at most 95% by weight or between about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 40% to about 65%, about 40% to about 70%, about 40% to about 75%, about 40% to about 80%, about 40% to about 85%, about 40% to about 90%, about 40% to about 95%, about 45% to about 55%, about 45% to about 60%, about 45% to about 65%, about 45% to about 70%, about 45% to about 75%, about 45% to about 80%, about 45% to about 85%, about 45% to about 90%, about 45% to about 95%, about 50% to about 55%, about 50% to about 60%, about 50% to about 65%, about 50% to about 70%, about 50% to about 75%, about 50% to about 80%, about 50% to about 85%, about 50% to about 90%, about 50% to about 95%, about 55% to about 60%, about 55% to about 65%, about 55% to about 70%, about 55% to about 75%, about 55% to about 80%, about 55% to about 85%, about 55% to about 90%, about 55% to about 95%, about 60% to about 65%, about 60% to about 70%, about 60% to about 75%, about 60% to about 80%, about 60% to about 85%, about 60% to about 90%, about 60% to about 95%, about 65% to about 70%, about 65% to about 75%, about 65% to about 80%, about 65% to about 85%, about 65% to about 90%, about 65% to about 95%, about 70% to about 75%, about 70% to about 80%, about 70% to about 85%, about 70% to about 90%, about 70% to about 95%, about 75% to about 80%, about 75% to about 85%, about

75% to about 90%, about 75% to about 95%, about 80% to about 85%, about 80% to about 90%, about 80% to about 95%, about 85% to about 90%, about 85% to about 95%, or about 90% to about 95% by weight.

10. The pharmaceutical composition of any one of claims 1-9, wherein the one or more glycerolipids comprises one or more hard fats and one or more liquid fats.
11. The pharmaceutical composition of claim 10, wherein the one or more hard fats include one or more triglycerides.
12. The pharmaceutical composition of claim 11, wherein the one or more triglycerides include a mixture of saturated C₁₀-C₁₈ triglycerides, a mixture of saturated C₁₀-C₂₀ triglycerides, a mixture of saturated C₁₀-C₂₂ triglycerides, a mixture of saturated C₁₀-C₂₄ triglycerides, a mixture of saturated C₁₂-C₁₈ triglycerides, a mixture of saturated C₁₂-C₂₀ triglycerides, a mixture of saturated C₁₂-C₂₂ triglycerides, a mixture of saturated C₁₂-C₂₄ triglycerides, a mixture of saturated C₁₄-C₁₈ triglycerides, a mixture of saturated C₁₄-C₂₀ triglycerides, a mixture of saturated C₁₄-C₂₂ triglycerides, a mixture of saturated C₁₄-C₂₄ triglycerides, a mixture of saturated C₁₆-C₁₈ triglycerides, a mixture of saturated C₁₆-C₂₀ triglycerides, a mixture of saturated C₁₆-C₂₂ triglycerides, a mixture of saturated C₁₆-C₂₄ triglycerides, a mixture of saturated C₁₈-C₂₀ triglycerides, a mixture of saturated C₁₈-C₂₂ triglycerides, a mixture of saturated C₁₈-C₂₄ triglycerides, a mixture of saturated C₂₀-C₂₂ triglycerides, or a mixture of saturated C₂₂-C₂₄ triglycerides.
13. The pharmaceutical composition of claim 11, wherein the one or more triglycerides include a mixture of unsaturated C₁₀-C₁₈ triglycerides, a mixture of unsaturated C₁₀-C₂₀ triglycerides, a mixture of unsaturated C₁₀-C₂₂ triglycerides, a mixture of unsaturated C₁₀-C₂₄ triglycerides, a mixture of unsaturated C₁₂-C₁₈ triglycerides, a mixture of unsaturated C₁₂-C₂₀ triglycerides, a mixture of unsaturated C₁₂-C₂₂ triglycerides, a mixture of unsaturated C₁₂-C₂₄ triglycerides, a mixture of unsaturated C₁₄-C₁₈ triglycerides, a mixture of unsaturated C₁₄-C₂₀ triglycerides, a mixture of unsaturated C₁₄-C₂₂ triglycerides, a mixture of unsaturated C₁₄-C₂₄ triglycerides, a mixture of unsaturated C₁₆-C₁₈ triglycerides, a mixture of unsaturated C₁₆-C₂₀ triglycerides, a mixture of unsaturated C₁₆-C₂₂ triglycerides, a mixture of unsaturated C₁₆-C₂₄ triglycerides, a mixture of unsaturated C₁₈-C₂₀ triglycerides, a mixture of unsaturated C₁₈-C₂₂ triglycerides, a mixture of unsaturated C₁₈-C₂₄ triglycerides, a mixture of unsaturated C₂₀-C₂₂ triglycerides, or a mixture of unsaturated C₂₂-C₂₄ triglycerides.
14. The pharmaceutical composition of claim 11, wherein the one or more triglycerides include a mixture of saturated and unsaturated C₁₀-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ triglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ triglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ triglycerides.

