US00RE35233E

United States Patent [19]

Smith et al.

[11] E Patent Number: Re. 35,233

[45] Reissued Date of Patent: * May 7, 1996

[54] **METHOD OF TREATING CATABOLIC DYSFUNCTION**

[75] Inventors: **Robert J. Smith; Douglas W. Wilmore**, both of Brookline, Mass.

[73] Assignee: **Brigham and Women's Hospital**, Boston, Mass.

[*] Notice: The portion of the term of this patent subsequent to Aug. 15, 2006, has been disclaimed.

[21] Appl. No.: **180,780**

[22] Filed: **Jan. 10, 1994**

Related U.S. Patent Documents

Reissue of:

[64] Patent No.: **5,039,704**
Issued: **Aug. 13, 1991**
Appl. No.: **261,649**
Filed: **Oct. 24, 1988**

U.S. Applications:

[60] Continuation of Ser. No. 851,282, Mar. 4, 1992, abandoned, which is a division of Ser. No. 906,530, Sep. 12, 1986, Pat. No. 4,857,655, which is a continuation-in-part of Ser. No. 775,214, Sep. 12, 1985, abandoned.

[51] **Int. Cl.**[6] **A61K 31/195**

[52] **U.S. Cl.** **514/563**

[58] **Field of Search** 514/563

[56] **References Cited**

U.S. PATENT DOCUMENTS

1,909,591	5/1933	Nevin	167/55
2,283,817	5/1942	Martin et al.	167/55
2,662,046	12/1953	Howe et al.	167/58
2,868,693	1/1959	Shive et al.	167/55
3,195,778	7/1965	Coates et al.	222/80
3,217,711	11/1965	Pecina et al.	128/214
3,574,857	4/1971	Cevallos et al.	424/319
3,701,666	10/1972	Wimitz et al.	99/1
3,793,450	2/1974	Schnell et al.	424/195
3,832,465	8/1974	Ghadimi et al.	424/177
3,920,838	11/1975	Flatt et al.	424/319
3,950,529	4/1976	Fischer et al.	514/400
3,982,534	9/1976	Buckman	128/214
3,988,466	10/1976	Takagi et al.	424/274
4,200,095	4/1980	Reti	128/214
4,265,240	5/1981	Jenkins	128/214
4,334,535	6/1982	Wilson et al.	128/214
4,396,383	8/1983	Hart	604/56
4,857,555	8/1989	Smith et al.	514/563

FOREIGN PATENT DOCUMENTS

1285491	7/1991	Canada	167/261
0059694	9/1982	European Pat. Off.	5/14
0087750	9/1983	European Pat. Off. .	
3206784	2/1982	Germany	37/18
59-27822	2/1984	Japan .	

OTHER PUBLICATIONS

Milakofsky, L., et al., *Life Sci.* 36:753–761 (1985).
Roth, E., et al., *Bio. Abs.* 72:Abstr. 25963 (1980).
Clowes, G. H., et al., *Surgery* 88:531–543 (1980).
Ohta, H., et al., *Neuropharmacology* 24:445–451 (1985).
Schwartau, M., et al., *Z. Ernaehrungswiss* 23:206–218 (1984).
Derr, R. F., et al., *Bio. Abs.* 72:Abstr. 47176 (1981).
Schrek, R., et al., *J. Natl. Cancer Inst.* 51:1103–1107 (1973).
Zanello, M. E., et al., *Bio. Abs.* 70:Abstr. 52747 (1980).
Bergner, H., et al., *Bio. Abs.* 79:Abstr. 88557 (1985).
Okabe, S., et al., *Digestion* 14:325–331 (1976).
Harada et al., *Folia Pharmacol. JPN* 69:322(P) (1976); see also *Bio. Abs.* 11:24358 (1973).
Heath, D. F., et al., *Biochem. J.* 125:765–771 (1971).
Albers, S., et al., *Chem. Abs.* 102:Abstr. 23355h (1985).
Elia, M., et al., *Chem. Abs.* 103:Abstr. 102688t (1985).
Moyer, M. P., et al., *Chem. Abs.* 104:Abstr. 219523x (1986).
Viallard, V., et al., *Bio. Abs.* 104:Abstr. 127504p (1986).
Tischler, M. E., et al., *Bio. Abs.* 71:Abstr. 14875 (1980).
Hong, C. Z., et al., *Bio. Abs.* 78:Abstr. 70581 (1984).
Crawford, J., et al., *Bio. Reviews* 31:29511 (1986).
Smith, R. J., et al., *Clinical Research* 34:393A (1986).
Longton, R. W., et al., *Bio. Reviews* 10:24019 (1973).
Durschlag, R. P., et al., *Am. J. Physiol.* 248:C422–C448 (1985).
Newsholme, E. A., et al., *Bioscience Reports* 5:393–400 (1985).
Cersosimo, P. E., et al., *Amer. J. Physiol.* 250:E622–E628 (1986).
Hambleton, P., et al., *Brit. J. Exp. Path.* 61:208–216 (1980).
Chipponi, J. X., et al., *Amer. J. of Clinical Nutrition* 35:1112–1116 (1982).
Physicians Desk Reference—1972—pp. 705–707.
Physicians Desk Reference—1983—pp. 1418–1421.
Physicians Desk Reference—1987—pp. 1419–1422.
Roth, E., et al., *Bio. Abs.* 80:Abst. 96470 (1985).
Ivanova, I. A., et al., *Bio. Abs.* 80:Abstr. 34601 (1985).
Roth, E., et al., *Bio. Abs.* 80:Abstr. 96352 (1985).
Smith, R. J., et al., *J. Cellular Physiol.* 120:197–203 (1984).
Aoki, T. T., et al., *J. Clin. Invest.* 68:1522–1528 (1981).
Smith, R. J., et al., *Diabetes* 31:P24A (1982).
Durschlag, R. P., et al., *J. Fed. Proced.* 42:996 (1983).
Smith, R. J., et al., *Diabetes* 33:Suppl., 2A (1984).
Souba, W. W., et al., *Metabolism* 34:450–456 (1985).
Furst, P., et al., *Acta Chirugica Scand.*, suppl. 494:136–138 (1979).
Hanson, P. J., et al., *Biochem. J.* 166:509–519 (1977).
Korein, J., *N.E.J. Medicine* 301:1066 (1979).
Korein, J., *Neurology* 27:899–900 (1977).

(List continued on next page.)

Primary Examiner—Raymond Henley, III
Assistant Examiner—K. Weddington
Attorney, Agent, or Firm—Sterne, Kessler, Goldstein & Fox

[57] **ABSTRACT**

The invention relates to a method of treating a catabolic dysfunction in an animal, which comprises administering to an animal a therapeutically effective amount of glutamine, or an analog thereof.

10 Claims, 11 Drawing Sheets