United States Patent [19]

Ward et al.

[11] **Patent Number: 4,678,808**

[45] **Date of Patent: Jul. 7, 1987**

[54] **RAPID ACTING INTRAVENOUS EMULSIONS OF OMEGA-3 FATTY ACID ESTERS**

[75] Inventors: **Michael V. Ward**, McHenry; **Richard Cotter**, Libertyville, both of Ill.

[73] Assignee: **Baxter Travenol Laboratories, Inc.**, Deerfield, Ill.

[21] Appl. No.: **787,741**

[22] Filed: **Oct. 15, 1985**

[51] **Int. Cl.**[4] **A61K 31/20**; A61K 31/685

[52] **U.S. Cl.** **514/560**; 514/77; 514/78; 514/822

[58] **Field of Search** 424/95; 514/560, 77, 514/78

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,513,008 4/1985 Revici et al. 514/560

OTHER PUBLICATIONS

Needleman, P. et al., "Triene Prostaglandins" Proc. Natl. Acad. Sci. 76(2): 944∝948, 1978.

Bang, H. et al., "The Composition of Food Consumed by Greenland Eskimos" Acta Med Scand. 200:69–73, 1976.

Sanders, T. et al., "A Comparison of the Influence on Plasma Lipids on & Platelet . . . " Bnt. J. Nut. 50:521,522, 1983.

Goodnight, S. et al., "The Effects of Dietary ω3 Fatty Acids . . . " Blood, 58(5): 880–885, 1981.

Thorngren, M. et al., "Effects of 11-Week Increase in Dietary Eicosapentaenoic Acid" the Lancet Nov. 1981, 1190.

Lorenz, R. et al., "Platelet Function . . . " Circulation 67(3):504–511, 1983.

Primary Examiner—Johnnie R. Brown

Assistant Examiner—John W. Rollins

Attorney, Agent, or Firm—Susan B. Fentress; Paul C. Flattery

[57] **ABSTRACT**

Described are lipid emulsions of marine oils comprising high concentrations of omega-3-fatty acid esters and low concentrations of free fatty acids for intraveneous administration for the treatment of thrombic disease states. More specifically, a lipid emulsion for parenternal use is provided comprising an emulsifier, water and a marine oil comprising an omega-3-fatty ester in which the concentration of the free fatty acid in the emulsion is below about 5 meq/l.

17 Claims, No Drawings