C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ triglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ triglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ triglycerides.

15. The pharmaceutical composition of any one of claims 10-14, wherein the one or more hard fats are in an amount of at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, and/or at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, or between about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 50% to about 55%, about 50% to about 60%, about 55% to about 60% by weight.
16. The pharmaceutical composition of any one of claims 11-15, wherein the one or more liquid fats include one or more partially hydrolyzed glycerolipids, one or more monoglycerides, or a combination thereof.
17. The pharmaceutical composition of claim 16, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of mono-, di- and triglycerides.
18. The pharmaceutical composition of claim 16 or 17, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of unsaturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of unsaturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of unsaturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of unsaturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of unsaturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈ triglycerides, a mixture of unsaturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a mixture of unsaturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of unsaturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of unsaturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of unsaturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of unsaturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of unsaturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides.

triglycerides, a mixture of unsaturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of unsaturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of unsaturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of unsaturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of unsaturated C₁₈-C₂₀ monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of unsaturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of unsaturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of unsaturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of unsaturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.

19. The pharmaceutical composition of claim 16 or 17, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of saturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of saturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of saturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of saturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of saturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈ triglycerides, a mixture of saturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a mixture of saturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of saturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of saturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of saturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of saturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of saturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides, a mixture of saturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of saturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of saturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of saturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of saturated C₁₈-C₂₀ monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of saturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of saturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of saturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of saturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.
20. The pharmaceutical composition of claim 16 or 17, wherein the one or more partially hydrolyzed glycerolipids comprise a mixture of saturated and unsaturated C₁₀-C₁₈ monoglycerides, C₁₀-C₁₈ diglycerides, and C₁₀-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ monoglycerides, C₁₀-C₂₀ diglycerides, and C₁₀-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ monoglycerides, C₁₀-C₂₂ diglycerides, and C₁₀-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ monoglycerides, C₁₀-C₂₄ diglycerides, and C₁₀-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ monoglycerides, C₁₂-C₁₈ diglycerides, and C₁₂-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ monoglycerides, C₁₂-C₂₀ diglycerides, and C₁₂-C₂₀ triglycerides, a

mixture of saturated and unsaturated C₁₂-C₂₂ monoglycerides, C₁₂-C₂₂ diglycerides, and C₁₂-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ monoglycerides, C₁₂-C₂₄ diglycerides, and C₁₂-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ monoglycerides, C₁₄-C₁₈ diglycerides, and C₁₄-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ monoglycerides, C₁₄-C₂₀ diglycerides, and C₁₄-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ monoglycerides, C₁₄-C₂₂ diglycerides, and C₁₄-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ monoglycerides, C₁₄-C₂₄ diglycerides, and C₁₄-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ monoglycerides, C₁₆-C₁₈ diglycerides, and C₁₆-C₁₈ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ monoglycerides, C₁₆-C₂₀ diglycerides, and C₁₆-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ monoglycerides, C₁₆-C₂₂ diglycerides, and C₁₆-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ monoglycerides, C₁₆-C₂₄ diglycerides, and C₁₆-C₂₄ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ monoglycerides, C₁₈-C₂₀ diglycerides, and C₁₈-C₂₀ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ monoglycerides, C₁₈-C₂₂ diglycerides, and C₁₈-C₂₂ triglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ monoglycerides, C₁₈-C₂₄ diglycerides, and C₁₈-C₂₄ triglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ monoglycerides, C₂₀-C₂₂ diglycerides, and C₂₀-C₂₂ triglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ monoglycerides, C₂₂-C₂₄ diglycerides, and C₂₂-C₂₄ triglycerides.

21. The pharmaceutical composition of any one of claims 16-20, wherein the one or more partially hydrolyzed glycerolipids are in an amount of at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, and/or at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, or between about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 50% to about 55%, about 50% to about 60%, about 55% to about 60% by weight.
22. The pharmaceutical composition of any one of claims 16-21, wherein the one or more monoglycerides comprise unsaturated C₁₀-C₁₈ monoglycerides, unsaturated C₁₀-C₂₀ monoglycerides, unsaturated C₁₀-C₂₂ monoglycerides, unsaturated C₁₀-C₂₄ monoglycerides, unsaturated C₁₂-C₁₈ monoglycerides,

unsaturated C₁₂-C₂₀ monoglycerides, unsaturated C₁₂-C₂₂ monoglycerides, unsaturated C₁₂-C₂₄ monoglycerides, unsaturated C₁₄-C₁₈ monoglycerides, unsaturated C₁₄-C₂₀ monoglycerides, unsaturated C₁₄-C₂₂ monoglycerides, unsaturated C₁₄-C₂₄ monoglycerides, unsaturated C₁₆-C₁₈ monoglycerides, unsaturated C₁₆-C₂₀ monoglycerides, unsaturated C₁₆-C₂₂ monoglycerides, unsaturated C₁₆-C₂₄ monoglycerides, unsaturated C₁₈-C₂₀ monoglycerides, unsaturated C₁₈-C₂₂ monoglycerides, unsaturated C₁₈-C₂₄ monoglycerides, unsaturated C₂₀-C₂₂ monoglycerides, or unsaturated C₂₂-C₂₄ monoglycerides.

