United States Patent [19]

Shaw et al.

[11] **Patent Number: 4,790,991**

[45] **Date of Patent: Dec. 13, 1988**

[54] **INGESTIBLE AGGREGATE AND DELIVERY SYSTEM PREPARED THEREFROM**

[75] Inventors: **James J. Shaw**, Morristown; **Shri C. Sharma**, Mendham, both of N.J.

[73] Assignee: **Warner-Lambert Company**, Morris Plains, N.J.

[21] Appl. No.: **161,541**

[22] Filed: **Feb. 29, 1988**

Related U.S. Application Data

[62] Division of Ser. No. 698,511, Feb. 5, 1985, Pat. No. 4,747,881.

[51] **Int. Cl.**[4] **A23C 1/29**; A61K 9/16

[52] **U.S. Cl.** **424/441**; 514/819; 514/838; 514/824; 426/2; 426/74

[58] **Field of Search** 514/819, 838, 824; 424/441; 426/2, 74

[56] **References Cited**

U.S. PATENT DOCUMENTS

2,441,927	5/1948	Adams	106/209
2,444,412	7/1948	Swanson	106/209
3,308,020	3/1967	Wolf et al.	424/78
3,383,281	5/1968	Wolf et al.	424/78
3,499,960	3/1970	Macek et al.	514/974
3,780,171	12/1973	Irrascher et al.	424/79
3,821,414	6/1974	Monti	514/780
3,827,899	8/1974	Zirlin	106/209
3,843,819	10/1974	Rostagno	426/363
3,907,983	9/1975	Seth	514/951
3,914,456	10/1975	Norsby	426/579
3,959,472	5/1976	Cannalonga et al.	514/951
3,970,750	7/1976	Brockemeyer et al.	424/153
3,974,272	8/1976	Polli et al.	424/78
4,041,153	8/1977	Howard	424/131
4,064,234	12/1977	Howard	424/157
4,140,756	2/1979	Gallian	424/475

(List continued on next page.)

FOREIGN PATENT DOCUMENTS

2629773	1/1978	Fed. Rep. of Germany .
7932	5/1970	France .
58-39608	3/1983	Japan .
59-187744	10/1984	Japan .
WO80/00658	4/1980	PCT Int'l Appl. .
490001	8/1938	United Kingdom .
929391	6/1963	United Kingdom .
1132233	10/1968	United Kingdom .
1181003	2/1970	United Kingdom .
1262556	2/1972	United Kingdom .
1446352	8/1976	United Kingdom .
1573487	8/1980	United Kingdom .
2050828A	1/1981	United Kingdom .

OTHER PUBLICATIONS

Arnold, J., et al., "Bioavailability and Pharmacokinetics of a New Slow-Release Potassium Chloride Capsule", *J. Pharm. Sci.*, 1980, 69/12, pp. 1416–1418.

Costa, F. V., et al., "Efficacy and Tolerability of a New Microencapsulated Potassium Chloride in Hypertensive Patients", *Curr. Thera. Res.*, 1983, 33/611, pp. 1112–1119.

Primary Examiner—Ronald W. Griffin

Attorney, Agent, or Firm—Daniel A. Scola, Jr.; Sandra Gusciora Field

[57] **ABSTRACT**

The present invention relates to an ingestible aggregate comprising a pre-swelled substantially anhydrous hydrocolloid and a substrate. More particularly this invention relates to an aggregate having as a substrate a dietary fiber and/or drug wherein the composition can be administered in a therapeutically effective amount. Hydrocolloids useful include natural and modified gums, celluloses, modified celluloses, pectins, mucillages, modified starches, noncellulose polysaccharides, algal polysaccharides and mixtures thereof. The aggregate should be in the size range of about 4 to about 70 U.S. mesh. The unpleasant taste and mouthfeel of the fiber and/or drug is effectively masked and substantial hydration is delayed until the compositions reaches the stomach. The compositions are substantially more palatable, devoid of graininess, bitterness or fibrous texture. The pleasant taste of the composition encourages patient compliance with their fiber or drug therapy.

9 Claims, 2 Drawing Sheets