



(51) International Patent Classification:

C07D 487/04 (2006.01) A61P 29/00 (2006.01)
C07D 519/00 (2006.01) A61P 31/00 (2006.01)
A61K 31/4985 (2006.01) A61P 35/00 (2006.01)
A61P 19/08 (2006.01) A61P 37/00 (2006.01)

(21) International Application Number:

PCT/EP2012/063552

(22) International Filing Date:

11 July 2012 (11.07.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/509,397 19 July 2011 (19.07.2011) US
11174578.2 19 July 2011 (19.07.2011) EP

(71) Applicant (for all designated States except US): **MSD OSS B.V.** [NL/NL]; Kloosterstraat 6, NL-5349AB Oss (NL).

(72) Inventors; and

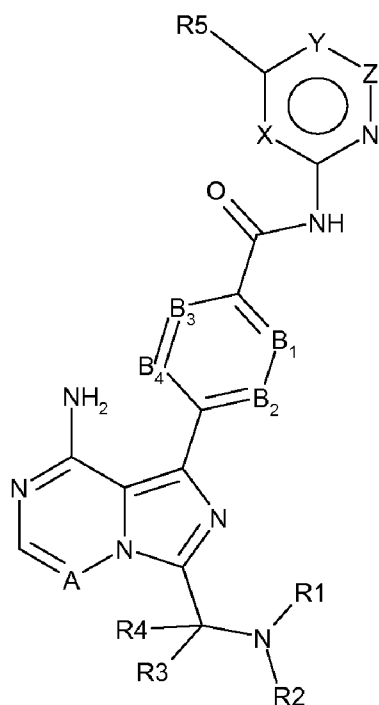
(75) Inventors/Applicants (for US only): **BARF, Tjeerd A.** [NL/NL]; St. Luciastraat 7, NL-5371AS Ravenstein (NL). **JANS, Christiaan, Gerardus, Johannes, Maria** [NL/NL]; Heggerank 134, NL-5342CC Cuijk (NL). **MAN, de Adrianus, Petrus, Antonius** [NL/NL]; N. V. Organon, H.W. Van Heelstraat 4, NL-5327AH Hurwenen (NL). **OUBRIE, Arthur A.** [NL/NL]; Saltshof 1106, NL-6604EB Wijchen (NL). **RAAIJMAKERS, Hans C.A.** [NL/NL]; Eikakkerhoven 26, NL-5242KK Eindhoven (NL). **REWINKEL, Johannes, Bernardus, Maria** [NL/NL]; Molenweg 16, NL-5351EV Berghem (NL). **STERRENBURG, Jan-Gerard** [NL/NL]; Grote Omloop 18, NL-6871TE Renkum (NL). **WIJKMANS, Jacobus C.H.M.** [NL/NL]; N. V. Organon, Oss, NL-5345LR Hurwenen (NL).

(74) Agent: **HORGAN, James Michael Frederic**; Hertford Road, Hoddesdon Hertfordshire EN11 9BU (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,

[Continued on next page]

(54) Title: 4 - IMIDAZOPYRIDAZIN- 1 -YL-BENZAMIDES AND 4 - IMIDAZOTRIAZIN- 1 - YL - BENZAMIDES AS BTK-INHIBITORS



(I)

(57) Abstract: The present invention relates to 6-5 membered fused pyridine ring compounds according to formula (I) or a pharmaceutically acceptable salt thereof or to pharmaceutical compositions comprising these compounds and to their use in therapy. In particular, the present invention relates to the use of 6-5 membered fused pyridine ring compounds according to formula I in the treatment of Brutons Tyrosine Kinase (Btk) mediated disorders.



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, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,

LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report (Art. 21(3))