23. The pharmaceutical composition of any one of claims 16-21, wherein the one or more monoglycerides comprise saturated C₁₀-C₁₈ monoglycerides, saturated C₁₀-C₂₀ monoglycerides, saturated C₁₀-C₂₂ monoglycerides, saturated C₁₀-C₂₄ monoglycerides, saturated C₁₂-C₁₈ monoglycerides, saturated C₁₂-C₂₀ monoglycerides, saturated C₁₂-C₂₂ monoglycerides, saturated C₁₂-C₂₄ monoglycerides, saturated C₁₄-C₁₈ monoglycerides, saturated C₁₄-C₂₀ monoglycerides, saturated C₁₄-C₂₂ monoglycerides, saturated C₁₄-C₂₄ monoglycerides, saturated C₁₆-C₁₈ monoglycerides, saturated C₁₆-C₂₀ monoglycerides, saturated C₁₆-C₂₂ monoglycerides, saturated C₁₆-C₂₄ monoglycerides, saturated C₁₈-C₂₀ monoglycerides, saturated C₁₈-C₂₂ monoglycerides, saturated C₁₈-C₂₄ monoglycerides, saturated C₂₀-C₂₂ monoglycerides, or saturated C₂₂-C₂₄ monoglycerides.
24. The pharmaceutical composition of any one of claims 16-21, wherein the one or more monoglycerides comprise a mixture of saturated and unsaturated C₁₀-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₀-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₂-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₄-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₁₈ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₆-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₀ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₂ monoglycerides, a mixture of saturated and unsaturated C₁₈-C₂₄ monoglycerides, a mixture of saturated and unsaturated C₂₀-C₂₂ monoglycerides, or a mixture of saturated and unsaturated C₂₂-C₂₄ monoglycerides.
25. The pharmaceutical composition of any one of claims 22-24, wherein the one or more monoglycerides are in an amount of at least 10% by weight, at least 15% by weight, at least 20% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, and/or at most 10% by weight, at most 15% by weight, at most 20% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, or between about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15%

to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%, about 15% to about 60%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 50% to about 55%, about 50% to about 60%, about 55% to about 60% by weight.

26. The pharmaceutical composition of any one of claims 10-25, wherein the one or more hard fats and the one or more liquid fats are in a hard fat to liquid fat ratio of about 5:1 to about 4:1, about 5:1 to about 3:1, about 5:1 to about 2:1, about 5:1 to about 1:1, about 4:1 to about 3:1, about 4:1 to about 2:1, about 4:1 to about 1:1, about 3:1 to about 2:1, about 3:1 to about 1:1, or about 2:1 to about 1:1.
27. The pharmaceutical composition of any one of claims 10-25, wherein the one or more hard fats and the one or more liquid fats are in a hard fat to liquid fat ratio of about 1:5 to about 1:4, about 1:5 to about 1:3, about 1:5 to about 1:2, about 1:5 to about 1:1, about 1:4 to about 1:3, about 1:4 to about 1:2, about 1:4 to about 1:1, about 1:3 to about 1:2, about 1:3 to about 1:1, or about 1:2 to about 1:1.
28. The pharmaceutical composition of any one of claims 1-27, wherein the one or more digestion enhancers are in an amount of at least 1% by weight, at least 2.5% by weight, at least 5% by weight, at least 7.5% by weight, at least 10 % by weight, at least 12.5% by weight, at least 15 % by weight, at least 17.5% by weight, at least 20% by weight, at least 22.5% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 45% by weight, at least 50% by weight, at least 55% by weight, at least 60% by weight, at least 65% by weight, at least 70% by weight, at least 75% by weight, at least 75% by weight and/or at most 1% by weight, at most 2.5% by weight, at most 5% by weight, at most 7.5% by weight, at most 10 % by weight, at most 12.5% by weight, at most 15 % by weight, at most 17.5% by weight, at most 20% by weight, at most 22.5% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 45% by weight, at most 50% by weight, at most 55% by weight, at most 60% by weight, at most 65% by weight, at most 70% by weight, at most 75% by weight, or at most 80% by weight, or between about 1% to about 2.5% by weight, about 1% to about 5% by weight, about 1% to about 10% by weight, about 1% to about 15% by weight, about 1% to about 20% by weight, about 1% to about 25% by weight, about 2.5% to about 5% by weight, about 2.5% to about 10% by weight, about 2.5% to about 15% by weight, about 2.5% to about 20% by weight, about 2.5% to about 25% by weight, about 5% to about 10% by weight, about 5% to about 15% by weight, about 5% to about 20% by weight, about 5% to about 25% by weight, about 10% to about 20%, about 10% to about 25%, about 10% to about 30%, about 10% to about 35%, about 10% to about 40%, about 10% to about 45%, about 10% to about 50%, about 10% to about 55%, about 10% to about 60%, about 10% to about 65%, about 10% to about 70%, about 15% to about 20%, about 15% to about 25%, about 15% to about 30%, about 15% to about 35%, about 15% to about 40%, about 15% to about 45%, about 15% to about 50%, about 15% to about 55%,

