United States Patent [19]

Grollier

[11] **Patent Number: 4,968,685**

[45] **Date of Patent: Nov. 6, 1990**

[54] **COMPOSITION FOR INDUCING AND STIMULATING HAIR GROWTH AND RETARDING ITS LOSS, BASED ON NICOTINIC ESTERS AND PYRIMIDINE DERIVATIVES**

[75] Inventor: **Jean F. Grollier**, Paris, France

[73] Assignee: **L'Oreal**, Paris, France

[21] Appl. No.: **93,709**

[22] Filed: **Sep. 8, 1987**

[30] **Foreign Application Priority Data**

Sep. 8, 1986 [LU] Luxembourg 86574

[51] **Int. Cl.**[5] **A61K 7/06**; A61K 9/10; A61K 31/505; A61K 31/44

[52] **U.S. Cl.** **514/256**; 514/275; 514/356; 514/880; 514/881

[58] **Field of Search** 514/356, 256, 275, 880, 514/881

[56] **References Cited**

U.S. PATENT DOCUMENTS

2,431,558	11/1947	Huber	514/356
3,168,438	2/1965	Halpern	514/356
3,461,461	8/1969	Anthony et al.	544/323
4,139,619	2/1979	Chidsey, III	514/275
4,329,338	5/1982	Szego et al.	424/180
4,596,812	6/1986	Chidsey, III et al.	514/256

FOREIGN PATENT DOCUMENTS

188793	7/1986	European Pat. Off.	424/70
47-47663	12/1972	Japan	514/356
58-88307	5/1983	Japan	424/70
88307	5/1983	Japan	514/880
135409	6/1987	Japan	514/880
230710	10/1987	Japan	514/880
WO83/2558	8/1983	PCT Int'l Appl.	424/70
2096605	10/1982	United Kingdom	514/356

OTHER PUBLICATIONS

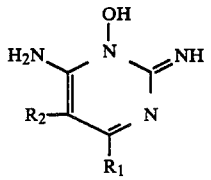
Current Therapy, pp. 599–602 (1984).
Current Therapy, p. 662 (1981).
Patent Abstracts of Japan, vol. 7, No. 185 (C-181) [1330], Aug. 13, 1983.

Primary Examiner—Dale R. Ore

Attorney, Agent, or Firm—Fleit, Jacobson, Cohn, Price, Holman & Stern

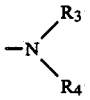
[57] **ABSTRACT**

The invention relates to a composition for inducing and stimulating hair growth and retarding its loss, containing, in a cosmetically or pharmaceutically acceptable medium, at least one pyrimidine derivative corresponding to the formula (I):



(I)

in which R_1 denotes a group



in which R_3 and R_4 can be chosen from hydrogen, an alkyl group preferably having 1 to 4 carbon atoms, and an alkenyl, alkylaryl or lower cycloalkyl group, and R_3 and R_4 can also form a heterocyclic ring with the nitrogen atom to which they are attached, it being possible for this heterocyclic ring to be chosen, inter alia, from aziridinyl, azetidinyl, pyrrolidinyl, piperidyl, hexahydroazepinyl, heptamethyleneimine, octamethyleneimine, morpholine and 4-(lower alkyl)piperazidinyl groups, it being possible for the heterocyclic groups to be substituted on the carbon atoms with one to three lower alkyl, hydroxyl or alkoxy groups; the group R_2 is chosen from hydrogen and an alkyl, alkenyl, alkylalkoxy, cycloalkyl, aryl, alkylaryl, arylalkyl, alkylarylalkyl, alkoxyarylalkyl and lower haloarylalkyl group, or one of its addition salts with cosmetically or pharmaceutically acceptable acids, and at least one nicotinic ester.

11 Claims, No Drawings