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(54) Title: IMPLANTATION OF ENCAPSULATED BIOLOGICAL MATERIALS FOR TREATING DISEASES

(57) Abstract: The present invention relates to compositions for treating a disease, such as diabetes, by implanting encapsulated biological material into a patient in need of treatment. Several methods are presented for coating several different types of biological materials. The coatings can be placed directly onto the surface of the biological materials or onto the surface of other coating materials that hold the biological materials. The components of the polymerization reactions that produce the coatings can include natural and synthetic polymers, macromers, accelerants, cocatalysts, photoinitiators, and radiation. These encapsulated biological materials are used to treat a variety of different human and animal diseases or disorders by implanting them into several areas in the body including the subcutaneous site. The coating materials can be manipulated to provide different degrees of biocompatibility, protein diffusivity characteristics, strength, and biodegradability to optimize the delivery of biological materials from the encapsulated implant to the host recipient while protecting the encapsulated biological materials from destruction by the host inflammatory and immune protective mechanisms without requiring long-term anti-inflammatory or anti-immune treatment of the host.

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