about 15% to about 60%, about 15% to about 65%, about 15% to about 70%, about 20% to about 25%, about 20% to about 30%, about 20% to about 35%, about 20% to about 40%, about 20% to about 45%, about 20% to about 50%, about 20% to about 55%, about 20% to about 60%, about 20% to about 65%, about 20% to about 70%, about 25% to about 30%, about 25% to about 35%, about 25% to about 40%, about 25% to about 45%, about 25% to about 50%, about 25% to about 55%, about 25% to about 60%, about 25% to about 65%, about 25% to about 70%, about 30% to about 35%, about 30% to about 40%, about 30% to about 45%, about 30% to about 50%, about 30% to about 55%, about 30% to about 60%, about 30% to about 65%, about 30% to about 70%, about 35% to about 40%, about 35% to about 45%, about 35% to about 50%, about 35% to about 55%, about 35% to about 60%, about 35% to about 65%, about 35% to about 70%, about 40% to about 45%, about 40% to about 50%, about 40% to about 55%, about 40% to about 60%, about 40% to about 65%, about 40% to about 70%, about 40% to about 75%, about 40% to about 80%, about 45% to about 50%, about 45% to about 55%, about 45% to about 60%, about 45% to about 65%, about 45% to about 70%, about 45% to about 75%, about 45% to about 80%, about 50% to about 55%, about 50% to about 60%, about 50% to about 65%, about 50% to about 70%, about 50% to about 75%, about 50% to about 80%, about 55% to about 60%, about 55% to about 65%, about 55% to about 70%, about 55% to about 75%, about 55% to about 80%, about 60% to about 65%, about 60% to about 70%, about 60% to about 75%, about 60% to about 80%, about 65% to about 70% by weight, about 65% to about 75%, about 65% to about 80%, about 70% to about 75%, about 70% to about 80%, or about 75% to about 80% by weight.

29. The pharmaceutical composition of claim 28, wherein the one or more digestion enhancers include one or more bile acids, one or more phospholipids, one or more free C₁₄₋₂₄ fatty acids, one or more free C₁₄₋₂₄ fatty acid surfactants, or any combination thereof.
30. The pharmaceutical composition of claim 29, wherein the one or more bile acids includes cholic acid, chenodeoxycholic acid, dafachronic acid, deoxycholic acid, glycocholic acid, glycochenodeoxycholic acid, lithocholic acid, taurochenodeoxycholic acid, taurocholic acid, any stereoisomer thereof, and any combination thereof.
31. The pharmaceutical composition of claim 29 or 30, wherein the one or more bile acids are in an amount of at least 0.1% by weight, at least 0.5% by weight, at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, or at least 10.0% by weight and/or at most 0.1% by weight, at most 0.5% by weight, at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, or at most 10.0% by weight or between about 0.1% to about 0.5%, about 0.1% to about 1.0%, about 0.1% to about 2.0%, about 0.1% to about 3.0%, about 0.1% to about 4.0%, about 0.1% to about 5.0%, about 0.1% to about 6.0%, about 0.1% to about 7.0%, about 0.1% to about 8.0%, about 0.1% to about 9.0%, about 0.1% to about 10.0%, about 0.5% to about 1.0%, about 0.5% to about 2.0%, about

0.5% to about 3.0%, about 0.5% to about 4.0%, about 0.5% to about 5.0%, about 0.5% to about 6.0%, about 0.5% to about 7.0%, about 0.5% to about 8.0%, about 0.5% to about 9.0%, about 0.5% to about 10.0%, about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%, about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about 8.0%, about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

