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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 October 2003 (23.10.2003)

PCT

(10) International Publication Number
WO 03/086516 A1

(51) International Patent Classification[7]: A61M 15/00

(21) International Application Number: PCT/SE03/00540

(22) International Filing Date: 4 April 2003 (04.04.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0201125-2 12 April 2002 (12.04.2002) SE

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(81) Designated States *(national)*: AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), 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, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, 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, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, 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.

(54) Title: THERAPEUTIC DRY POWDER PREPARATION

(57) Abstract: A therapeutic dry powder preparation and a method of administering such a preparation are disclosed for effectively de-aggregating and dispersing into air a dose of medication powder in an administration the dose to a user. The present dry powder preparation and method do not require other sources of energy besides the power of an inhalation effort by a user to produce a very high degree of de-aggregation and efficient dispersal into air of the dry powder medication dose. Utilizing an effort of sucking air through a nozzle, the particles of the therapeutic powder dose, made available to the nozzle, are gradually de-aggregated and dispersed into a stream of air entering the nozzle. The gradual de-aggregation and dispersal is produced by an air-razor effect due to a relative motion introduced between the nozzle and the powder dose. The nozzle is generally positioned outside the powder area and not accessing the powder until the air stream into the nozzle, created by the suction, has passed a threshold flow velocity. Coincidental with the application of the suction the relative motion will begin such that the nozzle traverses the powder dose gradually. Shearing stress and inertia of the applied air-stream is so powerful that particles in the particle aggregates of the powder dose adjacent to the inlet of the moving nozzle are released, de-aggregated to a very high degree as well as dispersed and then subsequently entrained in the created air stream going through the nozzle to the inhaling user.

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