

[54] MEDICAL MATERIALS

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[56] References Cited

U.S. PATENT DOCUMENTS

3,955,012 5/1976 Okamura 128/DIG. 8

4,175,182	11/1979	Schmer	424/183
4,321,711	3/1982	Mano	623/1
4,453,939	6/1984	Zimmerman	604/368
4,510,084	4/1985	Eibl	424/101

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[57] ABSTRACT

The medical material contains heparinized collagen in which heparin has been bonded to protamine covalently fixed on collagen, and, owing to its excellent compatibility with living bodies, especially, its superb antithrombotic property, can be suitably used as a substituent material for tissues or organs which are brought into direct contact with blood, namely, as artificial vessels, artificial valves and patching materials for cardiovascular organs, and the above medical material is also suitable as a membrane having anti-adhesion effects. The medical material is obtained by immersing and treating a natural or artificial material successively in an aqueous protamine solution, an aqueous glutaraldehyde solution and an aqueous heparin solution.

8 Claims, 1 Drawing Figure

