US005093319A

United States Patent [19]

Higham et al.

[11] Patent Number: 5,093,319

[45] Date of Patent: Mar. 3, 1992

[54] USE OF DERIVATIVES OF CHITIN SOLUBLE IN AQUEOUS SOLUTIONS FOR PREVENTING ADHESIONS

[75] Inventors: **Paul A. Higham**, Ringwood, N.J.; **Jessica D. Posey-Dowty**, Kingsport, Tenn.

[73] Assignee: **Pfizer Hospital Products Group, Inc.**, New York, N.Y.

[21] Appl. No.: **644,758**

[22] Filed: **Jan. 24, 1991**

Related U.S. Application Data

[63] Continuation of Ser. No. 429,687, Oct. 31, 1989, abandoned.

[51] **Int. Cl.**[5] **A61K 31/73**; A61L 15/16

[52] **U.S. Cl.** **514/55**; 514/953; 514/955; 514/944; 536/20; 424/423; 424/444

[58] **Field of Search** 514/55, 953, 955, 944; 536/20, 55.3; 424/444, 423

[56] **References Cited**

U.S. PATENT DOCUMENTS

2,040,880	5/1936	Rigby	18/54
3,632,754	1/1972	Balassa	424/180
4,326,532	4/1982	Hammar	514/56
4,378,017	3/1983	Kosugi et al.	424/35
4,532,134	7/1985	Malette et al.	514/55
4,572,906	2/1986	Sparkes et al.	514/21
4,603,695	8/1986	Ikada et al.	128/334 R
4,619,995	10/1986	Hayes	536/20
4,659,700	4/1987	Jackson	514/55
4,889,722	12/1989	Sheffield	424/78

FOREIGN PATENT DOCUMENTS

WO86/00912	2/1986	PCT Int'l Appl. .
WO87/07618	12/1987	PCT Int'l Appl. .
2026516	6/1979	United Kingdom .

OTHER PUBLICATIONS

Shigehiro Hirano & Ryuji Yamaguchi, "N-Acetylchitosan Gel: A Polyhydrate of Chitin", 1976, pp. 1685-1691.

Primary Examiner—Johnnie R. Brown
Assistant Examiner—Everett White
Attorney, Agent, or Firm—Peter C. Richardson; Lawrence C. Akers; Raymond W. Augustin

[57] **ABSTRACT**

A method for preventing adhesion between vital tissues includes the step of placing between the tissues a material made up of biodegradable derivatives of chitin which are soluble in aqueous solutions containing dilute acids such as acetic acid. This material has the advantage of requiring no reoperation for its removal since it would be degraded and absorbed after completing its function in vivo. These materials may be in the form of a visco-elastic fluid, a gel, a film or a membrane.

25 Claims, No Drawings