US005397778A

United States Patent [19]

Forse et al.

[11] Patent Number: 5,397,778

[45] Date of Patent: Mar. 14, 1995

[54] **ENTERAL FORMULATIONS FOR TREATMENT OF INFLAMMATION AND INFECTION**

[75] Inventors: **R. Armour Forse**, Brookline; **Sambasiva Chavali**, Boston, both of Mass.

[73] Assignee: **New England Deaconess Hospital Corporation**, Boston, Mass.

[21] Appl. No.: **228,599**

[22] Filed: **Apr. 15, 1994**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 201,682, Feb. 25, 1994.

[51] **Int. Cl.**[6] **A61K 31/38**

[52] **U.S. Cl.** **514/198**; 424/195.1; 424/DIG. 13; 426/804; 426/810; 514/464; 514/468; 514/783; 514/825; 514/886; 514/887; 514/904; 514/905

[58] **Field of Search** ..... 424/195.1, DIG. 13; 514/198, 464, 468, 783, 825, 886, 887, 904, 905; 426/804, 810

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,901,875	8/1975	Park	424/195.1
3,920,440	11/1975	Takaoka et al.	71/88
4,317,816	3/1982	Arichi et al.	424/195.1
4,339,442	7/1982	Takemoto et al.	536/4.1
4,375,480	3/1983	Soma	514/844
4,427,694	1/1984	Benecke et al.	424/195.1
4,442,092	4/1984	McBrayer	424/195.1
4,501,734	2/1985	Tanaka et al.	424/195.1
4,649,206	3/1987	Namiki et al.	549/435
4,708,820	11/1987	Namiki et al.	426/542
4,722,941	2/1988	Eckert et al.	514/784
4,752,618	6/1988	Mascioli et al.	514/560
4,755,504	7/1988	Liu	514/26
4,767,626	8/1988	Cheng	424/195.1
4,774,229	9/1988	Jordan	514/25
4,774,343	9/1988	Namiki et al.	549/435
4,780,475	10/1988	Cerra et al.	514/561
4,803,153	2/1989	Shibata et al.	435/2
4,810,726	3/1989	Bistrian et al.	514/943
4,920,098	4/1990	Cotter et al.	514/23
4,966,893	10/1990	Pang et al.	514/54
4,981,844	1/1991	Alexander et al.	514/21
5,053,387	10/1991	Alexander	514/21
5,055,446	10/1991	Alexander et al.	514/23
5,166,139	11/1992	Bombardelli et al.	514/26
5,180,588	1/1993	Shinmen et al.	424/439
5,209,826	5/1993	Ozaki et al.	435/134
5,211,953	5/1993	Shinmen et al.	424/439
5,214,062	5/1993	Mark et al.	514/560
5,229,136	7/1993	Mark et al.	424/195.1
5,231,085	7/1993	Alexander et al.	514/44
5,260,336	11/1993	Forse et al.	514/560
5,270,335	12/1993	Akimoto et al.	514/470
5,273,965	12/1993	Kensil et al.	514/3

OTHER PUBLICATIONS

Sugano and Akimoto, (1993), "Sesamin: A Multifunctional Gift From Nature", *Journal of Chinese Nutrition Socity,* vol. 18, pp. 1–11.

Shimizu et al., (1993), "Studies on Desaturase Inhibitors of Polyunsaturated Fatty Acid Biosynthesis", Eds: A Sinclair and R. Gibson, *American Oil Chemists' Society,* pp. 37–41.

Hirose et al., (1991), "Inhibition of cholesterol absorption and synthesis in rats by sesamin", *JOurnal of Lipid Research,* vol. 32, pp. 629–638.

Shimizu et al., (1991), "Sesamin Is a Potent and Specific Inhibitor of Δ5 Desaturase in Polyunsaturated Fatty

(List continued on next page.)

Primary Examiner—Ronald W. Griffin

[57] **ABSTRACT**

The present invention features saponin containing enteral formulations for treatment of infection and inflammation. These saponin containing formulations are particularly useful in conjunction with oils rich in ω3 polyunsaturated fatty acids such as fish oils and flax oil but also show benefits with ω6 rich oils such as borage oil, black currant seed oil, canola oil and rapeseed oil. These formulations may also contain a lignan from the sesamin family.

16 Claims, No Drawings