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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
28 September 2006 (28.09.2006)

PCT

(10) International Publication Number
WO 2006/100036 A1

(51) International Patent Classification:
A61K 31/4025 (2006.01) *A61K 31/422* (2006.01)
A61K 31/341 (2006.01) *A61K 31/4409* (2006.01)
A61K 31/351 (2006.01) *A61K 31/454* (2006.01)
A61K 31/357 (2006.01) *A61K 31/4704* (2006.01)
A61K 31/4035 (2006.01) *A61K 31/506* (2006.01)
A61K 31/404 (2006.01) *A61K 31/5355* (2006.01)
A61K 31/416 (2006.01) *A61K 31/5377* (2006.01)

(21) International Application Number:
PCT/EP2006/002578

(22) International Filing Date: 21 March 2006 (21.03.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0505969.6 23 March 2005 (23.03.2005) GB

(71) Applicant *(for all designated States except AT, US)*: **NOVARTIS AG** [CH/CH]; Lichtstrasse 35, CH-4056 Basel (CH).

(71) Applicant *(for AT only)*: **NOVARTIS PHARMA GMBH** [AT/AT]; Brunner Strasse 59, A-123O Vienna (AT).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **EHRHARDT, Claus** [DE/DE]; Grossmannstrasse 17, 79541 Lörrach (DE). **IRIE, Osamu** [JP/JP]; Novartis Pharma K.K., Tsukuba Research Institute, Okubo 8, Tsukuba, Ibaraki 300-2611 (JP). **LORTHIOIS, Edwige, Liliane, Jeanne** [FR/FR]; 6, rue des Sapins, F-68680 Niffer (FR). **MAIBAUM, Juergen, Klaus** [DE/DE]; Luetemannsweg 14/1, 79576 Weil-Haltingen (DE). **OSTERMANN, Nils** [DE/DE]; Mühlenstrasse 43, 79589 Binzen (DE). **SELLNER, Holger** [DE/CH]; Keltenstrasse 37, CH-4106 Therwil (CH).

(74) Agent: **HILLEBRAND, Dirk**; Novartis AG, Corporate Intellectual Property, CH-4002 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, KN, 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.

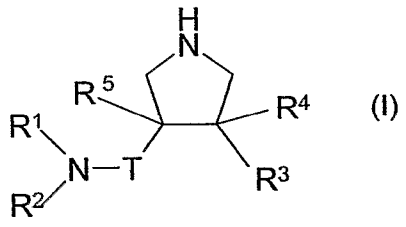
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, 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).

Declaration under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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: 3, 4-SUBSTITUTED PYRROLIDINE DERIVATIVES FOR THE TREATMENT OF HYPERTENSION



(I)

(57) Abstract: The invention relates to the use of (3,4-di-, 3,3,4-tri, 3,4,4-tri- or 3,3,4,4-tetra-)substituted pyrrolidine compounds for the preparation of a pharmaceutical formulation for the treatment of a disease that depends on activity of renin; the use of a compound of that class in the treatment of a disease that depends on activity of renin; compounds that are part of a subclass of these substituted pyrrolidine compounds for use in the diagnostic and therapeutic treatment of a warm-blooded animal, especially for the treatment of a disease (= disorder) that depends on activity of renin; new compounds that are part of a subclass of these substituted pyrrolidine compounds; pharmaceutical formulations comprising said substituted pyrrolidine compounds, and/or a method of treatment comprising administering said substituted pyrrolidine compounds, a method for the manufacture especially of said new substituted pyrrolidine compounds, as well as novel intermediates, starting materials and/or partial steps for their synthesis. The substituted pyrrolidine compounds are of the formula (I), wherein R^1, R^2, R^3, R^4, R^5 and T are defined as in the specification.

WO 2006/100036 A1