32. The pharmaceutical composition of any one of claims 29-31, wherein the one or more phospholipids include one or more phosphoglycerides, one or more phosphosphingolipids, one or more lecithins, or any combination thereof.
33. The pharmaceutical composition of claim 32, wherein the one or more phosphoglycerides include a phosphatidic acid (phosphatidate) (PA), a phosphatidylethanolamine (PE), a phosphatidylcholine (PC), a phosphatidylserine (PS), a cardiolipin, a phosphoinositide, or any combination thereof.
34. The pharmaceutical composition of claim 32, wherein the one or more phosphosphingolipids include phosphatidylethanolamine (PE), phosphatidylcholine (PC), ceramide phosphorylethanolamine (Cer-PE), ceramide phosphorylcholine (Cer-PC), or any combination thereof.
35. The pharmaceutical composition of claim 29 or 32-34, wherein the one or more phospholipids are in an amount of at least 0.1% by weight, at least 0.5% by weight, at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, or at least 10.0% by weight and/or at most 0.1% by weight, at most 0.5% by weight, at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, or at most 10.0% by weight or between about 0.1% to about 0.5%, about 0.1% to about 1.0%, about 0.1% to about 2.0%, about 0.1% to about 3.0%, about 0.1% to about 4.0%, about 0.1% to about 5.0%, about 0.1% to about 6.0%, about 0.1% to about 7.0%, about 0.1% to about 8.0%, about 0.1% to about 9.0%, about 0.1% to about 10.0%, about 0.5% to about 1.0%, about 0.5% to about 2.0%, about 0.5% to about 3.0%, about 0.5% to about 4.0%, about 0.5% to about 5.0%, about 0.5% to about 6.0%, about 0.5% to about 7.0%, about 0.5% to about 8.0%, about 0.5% to

about 9.0%, about 0.5% to about 10.0%, about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%, about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about 8.0%, about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

36. The pharmaceutical composition of any one of claims 29-35, wherein the one or more free C₁₄₋₂₄ fatty acids include unsaturated free C_{14-C16} fatty acids, unsaturated free C_{14-C18} fatty acids, unsaturated free C_{14-C20} fatty acids, unsaturated free C_{14-C22} fatty acids, unsaturated free C_{14-C24} fatty acids, unsaturated free C_{16-C18} fatty acids, unsaturated free C_{16-C20} fatty acids, unsaturated free C_{16-C22} fatty acids, unsaturated free C_{16-C24} fatty acids, unsaturated free C_{18-C20} fatty acids, unsaturated free C_{18-C22} fatty acids, unsaturated free C_{18-C24} fatty acids, unsaturated free C_{20-C22} fatty acids, or unsaturated free C_{22-C24} fatty acids.
37. The pharmaceutical composition of any one of claims 29-35, wherein the one or more free C₁₄₋₂₄ fatty acids include ω -3 unsaturated free C_{18-C22} fatty acids, ω -5 unsaturated free C_{18-C22} fatty acids, ω -6 unsaturated free C_{18-C22} fatty acids, ω -7 unsaturated free C_{18-C22} fatty acids, ω -9 unsaturated free C_{18-C22} fatty acids, ω -10 unsaturated free C_{18-C22} fatty acids, ω -11 unsaturated free C_{18-C22} fatty acids, or ω -12 unsaturated free C_{18-C22} fatty acids.
38. The pharmaceutical composition of any one of claims 29-35, wherein the one or more free C₁₄₋₂₄ fatty acids include saturated free C_{14-C16} fatty acids, saturated free C_{14-C18} fatty acids, saturated free C_{14-C20} fatty acids, saturated free C_{14-C22} fatty acids, saturated free C_{14-C24} fatty acids, saturated free C_{16-C18} fatty acids, saturated free C_{16-C20} fatty acids, saturated free C_{16-C22} fatty acids, saturated free C_{16-C24} fatty acids, saturated free C_{18-C20} fatty acids, saturated free C_{18-C22} fatty acids, saturated free C_{18-C24} fatty acids, saturated free C_{20-C22} fatty acids, or saturated free C_{22-C24} fatty acids.
39. The pharmaceutical composition of any one of claims 29-35, wherein the one or more free C₁₄₋₂₄ fatty acids include a mixture of saturated and unsaturated free C_{14-C16} fatty acids, a mixture of saturated and unsaturated free C_{14-C18} fatty acids, a mixture of saturated and unsaturated free C_{14-C20} fatty acids, a mixture of saturated and unsaturated free C_{14-C22} fatty acids, a mixture of saturated and unsaturated free C_{14-C24} fatty acids, a mixture of saturated and unsaturated free C_{16-C18} fatty acids, a mixture of saturated and unsaturated free C_{16-C20} fatty acids, a mixture of saturated and unsaturated free C_{16-C22} fatty acids, a mixture of saturated and unsaturated free C_{16-C24} fatty acids, a mixture of saturated and unsaturated free C_{18-C20} fatty acids, a mixture of saturated and unsaturated free C_{18-C22} fatty acids, a mixture of saturated and unsaturated free C_{18-C24} fatty acids, a mixture of saturated and unsaturated free C_{20-C22} fatty acids, or a mixture of saturated and unsaturated free C_{22-C24} fatty acids.

