



(51) International Patent Classification:

C07D 519/00 (2006.01) *C07D 513/04* (2006.01)
A61K 31/433 (2006.01) *A61P 7/02* (2006.01)
A61K 31/4439 (2006.01)

(21) International Application Number:

PCT/US2013/037892

(22) International Filing Date:

24 April 2013 (24.04.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/638,591 26 April 2012 (26.04.2012) US

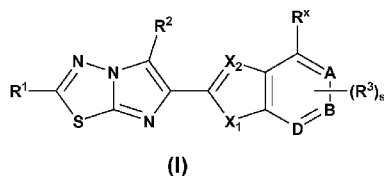
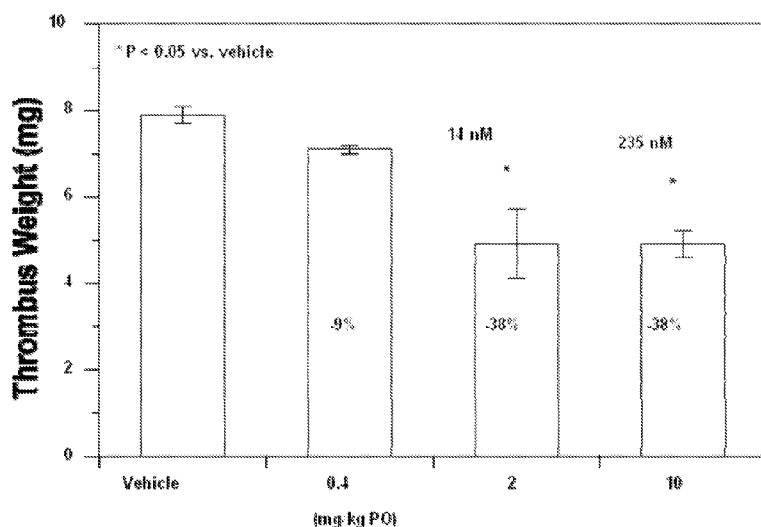
(71) Applicants: **BRISTOL-MYERS SQUIBB COMPANY** [US/US]; P.O. Box 4000, Route 206 and Province Line Road, Princeton, New Jersey 08543-4000 (US). **UNIVERSITE DE MONTREAL** [CA/CA]; 2900 Edouard-Montpetit Boulevard, Montreal, Québec H3T 1J4 (CA).

(72) Inventors: **LAWRENCE, Michael, R.**; c/o Bristol-Myers Squibb Company, 311 Pennington-Rocky Hill Road, Pen-

nington, New Jersey 08534 (US). **MILLER, Michael, M.**; c/o Bristol-Myers Squibb Company, Route 206 & Province Line Road, Princeton, New Jersey 08543 (US). **SEIFERT, Dietmar, Alfred**; 6 Creek View Court, Garnet Valley, Pennsylvania 19061 (US). **POSY, Shoshana, L.**; c/o Bristol-Myers Squibb Company, Route 206 & Province Line Road, Princeton, New Jersey 08543 (US). **WONG, Pancras, C.**; c/o Bristol-Myers Squibb Company, 311 Pennington-Rocky Hill road, Pennington, New Jersey 08534 (US). **BANVILLE, Jacques**; c/o Université de Montreal, 2900 Edouard-Montpetit Boulevard, Montreal, Québec H3T 1J4 (CA). **RUEDIGER, Edward, H.**; c/o Université de Montreal, 2900 Edouard-Montpetit Boulevard, Montreal, Québec H3T 1J4 (CA). **DEON, Daniel, H.**; c/o Université de Montreal, 2900 Edouard-Montpetit Boulevard, Montreal, Québec H3T 1J4 (CA). **MARTEL, Alain**; c/o Université de Montreal, 2900 Edouard-Montpetit Boulevard, Montreal, Québec H3T 1J4 (CA). **TREMBLAY, François**; c/o Université de Montreal, 2900 Edouard-Montpetit Boulevard, Montreal, Québec H3T 1J4 (CA). **GUY, Julia**; c/o Université de Montreal, 2900 Edouard-Montpetit Boulevard, Montreal, Québec H3T 1J4 (CA). **LAVALLEE, Jean-François**; c/o Université de Montreal, 2900 Edouard-Montpetit Boulevard, Montreal,

[Continued on next page]

(54) Title: IMIDAZOTHIADIAZOLE DERIVATIVES AS PROTEASE ACTIVATED RECEPTOR 4 (PAR4) INHIBITORS FOR TREATING PLATELET AGGREGATION



(57) Abstract: The present invention provides imidazothiadiazole compounds of Formula (I) wherein A, B, D, R^x, R¹, R², R³, X₁, X₂ and s are as defined herein, or a stereoisomer, tautomer, pharmaceutically acceptable salt or solvate form thereof, wherein all of the variables are as defined herein. These compounds are inhibitors of platelet aggregation and thus can be used as medications.



Québec H3T 1J4 (CA). **GAGNON, Marc**; c/o Université de Montréal, 2900 Edouard-Montpetit Boulevard, Montréal, Québec H3T 1J4 (CA).

(74) **Agents: BOGIE, Terence, J.** et al.; Bristol-Myers Squibb Company, P.O. Box 4000, Princeton, NJ 08543-4000 (US).

(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, BN, BR, BW, BY, BZ, CA, CH, CL, 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, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, 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))*
- *of inventorship (Rule 4.17(iv))*

Published:

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