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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 February 2015 (26.02.2015)

WIPO | PCT

(10) International Publication Number
WO 2015/027124 A1

(51) International Patent Classification:
C07D 491/048 (2006.01) *A61P 35/00* (2006.01)
C07D 495/04 (2006.01) *A61P 37/02* (2006.01)
A61K 31/4355 (2006.01) *A61P 37/08* (2006.01)
A61K 31/4365 (2006.01) *A61P 9/10* (2006.01)
A61K 31/5025 (2006.01)

(21) International Application Number:
PCT/US2014/052214

(22) International Filing Date:
22 August 2014 (22.08.2014)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/869,442 23 August 2013 (23.08.2013) US

(71) Applicant: **INCYTE CORPORATION** [US/US]; Experimental Station, Route 141 & Henry Clay Road, Building E336/207, Wilmington, Delaware 19880 (US).

(72) Inventors: **LI, Yun-Long**; 1 Pin Oak Drive, Chadds Ford, Pennsylvania 19317 (US). **BURNS, David M.**; 28 William Howard Dr., Glen Mills, Pennsylvania 19342 (US). **FENG, Hao**; 600 Christopher Lane, Aston, Pennsylvania 19014 (US). **HUANG, Taisheng**; 522 Chariot Court, Wilmington, Delaware 19808 (US). **MEI, Song**; 151 Monet Circle, Wilmington, Delaware 19808 (US). **PAN, Jun**; 1295 N. Providence Road, A-101, Media, Pennsylvania 19063 (US). **VECHORKIN, Oleg**; 10 Ball Farm Way, Wilmington, Delaware 19808 (US). **YE, Hai Fen**; 45 West Park Place, Newark, Delaware 19711 (US). **ZHU, Wenyu**; 21 Abel Place, Media, Pennsylvania 19063 (US). **RAFALSKI, Maria**; 908 Fairthorne Avenue, Greenville, Delaware 19807 (US). **WANG, Anlai**; 102 Bunting Drive, Wilmington, Delaware 19808 (US). **XUE, Chu-Biao**; 307 Wellspring Court, Hockessin, Delaware 19707 (US).

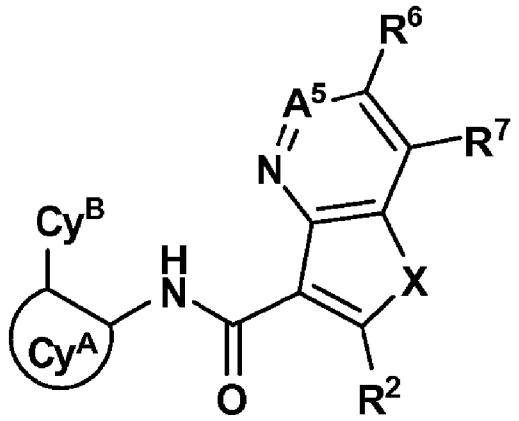
(74) Agent: **PHILLIPS, Eifion**; Fish & Richardson P.C., P.O. Box 1022, Minneapolis, Minnesota 55440-1022 (US).

(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, IR, IS, JP, KE, KG, 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, SA, 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,

[Continued on next page]

(54) Title: FURO- AND THIENO-PYRIDINE CARBOXAMIDE COMPOUNDS USEFUL AS PIM KINASE INHIBITORS



(I)

(57) Abstract: The present disclosure describes furo- and thieno-pyridine carboxamide compounds of Formula (I) or a pharmaceutically acceptable salt thereof, wherein: X is S or 0; A^5 is N or C-R^5. Cy^A is a 5 to 6 membered monocyclic heteroaryl group, wherein the ring atoms of the heteroaryl group forming Cy^A consist of carbon atoms and 1, 2, or 3 heteroatoms selected from N, 0 and S, and wherein the 5 to 6 membered monocyclic heteroaryl group forming Cy^A is unsubstituted or substituted with 1, 2, or 3 R^A; Cy^B is C_{6-10}aryl, C_{3-7}cycloalkyl, 5-10 membered heteroaryl or 4-10 membered heterocycloalkyl wherein the ring atoms of the ring atoms of the heteroaryl or heterocycloalkyl forming Cy^B consist of carbon atoms and 1, 2 or 3 heteroatoms selected from 0, N and S, and wherein each of said C_{6-10}aryl, C_{3-7}cycloalkyl, 5-10 membered heteroaryl or 4-10 membered heterocycloalkyl forming Cy^B is unsubstituted or substituted with 1, 2, 3, 4 or 5 R^B; R^2 is H, halogen or NH_2; and R^5, R^6 and R^7 are as defined in claim 1; The compounds inhibit the activity of the Pim kinases, and are useful in the treatment of diseases related to the activity of Pim kinases including, e.g., cancer and other diseases.

WO 2015/027124 A1

GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, 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, KM, ML, MR, NE, SN, TD, TG).

Published:

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