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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 April 2006 (20.04.2006)

PCT

(10) International Publication Number
WO 2006/040038 A1

(51) International Patent Classification:
A61K 31/5517 (2006.01) *A61P 25/22* (2006.01)
A61P 25/00 (2006.01) *A61P 25/28* (2006.01)
A61P 25/18 (2006.01) *A61P 43/00* (2006.01)

(21) International Application Number:
PCT/EP2005/010655

(22) International Filing Date: 4 October 2005 (04.10.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
04105000.6 12 October 2004 (12.10.2004) EP

(71) Applicant *(for all designated States except US)*: **F.HOFFMANN-LA ROCHE AG** [CH/CH]; Grenzacherstrase 124, CH-4070 Basel (CH).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **KNUST, Henner** [DE/DE]; Untere Dorfstrasse 20, 79618 Rheinfelden (DE). **STADLER, Heinz** [CH/CH]; Waldhofstrasse 37, CH-4310 Rheinfelden (CH). **THOMAS, Andrew, William** [GB/CH]; Zwinglistrasse 4, CH-4127 Birsfelden (CH).

(74) Agent: **POPPE, Regina**; Grenzacherstrasse 124, CH-4070 Basel (CH).

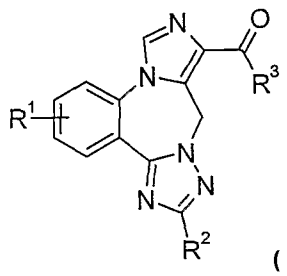
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, 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:** IMIDAZO [1, 5-A]TRIAZOLO[1, 5-D]BENZODIAZEPINE DERIVATIVES FOR THE TREATMENT OF COGNITIVE DISORDERS



(I)

(57) **Abstract:** The present invention is concerned with the use of substituted imidazo [1,5-a] [1,2,4]triazolo[1,5-d] [1,4]benzodiazepine derivatives of the following formula (I); wherein R^1 is halogen, lower alkyl, lower alkynyl, cycloalkyl, lower alkoxy, OCF_3, -NHR, - NHC(O)R or $-NHSO_2R$; R^2 is hydrogen, methyl or aryl, which is unsubstituted or substituted by one or two substituents, selected from the group consisting of halogen or lower alkoxy; R^3 is hydrogen, lower alkyl, lower alkenyl, cycloalkyl, lower alkoxy, $-O(CH_2)_{n+1}$-Olower alkyl, $-(CH_2)_n$-aryl, which is optionally substituted by lower alkyl or halogen, heteroaryl, -NHR, $-NR_2$, wherein R_2 may be the same or different, or is - $NHCH_2C$=-CH, or pyrrolidin-1-one; R is hydrogen, lower alkyl, lower alkyl substituted by halogen, heteroaryl, $-(CH2)_nO$-lower alkyl, -NH-lower alkyl, cycloalkyl or aryl, n is 0, 1, 2 or 3; and with their pharmaceutically acceptable acid addition salts for the manufacture of medicaments for the treatment of cognitive enhance or for the treatment of cognitive disorders, anxiety or schizophrenia. The most preferred indication is Alzheimer's disease.

WO 2006/040038 A1