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[54] **METHODS AND COMPOSITIONS FOR INHIBITION OF CELL INVASION AND FIBROSIS USING DEXTRAN SULFATE**

[75] Inventors: **Dikla Roufa**, St. Louis, Mo.; **Adrian Harel**, Woodmere, Ohio; **Robert C. A. Frederickson**, Bentleyville, Ohio; **George T. Coker, III**, Mayfield Heights, Ohio

[73] Assignee: **Gliatech, Inc.**, Beachwood, Ohio

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Primary Examiner—Douglas W. Robinson
Assistant Examiner—James Wilson
Attorney, Agent, or Firm—Pennie & Edmonds

[57] **ABSTRACT**

The present invention relates to the discovery that biocompatible anionic polymers can effectively inhibit fibrosis, scar formation, and surgical adhesions. The invention is predicated on the discovery that anionic polymers effectively inhibit invasion of cells associated with detrimental healing processes, and in particular, that he effectiveness of an anionic polymer at inhibiting cell invasion correlates with the anionic charge density of the polymer. Thus the present invention provides a large number of materials for use in methods of inhibiting fibrosis and fibroblast invasion. Anionic polymers for use in the invention include but are not limited to natural proteoglycans, and the glycosaminoglycan moieties of proteoglycans. Additionally, anionic carbohydrates and other anionic polymers may be used. The anionic polymers dextran sulfate and pentosan polysulfate are preferred. In a more preferred embodiment, dextran sulfate, in which the sulfur content is greater than about 10% by weight, may be used. In a more preferred embodiment, the average molecular weight is about 40,000 to 500,000 Daltons. The present invention provides compositions and methods to inhibit fibrosis and scarring associated with surgery. The invention further provides compositions and methods to inhibit glial cell invasion, detrimental bone growth and neurite outgrowth. In a preferred embodiment, the inhibitory compositions further comprise an adhesive protein.

50 Claims, 13 Drawing Sheets