21/01/03

20030020003

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

(19) World Intellectual Property Organization
International Bureau

162162

(43) International Publication Date
28 November 2002 (28.11.2002)

PCT

(10) International Publication Number
WO 02/094342 A3

(51) International Patent Classification[7]: A61M 11/00

(21) International Application Number: PCT/US02/16233

(22) International Filing Date: 21 May 2002 (21.05.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/292,783 21 May 2001 (21.05.2001) US

(71) Applicant *(for all designated States except US)*: **VAPOTRONICS, INC.** [US/US]; 2683 Via De La valle, #G402, Del Mar, CA 92014 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **GOODALL, Stephen, Francis** [AU/AU]; 7 Salm Ct., Carindale, QLD 4152 (AU). **WATERS, Michael, John** [AU/US]; 2683 Via de La Valle, #G402, Del Mar, CA 92014 (US). **MAHLER, Stephen, Michael** [AU/US]; 2683 Via De La Valle, #G402, Del Mar, CA 92014 (US). **CHAN, Hak-Kim** [AU/US]; 2683 Via De La Valle, #G402, Del Mar, CA 92014 (US). **CHEW, Nora, Y.K.** [AU/US]; 2683 Via De La Valle, #G402, Del Mar, CA 92014 (US).

(74) Agents: **DUFT, Bradford, J.** et al.; Brobeck, Phleger & Harrison LLP, 12390 El Camino Real, San Diego, CA 92130 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, 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, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

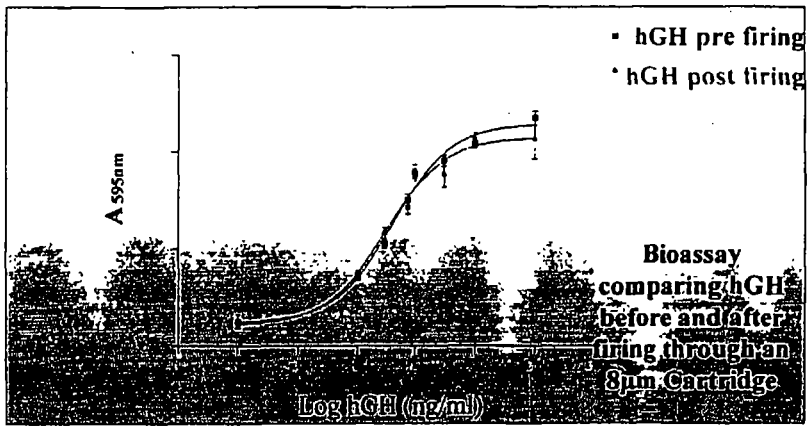
(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,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

Published:
— *with international search report*

(88) Date of publication of the international search report:
20 March 2003

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.

(54) Title: COMPOSITIONS FOR PROTEIN DELIVERY VIA THE PULMONARY ROUTE



(57) Abstract: Novel formulations comprising therapeutic agents, a surface tension-controlling agent, and a component that comprises both a humectant and a viscosity-controlling agent for use in thermal droplet ejecting devices are disclosed. The formulations are useful for maintaining controlled and reliable dosage of the therapeutic agent via pulmonary delivery.

WO 02/094342 A3

ACTION