(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
1 February 2001 (01.02.2001)

PCT

(10) International Publication Number
WO 01/07086 A1

(51) International Patent Classification[7]: A61K 47/18, 47/10

(21) International Application Number: PCT/US00/20040

(22) International Filing Date: 21 July 2000 (21.07.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/228,815 22 July 1999 (22.07.1999) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US 09/359,063 (CON)
Filed on 22 July 1999 (22.07.1999)

(71) Applicant *(for all designated States except US)*: AVENTIS PHARMACEUTICALS, INC. [US/US]; Route 202-206, P.O. Box 6800, Bridgewater, NJ 08807 (US).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: GAYED, Atef [US/US]; 4820 W. 121st. St., Overland Park, KS 66209 (US).

(74) Agent: DAVIES, Tracey, B.; Vinson & Elkins L.L.P., 2300 First City Tower, 1001 Fannin, Houston, TX 77002-6760 (US).

(81) Designated States *(national)*: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *With international search report.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 01/07086 A1

(54) Title: PRESERVED PHARMACEUTICAL FORMULATIONS

(57) Abstract: The present invention is directed to the use of the benzethonium chloride, alone or in combination with phenoxyethanol or phenyl ethyl alcohol, to provide anti-microbial activity in pharmaceutical compositions. The present invention also provides methods of using benzethonium chloride, alone or in combination with phenoxyethanol or phenyl ethyl alcohol, to inhibit microbial growth in pharmaceutical compositions.