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(54) Title: SUSTAINED RELEASE FORMULATIONS USING NON-AQUEOUS MEMBRANE EMULSIFICATION

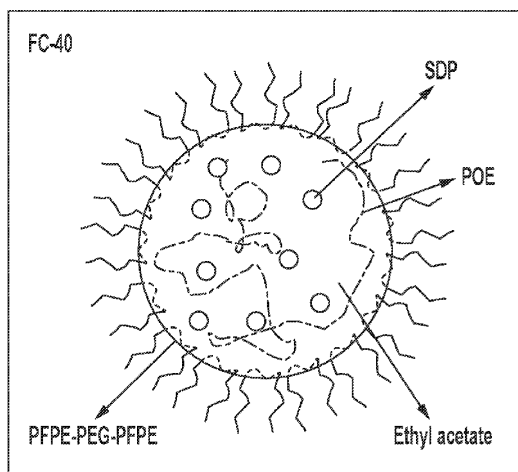


FIG. 5

(57) Abstract: Non-aqueous membrane emulsion methods for producing polymeric and polymer-coated microparticles are provided. Some embodiments provide methods for producing a sustained release or controlled release microparticle by combining micronized protein powder and a polymer into a hydrocarbon solvent to form a non-aqueous first solution, agitating the first non-aqueous solution to form a suspension, feeding the suspension into a dispersion pump, wherein the suspension is infused through a porous membrane into a continuous phase comprising a fluorocarbon liquid and a fluorosurfactant to form a hydrocarbon-in-fluorocarbon emulsion. The hydrocarbon solvent, the fluorocarbon liquid, and the fluorosurfactant are removed, and the microparticles are collected.

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