40. The pharmaceutical composition of any one of claims 29-35, wherein the one or more free C₁₄₋₂₄ fatty acids include palmitic acid (hexadecanoic acid), palmitolinolenic acid, palmitidonic acid, palmitovaccenic acid, palmitoleic acid, sapienic acid, 4-Hexadecenoic acid, stearic acid (octadecenoic acid), α -linolenic acid, stearidonic acid, α -eleostearic acid, β -eleostearic acid, punicic acid, 7,10,13-octadecatrienoic acid, 12-octadecenoic acid, linoleic acid, linolelaidic acid, γ -linolenic acid, calendic acid, pinolenic acid, vaccinic acid, rumenic acid, oleic acid, elaidic acid, petroselinic acid, arachidic acid (eicosanoic acid), dihom- α -linolenic acid, eicosic acidtraenoic acid, eicosapentaenoic acid, 9,12,15-eicosatrienoic acid, β -eicosic acidtraenoic acid, dihom- γ -linolenic acid, arachidonic acid, paullinic acid, 7,10,13-eicosatrienoic acid, gondoic acid, 8,11-eicosadienoic acid, meadic acid, gadoleic acid, 8-eicosenoic acid, behenic acid (docosanoic acid), clupanodonic acid, docosahexaenoic acid, adrenic acid, osbondic acid, erucic acid, lignoceric acid (tetracosanic acid), 9,12,15,18,21-Tetracosapentaenoic acid, 6,9,12,15,18,21-Tetracosahexaenoic acid, and nervonic acid.
41. The pharmaceutical composition of any one of claims 29-40, wherein the one or more free C₁₄₋₂₄ fatty acids are in an amount of at least 1% by weight, at least 2.5% by weight, at least 5% by weight, at least 7.5% by weight, at least 10 % by weight, at least 12.5% by weight, at least 15 % by weight, at least 17.5% by weight, at least 20% by weight, at least 22.5% by weight, at least 25% by weight, at least 30% by weight, at least 35% by weight, at least 40% by weight, at least 50% by weight, at least 60% by weight, at least 70% by weight, at least 75% by weight and/or at most 1% by weight, at most 2.5% by weight, at most 5% by weight, at most 7.5% by weight, at most 10 % by weight, at most 12.5% by weight, at most 15 % by weight, at most 17.5% by weight, at most 20% by weight, at most 22.5% by weight, at most 25% by weight, at most 30% by weight, at most 35% by weight, at most 40% by weight, at most 50% by weight, at most 60% by weight, at most 70% by weight, at most 75% by weight or between about 1% to about 2.5% by weight, about 1% to about 5% by weight, about 1% to about 10% by weight, about 1% to about 15% by weight, about 1% to about 20% by weight, about 1% to about 25% by weight, about 2.5% to about 5% by weight, about 2.5% to about 10% by weight, about 2.5% to about 15% by weight, about 2.5% to about 20% by weight, about 2.5% to about 25% by weight, about 2.5% to about 30% by weight, about 5% to about 10% by weight, about 5% to about 15% by weight, about 5% to about 20% by weight, about 5% to about 25% by weight, about 5% to about 30% by weight, about 10% to about 15% by weight, about 10% to about 20% by weight, about 10% to about 25% by weight, about 10% to about 30% by weight, about 10% to about 40% by weight, about 10% to about 45% by weight, about 10% to about 50% by weight, about 10% to about 60% by weight, about 10% to about 70% by weight, about 15% to about 20% by weight, about 15% to about 25% by weight, about 15% to about 30% by weight, about 15% to about 40% by weight, about 15% to about 45% by weight, about 15% to about 50% by weight, about 15% to about 60% by weight, about 15% to about 70% by weight, about 20% to about 25% by weight, about 20% to about 30% by weight, about 20% to about 40% by weight, about 20% to about 45% by weight, about 20% to about 50% by weight, about 20% to about 60% by weight, about 20% to about 70% by weight, about 30% to about 40% by weight, about 30% to about 50% by weight, about 30% to about 60% by weight, about 30% to about 70% by weight, about 30% to about 75% by weight, about 35% to about 40% by weight, about 35% to about 50% by weight, about 35% to about 60% by weight, about 35% to about 70% by weight, about 35% to about

75% by weight, about 40% to about 50% by weight, about 40% to about 60% by weight, about 40% to about 70% by weight, about 40% to about 75% by weight, about 50% to about 60% by weight, about 50% to about 70% by weight, or about 60% to about 70% by weight.

