

(19) World Intellectual Property
Organization
International Bureau



(10) International Publication Number
WO 2013/163190 A8

(43) International Publication Date
31 October 2013 (31.10.2013)

(51) International Patent Classification:

C07D 401/14 (2006.01) C07D 409/14 (2006.01)
C07D 405/14 (2006.01) C07D 413/04 (2006.01)
C07D 413/14 (2006.01) C07D 413/10 (2006.01)
C07D 401/04 (2006.01) C07D 417/04 (2006.01)
C07D 403/04 (2006.01) C07D 417/14 (2006.01)
C07D 403/10 (2006.01) C07D 471/04 (2006.01)
C07D 239/42 (2006.01) C07D 491/048 (2006.01)
C07D 409/04 (2006.01)

(21) International Application Number:

PCT/US2013/037811

(22) International Filing Date:

23 April 2013 (23.04.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/637,512 24 April 2012 (24.04.2012) US
61/725,652 13 November 2012 (13.11.2012) US
61/777,806 12 March 2013 (12.03.2013) US

(71) Applicant: VERTEX PHARMACEUTICALS INCORPORATED [US/US]; 130 Waverly Street, Cambridge, MA 02139 (US).

(72) Inventors: CHARIFSON, Paul, S.; 7 Dartmouth Street, Framingham, MA 01701 (US). COTTRELL, Kevin, Michael; 17b Roberts Road, Cambridge, MA 02138 (US). DENG, Hongbo; 178 Woodland Road, Southborough, MA 01772 (US). DUFFY, John, P.; 175 Carriage Road, Northborough, MA 01532 (US). GAO, Huai; 82 Summer Street, Unit #7, Arlington, MA 02474 (US). GIROUX, Simon; 27 Wheeler Street, Cambridge, MA 02138 (US). GREEN, Jeremy; 125 Lincoln Woods Road, Waltham, MA 02451 (US). JACKSON, Katrina, Lee; 345 Franklin Street, Cambridge, MA 02139 (US). MAXWELL, John, Patrick; 69 Gilford Road, Hingham, MA 02043 (US). MORRIS, Mark, A.; 37 Lowell Street, Somerville, MA 02143 (US). PIERCE, Albert, Charles; 295 Harvard

Street, Apt. 911, Cambridge, MA 02438 (US). WAAL, Nathan, D.; 295 Cardinal Medeiros Avenue, Unit 3, Cambridge, MA 02141 (US). KENNEDY, Joseph, M.; 28 Pleasant Street, Charlestown, MA 02129 (US). LAUFFER, David, J.; 254 Taylor Road, Stow, MA 01775 (US). LEDEBOER, Mark, Willem; 36 Faulkner Hill Road, Acton, MA 01720 (US). LI, Pan; 3 Malt Lane, Lexington, MA 02421 (US). XU, Jinwang; 28 Wesley Road, Framingham, MA 01701 (US).

(74) Agent: PEARSON, Daniel, A.; Vertex Pharmaceuticals Incorporated, 130 Waverly Street, Cambridge, MA 02139 (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).

Published:

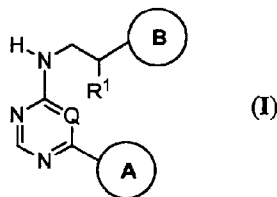
— with international search report (Art. 21(3))

(48) Date of publication of this corrected version:

27 November 2014

[Continued on next page]

(54) Title: DNA-PK INHIBITORS



(57) Abstract: The present invention relates to compounds of following formula (I) useful as inhibitors of DNA-PK. The invention also provides pharmaceutically acceptable compositions comprising said compounds and methods of using the compositions in the treatment of various disease, conditions, or disorders, such as cancer.



(15) Information about Correction:
see Notice of 27 November 2014