

[54] **TRANSPLANTABLE ARTIFICIAL TISSUE**

[75] **Inventors:** Bennie J. Walthall, El Sobrante;
Yvonne E. McHugh, Berkeley;
Houston F. Voss, Pleasanton, all of
Calif.

[73] **Assignee:** Hana Biologics, Inc., Alameda, Calif.

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623/12; 435/178; 424/95; 424/110

[58] **Field of Search** 435/178, 180, 182;
424/94.21, 95; 623/11, 66, 12

References Cited

U.S. PATENT DOCUMENTS

4,645,669 2/1987 Reid 424/95
4,722,898 2/1988 Errede et al. 435/182

OTHER PUBLICATIONS

Bell et al., "Reconstruction of a Thyroid Gland Equivalent from Cells and Matrix Materials", *J. Exp. Zool.*, 232:277-285, (1984).

Primary Examiner—Alan W. Cannon
Attorney, Agent, or Firm—William B. Walker; Laura Terlizzi

ABSTRACT

[57] A transplantable artificial tissue matrix structure containing viable cells which is suitable for insertion into the body is made by polymerizing precursors in an aqueous solution to form a shape retaining solid matrix comprising viable cells, matrix polymer and reversible gel polymer. The solution contains a matrix polymer precursor, a reversible gel polymer precursor, and viable cells. The reversible gel polymer is dissolved and removed to yield an insoluble, porous matrix containing viable cells. The conditions and reagents are selected to maintain the viability of the cells. The invention is particularly suitable for artificial transplant matrix tissue containing pancreatic islet cells.

7 Claims, No Drawings