CLAIMS:

1. A pharmaceutical formulation comprising a sparingly water-soluble agent encapsulated within a liposome, said formulation manufactured by a method comprising: (a) preparing a suspension of the liposomes in an aqueous medium having a proton or an ion gradient across the liposome membrane; (b) preparing a solution of the sparingly water-soluble agent by completely dissolving said sparingly water-soluble agent in a solvent selected from an aprotic solvent and a polyol;(c) forming a loading suspension comprising said solid sparingly water-soluble agent by contacting the liposome suspension in (a) with the solution of the sparingly water-soluble agent in (b), thereby diluting (b) beyond the point of the agent's solubility, precipitating the sparingly water-soluble active agent into the aqueous medium, thereby forming the loading suspension comprising the solid sparingly water-soluble agent and the liposomes, wherein said loading suspension scatters light more than said suspension of liposomes; and (d) incubating the final suspension of (c) for a period of time sufficient for the solid sparingly water-soluble agent to be remotely loaded from the aqueous medium into the liposomes by the proton or ion gradient.

2. The pharmaceutical formulation according to claim 1, wherein at least about 70% of the solid sparingly water-soluble active agent in the loading suspension is remotely loaded into the liposome.

3. The pharmaceutical formulation according to claim 1, wherein the liposomes have a size of from about 30 nanometers to about 40 microns.

4. The pharmaceutical formulation of any preceding claim, wherein the liposome consists of from 50 mole percent to 70 mole percent HSPC, from 25 mole percent to 50 mole percent cholesterol and from 0 mole percent to 10 mole percent PEG-DSPE.

5. The pharmaceutical formulation according to claim 4, wherein the liposomes comprise about 60 mol% HSPC, about 40 mol% cholesterol and about 5 mol% PEG-DSPE.

6. The pharmaceutical formulation according to claim 1, wherein the liposomes comprise from about 45 mole% to about 75 mole% sphingomyelin, from about 25 mole% to about 50 mole% cholesterol and from about 0 mole% to about 10 mole% PEG-DSPE.

7. The pharmaceutical formulation according to claim 6, wherein the liposomes comprise about 55 mole% sphingomyelin, about 45 mole% cholesterol and about 2.8 mole% PEG-DSPE.

8. The pharmaceutical formulation according to claim 1, wherein the sparingly water-soluble active agent has an aqueous solubility of less than 2 mg/mL.

9. The pharmaceutical formulation according to claim 8, wherein the sparingly water-soluble active agent has an aqueous solubility at pH 7 of less than 2 mg/mL.

10. The pharmaceutical formulation according of any preceding claim, wherein said agent is carfilzomib.

11. The pharmaceutical formulation according to any preceding claim, wherein the aprotic solvent is selected from dimethylsulfoxide, dioxane, tetrahydrofuran, dimethylformamide, acetonitrile, dimethylacetamide, sulfolane, gamma butyrolactone, pyrrolidones, l-methyl-2-pyrrolidinone, methylpyrroline, ethylene glycol monomethyl ether, diethylene glycol monomethyl ether, polyethylene glycol.

12. The pharmaceutical formulation of claim 1 wherein the encapsulation efficiency is at least 50%.

13. The pharmaceutical formulation according to claim 12, wherein the encapsulation efficiency is at least 90%.

14. The pharmaceutical formulation of any preceding claim, wherein the internal aqueous medium comprises an active-loading buffer which consists of water, optionally a salt selected from a sulfate-, phosphate-, phosphonate-, citrate-, or acetate-salt, an ammonium-salt, an alkylated, e.g., methyl-, ethyl-, propyl- and amyl, ammonium-salt, an Fe^{+2}-, Mn^{2+}-, Cu^{2+}- Na^{+} and/ or K^{+}-salt, an EDTA-ion salt, and optionally a pH-buffer to maintain a pH-gradient.

15. A method of remotely loading a liposome with an agent that is sparingly water-soluble wherein the method comprises: (a) preparing a suspension of the liposomes in an aqueous medium having a proton or an ion gradient across the liposome membrane; (b)

preparing a solution of the sparingly water-soluble agent by completely dissolving said sparingly water-soluble agent in a solvent selected from an aprotic solvent and a polyol;(c) forming a loading suspension comprising said solid sparingly water-soluble agent by contacting the liposome suspension in (a) with the solution of the sparingly water-soluble agent in (b), thereby diluting (b) beyond the point of the agent's solubility, precipitating the sparingly water-soluble active agent into the aqueous medium, thereby forming the loading suspension comprising the solid sparingly water-soluble agent and the liposomes, wherein said loading suspension scatters light more than said suspension of liposomes; and (d) incubating the final suspension of (c) for a period of time sufficient for the solid sparingly water-soluble agent to be remotely loaded from the aqueous medium into the liposomes by the proton or ion gradient.