42. The pharmaceutical composition of any one of claims 29-41, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include unsaturated free C_{14-C₁₆} fatty acid surfactants, unsaturated free C_{14-C₁₈} fatty acid surfactants, unsaturated free C_{14-C₂₀} fatty acid surfactants, unsaturated free C_{14-C₂₂} fatty acid surfactants, unsaturated free C_{14-C₂₄} fatty acid surfactants, unsaturated free C_{16-C₁₈} fatty acid surfactants, unsaturated free C_{16-C₂₀} fatty acid surfactants, unsaturated free C_{16-C₂₂} fatty acid surfactants, unsaturated free C_{16-C₂₄} fatty acid surfactants, unsaturated free C_{18-C₂₀} fatty acid surfactants, unsaturated free C_{18-C₂₂} fatty acid surfactants, unsaturated free C_{18-C₂₄} fatty acid surfactants, unsaturated free C_{20-C₂₂} fatty acid surfactants, or unsaturated free C_{22-C₂₄} fatty acid surfactants.
43. The pharmaceutical composition of any one of claims 29-41, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include ω -3 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -5 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -6 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -7 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -9 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -10 unsaturated free C_{18-C₂₂} fatty acid surfactants, ω -11 unsaturated free C_{18-C₂₂} fatty acid surfactants, or ω -12 unsaturated free C_{18-C₂₂} fatty acid surfactants.
44. The pharmaceutical composition of any one of claims 29-41, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include saturated free C_{14-C₁₆} fatty acid surfactants, saturated free C_{14-C₁₈} fatty acid surfactants, saturated free C_{14-C₂₀} fatty acid surfactants, saturated free C_{14-C₂₂} fatty acid surfactants, saturated free C_{14-C₂₄} fatty acid surfactants, saturated free C_{16-C₁₈} fatty acid surfactants, saturated free C_{16-C₂₀} fatty acid surfactants, saturated free C_{16-C₂₂} fatty acid surfactants, saturated free C_{16-C₂₄} fatty acid surfactants, saturated free C_{18-C₂₀} fatty acid surfactants, saturated free C_{18-C₂₂} fatty acid surfactants, saturated free C_{18-C₂₄} fatty acid surfactants, saturated free C_{20-C₂₂} fatty acid surfactants, or saturated free C_{22-C₂₄} fatty acid surfactants.
45. The pharmaceutical composition of any one of claims 29-41, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include a mixture of saturated and unsaturated free C_{14-C₁₆} fatty acid surfactants, a mixture of saturated and unsaturated free C_{14-C₁₈} fatty acid surfactants, a mixture of saturated and unsaturated free C_{14-C₂₀} fatty acid surfactants, a mixture of saturated and unsaturated free C_{14-C₂₂} fatty acid surfactants, a mixture of saturated and unsaturated free C_{14-C₂₄} fatty acid surfactants, a mixture of saturated and unsaturated free C_{16-C₁₈} fatty acid surfactants, a mixture of saturated and unsaturated free C_{16-C₂₀} fatty acid surfactants, a mixture of saturated and unsaturated free C_{16-C₂₂} fatty acid surfactants, a mixture of saturated and unsaturated free C_{16-C₂₄} fatty acid surfactants, a mixture of saturated and unsaturated free C_{18-C₂₀} fatty acid surfactants, a mixture of saturated and unsaturated free C_{18-C₂₂} fatty acid surfactants, a mixture of saturated and unsaturated free C_{18-C₂₄} fatty acid surfactants, a mixture of saturated and unsaturated free C_{20-C₂₂} fatty acid surfactants, or a mixture of saturated and unsaturated free C_{22-C₂₄} fatty acid surfactants.
46. The pharmaceutical composition of any one of claims 29-41, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants include sodium palmitate (hexadecanoate), sodium palmitolinolenate, sodium palmitidonate, sodium palmitovaccenate, sodium palmitoleate, sodium sapienate, sodium 4-

Hexadecenoate, sodium stearate (octadecenoate), sodium α -linolenate, sodium stearidonate, sodium α -eleostearate, sodium β -eleostearate, sodium punicate, sodium 7,10,13-octadecatrienoate, sodium 12-octadecenoate, sodium linoleate, sodium linolelaidate. Sodium γ -linolenate, sodium calendate, sodium pinolenate, sodium vaccinate, sodium rumenate, sodium oleate, sodium elaidate, sodium petroselinate, sodium arachidate (eicosanoate), sodium dihom- α -linolenate, sodium eicosatetraenoate, sodium eicosapentaenoate, sodium 9,12,15-eicosatrienoate, sodium β -eicosatetraenoate, sodium dihom- α -linolenate, sodium dihom- γ -linolenate, sodium arachidonate, sodium paullinate, sodium 7,10,13-eicosatrienoate, sodium gondoate, Sodium 8,11-eicosadienoate, sodium meadate, sodium gadoleate, sodium 8-eicosenoate, sodium behenate (docosanoate), sodium clupanodolate, sodium docosahexaenoate, sodium adrenate, sodium osbondate, sodium erucate, sodium lignocerate (tetracosanate), sodium 9,12,15,18,21-Tetracosapentaenoate, sodium 6,9,12,15,18,21-Tetracosahexaenoate, and sodium nervonate.

