

[54] **POROUS MEMBRANE HAVING HYDROPHILIC AND CELL GROWTH PROMOTIONS SURFACE AND PROCESS**

[75] **Inventors:** Aldo M. Pitt, Sudbury; Michael J. Steuck, North Reading, both of Mass.

[73] **Assignee:** Millipore Corporation, Bedford, Mass.

[21] **Appl. No.:** 404,810

[22] **Filed:** Sep. 8, 1989

**Related U.S. Application Data**

[60] Continuation-in-part of Ser. No. 286,429, Nov. 19, 1988, Pat. No. 4,908,236, which is a division of Ser. No. 937,755, Dec. 4, 1986, Pat. No. 4,917,793.

[51] **Int. Cl.<sup>5</sup>** ..... A61K 13/00; A61K 31/74; A61K 31/78; C12N 11/00

[52] **U.S. Cl.** ..... 424/443; 424/78; 424/81; 424/484; 424/486; 435/174; 435/180; 435/240.2; 435/240.23; 435/240.241; 435/240.243

[58] **Field of Search** ..... 424/423, 443, 78, 81, 424/484, 486; 435/240.243, 240.241, 180, 174, 240.2, 240.23; 623/1

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

3,276,448 10/1966 Kronenthal ..... 623/1  
3,910,819 10/1975 Rembaum et al. .... 195/1.7  
4,917,793 4/1990 Pitt et al. .... 210/94

*Primary Examiner*—Thurman K. Page  
*Assistant Examiner*—G. S. Kishore  
*Attorney, Agent, or Firm*—Andrew T. Karnakis; Paul J. Cook

[57] **ABSTRACT**

A composite, porous membrane is formed from a porous polymer membrane having desired bulk properties on which is directly coated a cell attachment and/or growth promoting composition and a cross-linked polymer having desired surface properties. The composite membrane retains the porosity of the porous polymeric membrane. In one embodiment, when the substrate is polytetrafluoroethylene the composite is microscopically transparent.

**17 Claims, No Drawings**