

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
21 December 2007 (21.12.2007)

PCT

(10) International Publication Number
WO 2007/144005 A1

(51) International Patent Classification:

C07D 295/08 (2006.01) **A61P 25/22** (2006.01)
A61K 31/495 (2006.01) **A61P 25/32** (2006.01)
A61P 25/24 (2006.01) **A61P 25/34** (2006.01)
A61P 25/28 (2006.01) **A61P 25/36** (2006.01)
A61P 25/18 (2006.01)

[DK/DK]; Hillerødsgade 116, 3.th, DK-2400 Copenhagen NV (DK). **MEALY, Michael, J.** [US/DK]; Lejrevej 32B, Allerslev, DK-4320 Lejre (DK). **ROCK, Michael, Harold** [GB/DK]; Risbjergvej 28, DK-2650 Hvidovre (DK). **BRODERSEN, Jørgen** [DK/DK]; Munkevænget 34, DK-4300 Holbæk (DK). **JØRGENSEN, Morten** [DK/DK]; Aldershvilevej 94, DK-2880 Bagsværd (DK). **MOORE, Nicholas** [GB/US]; 441 George St, Ridgewood, New Jersey 07450 (US).

(21) International Application Number:

PCT/DK2007/050075

(22) International Filing Date: 15 June 2007 (15.06.2007)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

PA 2006 00824	16 June 2006 (16.06.2006)	DK
60/805,014	16 June 2006 (16.06.2006)	US
PA 2006 01223	22 September 2006 (22.09.2006)	DK
60/826,666	22 September 2006 (22.09.2006)	US
PA 2006 01384	25 October 2006 (25.10.2006)	DK
60/862,826	25 October 2006 (25.10.2006)	US
PA 2007 00427	20 March 2007 (20.03.2007)	DK

(71) Applicant (for all designated States except US): **H. LUNDBECK A/S** [DK/DK]; Ottiliavej 9, DK-2500 Valby-Copenhagen (DK).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BANG-ANDERSEN, Benny** [DK/DK]; Lillegrund 33, DK-2300 Copenhagen S (DK). **FALDT, André** [DK/DK]; Vejlebrovej 14H, DK-2635 Ishøj (DK). **MØRK, Arne** [DK/DK]; Parklodden 23, DK-2760 Måløv (DK). **LOPEZ DE DIEGO, Heidi** [DK/DK]; Hælderne 5, DK-2850 Nærum (DK). **HOLM, René** [DK/DK]; Bakkeager 11, DK-4040 Jyllinge (DK). **STENSBOEL, Tine, Bryan** [DK/DK]; Evavej 21, DK-3500 Værløse (DK). **RINGGAARD, Lone, Munch**

(74) Common Representative: **H. LUNDBECK A/S**; Corporate Patents, Ottiliavej 9, DK-2500 Valby-Copenhagen (DK).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

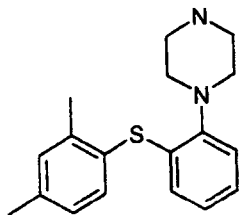
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (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: 1- [2- (2, 4-DIMETHYLPHENYLSULFANYL) -PHENYL] PIPERAZINE AS A COMPOUND WITH COMBINED SEROTONIN REUPTAKE, 5-HT₃ AND 5-HT_{1A} ACTIVITY FOR THE TREATMENT OF COGNITIVE IMPAIRMENT



(57) Abstract: 1-[2-(2,4-dimethylphenylsulphonyl)phenyl]piperazine exhibits potent activity on SERT, 5-HT₃ and 5-HT_{1A} and may as such be useful for the treatment of cognitive impairment, especially in depressed patients.