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[54] **NUTRITIONAL PRODUCT FOR PERSONS HAVING A NEUROLOGICAL INJURY**

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[58] Field of Search **514/2, 21; 426/656, 426/800**

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,263,286	4/1981	Nakajima et al.	424/199
4,874,603	10/1989	Fratzer	424/10
4,880,912	11/1989	Callison	530/361

OTHER PUBLICATIONS

"Moderate hyperglycemia augments ischemic brain damage: A neuropathologic study in the rat", Pulsinelli et al., *Neurology*, 32:1239-1246 (1982).

"The predictive value of cerebral anaerobic metabolism with cerebral infarction after head injury", Robertson et al., *Neurosurgery*, 67:361-368 (1987).

"Ischemic brain damage is still common in non-missile head injury", Graham et al., *Journal of Neurology, Neurosurgery and Psychiatry*, 52:346-350 (1989).

"A stroke model designed for preclinical study", Hsu et al., in *Cerebral Ischemia and Resuscitation*, Schurr et al. editors, CRC Press, pp. 47-57 (1990).

"Cerebral circulation and metabolism after severe traumatic head injury: the elusive role of ischemia", Bouma et al., *Journal of Neurosurgery*, 75:685-693 (1991).

"Hyperglycemia and neurological outcome in patients with head injury", Lam et al., *Journal of Neurosurgery*, 75:545-551 (1991).

"Dietary Nonprotein Calories and Cerebral Infarction Size in Rats", Robertson et al., *Stroke*, vol. 23, No. 4, pp. 564-568 (Apr. 1992).

Sales Literature for OSMOLITE® and OSMOLITE®HN, ©1993, Ross Laboratories.

"Carbohydrate metabolism in man: effect of elective operations and major injury", Long et al., *Journal of Applied Physiology*, vol. 3, No. 1, Jun. 1971, pp. 110-116.

"Effects of Serum Glucose Concentration on Brain Response to Circulatory Arrest", Meyers et al., *Journal of Neuropathology and Experimental Neurology*, 35:301 (1976).

"Clinical restitution following cerebral ischemia in hypo-, normo- and hyperglycemic rats", Siemkowicz et al., *ACTA Neurologica Scandinavica*, 58:1-8 (1978).

"Deleterious Effect of Glucose Pretreatment on Recovery from Diffuse Cerebral Ischemia in the Cat", Ginsberg et al., *Stroke*, vol. II No. 4 (1980) pp. 347-354.

"Brain Lactic Acidosis and Ischemic Cell Damage: 1. Biochemistry and Neurophysiology", Rehncrona et al., *Journal of Cerebral Blood Flow and Metabolism*, 1:297-311 (1981).

"Monoacetin and protein metabolism during parenteral nutrition in burned rats", Maiz et al., *Journal of Biochemistry*, 226:43-50 (1985).

"Ketone precursors as nutritional substrates may improve neurological outcome following ischemia", Peek et al., *Journal of Neurotrauma*, 6:205-206 (1989).

"Intensive Management of Severe Head Injury", Borel et al., *Chest*, Jul. 1990, pp. 180-189.

"Effect of plasma glucose on infarct size in focal cerebral ischemia-reperfusion", Yip et al., *Neurology*, 41:899-905 (1991).

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[57]

ABSTRACT

An enteral nutritional product for a person having a neurological injury is very low in carbohydrate, but high in fat. The fat is supplied by a lipid blend having a ratio of n-6 to n-3 fatty acids in the range of 1 to 6. Preferably the nutritional product contains nutrients having antioxidant properties, for example beta-carotene, vitamin E, vitamin C, taurine, molybdenum and selenium.

19 Claims, 2 Drawing Sheets