US005468476A

United States Patent [19]

Ahluwalia et al.

[11] **Patent Number: 5,468,476**

[45] **Date of Patent: Nov. 21, 1995**

[54] **REDUCTION OF HAIR GROWTH**

[76] Inventors: **Gurpreet S. Ahluwalia**, 8632 Stable View Ct., Gaithersburg, Md. 20879; **Douglas Shander**, 16112 Howard Landing Dr., Gaithersburg, Md. 20878; **James P. Henry**, 6776 Wood Duck Ct., Frederick, Md. 21701

[21] Appl. No.: **213,931**

[22] Filed: **Mar. 16, 1994**

[51] **Int. Cl.**[6] **A61K 7/06**; A61K 7/15; A61K 7/155

[52] **U.S. Cl.** **424/73**; 8/94.16; 435/265; 514/557; 514/844; 514/852; 514/880; 424/70.1; 424/62; 424/69

[58] **Field of Search** 424/70.1, 73

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,426,137	2/1969	Philpitt et al.	424/330
4,039,669	8/1977	Beyler et al.	424/243
4,139,638	2/1979	Neri et al.	424/324
4,161,540	7/1979	Neri et al.	424/324
4,191,775	3/1980	Glen	424/304
4,269,831	5/1981	Ferrari et al.	424/241
4,344,941	8/1982	Wiechert et al.	424/243
4,370,315	1/1983	Greff et al.	424/94
4,439,432	3/1984	Peat	424/240
4,720,489	1/1988	Shander	514/171
4,885,289	12/1989	Breuer et al.	514/170
5,095,007	3/1992	Ahluwalia	514/23
5,096,911	3/1992	Ahluwalia et al.	514/380
5,132,293	7/1992	Shander et al.	514/46
5,143,925	9/1992	Shander et al.	514/378
5,271,942	12/1993	Heverhagen	424/451

FOREIGN PATENT DOCUMENTS

413528	2/1991	European Pat. Off. .
0446699A1	9/1991	European Pat. Off. .
0532219A2	3/1993	European Pat. Off. .
1458349	12/1976	United Kingdom .

OTHER PUBLICATIONS

Yu et al. CA. 115:189747F of EP 413528 (Feb. 20, 1991) (describes homoarginine for scalp and for skin (dandruff, skin disorders).

Messenger, The Journal of Investigative Dermatology, vol. 101, No. 1, Supplement, Jul. 1993, pp. 4S–9S.

Sato, Biology and Disease of the Hair, 1975, pp. 3–13.

Moncada et al., Pharmacological Reviews, vol. 43, No. 2, 1991, pp. 109–142.

Rees et al., Br. J. Pharmacol. (1990), 101, 746–752.

Radermacher et al., Effect of Arginine Depletion on Glomerular and Tubular Kidney Function: Studies in Isolate Perfused Rat Kidneys, 1991, pp. F779–F786.

Olken et al., J. Med. Chem., 1992, 35, 1137–1144.

McCall et al., Br. J. Pharmacol. (1991), 102, 234–238.

Stuehr et al., The FASEB Journal, vol. 5, Jan., 1991, pp. 98–103.

Simpson et al., Bristish Journal of Dermatology, (1979) 100, 687–692.

Burdick et al., Br. J. Derm. (1970) 82, Supplement 6, 19–25.

Goos et al., Arch. Dermatol. Res. (1982) 273:333–341.

Girard et al., Arch. Dermatol. Res. 269, 281–290 (1980).

Champion, The Medical Journal of Australia, vol. 149, No. 4, Aug. 15, 1988, pp. 203–213.

Primary Examiner—Shep K. Rose
Attorney, Agent, or Firm—Fish & Richardson

[57] **ABSTRACT**

Mammalian hair growth is reduced by applying to the skin an inhibitor of nitric oxide synthetase.

25 Claims, No Drawings