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(54) Title: SYSTEMS AND PHARMACEUTICAL COMPOSITIONS FOR TREATMENT BY DIRECT INJECTION OF A TARGETED POPULATION OF CELLS

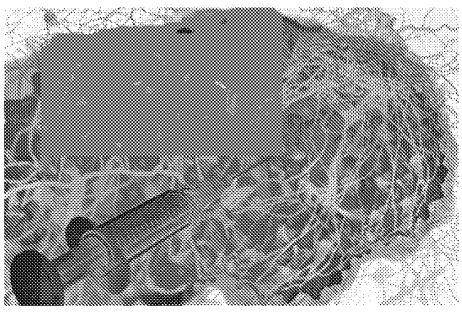


Figure 12

(57) Abstract: Systems and methods are provided for delivering a therapeutic treatment to a targeted population of cells of a subject, including but not limited to tumors, eyeballs, pancreatic tissue, liver tissue, and lung tissue. The system includes an injectable aqueous solution in a vial enclosed with a septum. The solution includes particles containing a therapeutic agent and having a coating around the therapeutic agent, the coating including chitosan so as to provide controlled release of the agent from the particles. The solution further includes chitosan polymer in the form of a polymer gel matrix, further providing controlled release of the particles from the aqueous gel environment. Also provided are methods of manufacturing a lyophilized powder disposed within a vial containing chitosan polymer and chitosan coated particles, the powder forming the above-described injectable aqueous solution of particles and chitosan gel upon mixing with water.

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