47. The pharmaceutical composition of any one of claims 85-102, wherein the one or more free C₁₄₋₂₄ fatty acid surfactants are in an amount of at least 0.5% by weight, at least 1.0% by weight, at least 1.5% by weight, at least 2.0% by weight, at least 2.5% by weight, at least 3.0% by weight, at least 3.5% by weight, at least 4.0% by weight, at least 4.5% by weight, at least 5.0% by weight, at least 5.5% by weight, at least 6.0% by weight, at least 6.5% by weight, at least 7.0% by weight, at least 7.5% by weight, at least 8.0% by weight, at least 8.5% by weight, at least 9.0% by weight, at least 9.5% by weight, at least 10.0% by weight and/or at most 0.1% by weight, at most 0.5% by weight, at most 1.0% by weight, at most 1.5% by weight, at most 2.0% by weight, at most 2.5% by weight, at most 3.0% by weight, at most 3.5% by weight, at most 4.0% by weight, at most 4.5% by weight, at most 5.0% by weight, at most 5.5% by weight, at most 6.0% by weight, at most 6.5% by weight, at most 7.0% by weight, at most 7.5% by weight, at most 8.0% by weight, at most 8.5% by weight, at most 9.0% by weight, at most 9.5% by weight, at most 10.0% by weight or between about 0.1% to about 0.5%, about 0.1% to about 1.0%, about 0.1% to about 2.0%, about 0.1% to about 3.0%, about 0.1% to about 4.0%, about 0.1% to about 5.0%, about 0.1% to about 6.0%, about 0.1% to about 7.0%, about 0.1% to about 8.0%, about 0.1% to about 9.0%, about 0.1% to about 10.0%, about 0.5% to about 1.0%, about 0.5% to about 2.0%, about 0.5% to about 3.0%, about 0.5% to about 4.0%, about 0.5% to about 5.0%, about 0.5% to about 6.0%, about 0.5% to about 7.0%, about 0.5% to about 8.0%, about 0.5% to about 9.0%, about 0.5% to about 10.0%, about 1.0% to about 2.0%, about 1.0% to about 3.0%, about 1.0% to about 4.0%, about 1.0% to about 5.0%, about 1.0% to about 6.0%, about 1.0% to about 7.0%, about 1.0% to about 8.0%, about 1.0% to about 9.0%, about 1.0% to about 10.0%, about 2.0% to about 3.0%, about 2.0% to about 4.0%, about 2.0% to about 5.0%, about 2.0% to about 6.0%, about 2.0% to about 7.0%, about 2.0% to about 8.0%, about 2.0% to about 9.0%, about 2.0% to about 10.0%, about 3.0% to about 4.0%, about 3.0% to about 5.0%, about 3.0% to about 6.0%, about 3.0% to about 7.0%, about 3.0% to about 8.0%, about 3.0% to about 9.0%, about 3.0% to about 10.0%, about 4.0% to about 5.0%, about 4.0% to about 6.0%, about 4.0% to about 7.0%, about 4.0% to about 8.0%, about 4.0% to about 9.0%, about 4.0% to about 10.0%, about 5.0% to about 6.0%, about 5.0% to about 7.0%, about 5.0% to about 8.0%, about 5.0% to about 9.0%, about 5.0% to about 10.0%, about 6.0% to about 7.0%, about 6.0% to about 8.0%, about 6.0% to about 9.0%, about 6.0% to about 10.0%, about 7.0% to about 8.0%,

about 7.0% to about 9.0%, about 7.0% to about 10.0%, about 8.0% to about 9.0%, about 8.0% to about 10.0%, or about 9.0% to about 10.0% by weight.

48. The pharmaceutical composition of any one of claims 1-47, wherein the pharmaceutical composition is not an emulsion or self-emulsifying formulation.
49. A pharmaceutical composition for use in treating a disease or disorder, the pharmaceutical composition being defined by any one of claims 1-48.
50. The pharmaceutical composition of claim 49, wherein the disease or disorder includes a neoplasm, a cancer, an inflammation, an autoimmune disorder, an idiopathic pulmonary fibrosis, and a renal disease or disorder.
51. A method of treating an individual with an inflammation, the method comprising the step of administering to the individual in need thereof a pharmaceutical composition as defined by any one of claims 1-48, wherein administration results in a reduction in a symptom associated with the inflammation, thereby treating the individual.
52. The method of claim 51, wherein the disease or disorder includes a neoplasm, a cancer, an inflammation, an autoimmune disorder, an idiopathic pulmonary fibrosis, and a renal disease or disorder.
53. Use of a pharmaceutical composition as defined by any one of claims 1-48 in the manufacture of a medicament for the treatment of a disease or disorder.
54. The use of claim 53, wherein the disease or disorder includes a neoplasm, a cancer, an inflammation, an autoimmune disorder, an idiopathic pulmonary fibrosis, and a renal disease or disorder.