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(54) Title: EX-VIVO APPLICATION OF SOLID MICROPARTICULATE THERAPEUTIC AGENTS

(57) Abstract: The present invention is concerned with a method of preparing and delivering small particles of a pharmaceutically active material to a mammalian subject for treating diseases or disorders. A preferred embodiment entails: (i) the collection of tissue cells from an animal donor, (ii) selective or non-selective growth of these cells in a cell culture medium to which is added solid particles of a therapeutically active compound, mostly free of a drug carrier (about 10% or less, by weight), and having an average particle size of less than about 100 microns, (iii) contacting the cells in the cell culture medium with the solid particles of therapeutically active compound causing the particles to be taken up by the cells into either the intracellular compartment of the cultured cells, attachment of the active compound as particles to the periphery of such cells, or a combination of intracellular uptake and attachment to the cell surface, (iv) optionally, isolation and/or resuspension of the cells prepared in steps i through iii, (v) administering the cells to the mammalian subject. The pharmaceutically active material can be administered intravenously, intramuscularly, subcutaneously, intradermally, intra-articularly, intrathecally, epidurally, intracerebrally, via buccal route, rectally, topically, transdermally, orally, intranasally, via pulmonary route, intraperitoneally, or combinations threof. After administration, the loaded cells transport the pharmaceutical composition as particles.