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

(19) World Intellectual Property Organization
International Bureau

*G00002*

(43) International Publication Date
1 August 2002 (01.08.2002)

PCT

(10) International Publication Number
WO 02/059111 A3

(51) International Patent Classification[7]: C07D 403/12, A61K 31/517, A61P 35/00

(21) International Application Number: PCT/US01/51120

(22) International Filing Date:
19 December 2001 (19.12.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/257,887 21 December 2000 (21.12.2000) US
60/286,949 27 April 2001 (27.04.2001) US

(71) Applicant *(for all designated States except US)*: **VERTEX PHARMACEUTICALS INCORPORATED** [US/US]; Patent Department, 130 Waverly Street, Cambridge, MA 02139-4242 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **BEBBINGTON, David** [GB/GB]; 6 Linden Close Speen, Newbury, Berkshire, Berkshire RG14 1QA (GB). **CHARRIER, Jean-Damien** [FR/GB]; 2 Easterfield, Grove, Wantage, Oxfordshire OX12 7LL (GB). **DAVIES, Robert** [US/US]; 65 Orient Avenue, Arlington, MA 02474 (US). **GOLEC, Julian** [GB/GB]; 8 Manor Farm, Chapel Road, Ashbury, Wiltshire SN6 8LS (GB). **KAY, David** [GB/GB]; 4 Church Path, Purton, Wiltshire SN5 4DR (GB). **KNEGTEL, Ronald** [DK/GB]; 92 Andersey Way, Abingdon, Wiltshire OX14 5NW (GB). **PATEL, Sanjay** [GB/GB]; 2 Allder Close, Abingdon, Wiltshire OX14 1YG (GB).

(74) Agents: **ROBIDOUX, Andrea** et al.; Vertex Pharmaceuticals Inc., 130 Waverly Street, Cambridge, MA 02139-4242 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

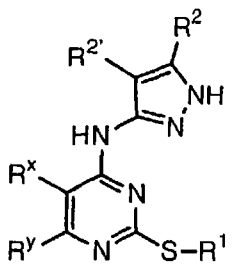
**Published:**
— *with international search report*

(88) Date of publication of the international search report:
9 January 2003

*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.*

*162162*

(54) Title: PYRAZOLE COMPOUNDS USEFUL AS PROTEIN KINASE INHIBITORS



( II a )

(57) Abstract: This invention describes novel pyrazole compounds of formula (IIa): wherein $R^1$ is T-Ring D, wherein Ring D is 5-7 membered monocyclic ring or 8-10 membered bicyclic ring selected from aryl, heteroaryl, heterocyclyl or carbocyclyl; $R^x$ and $R^y$ are taken together with their intervening atoms to form a fused, unsaturated or partially unsaturated, 5-7 membered ring having 0-3 heteroatoms; and $R^2$ and $R^{2'}$ are as described in the specification. The compounds are useful as protein kinase inhibitors, especially as inhibitors of Aurora-2 and GSK-3, for treating diseases such as cancer, diabetes and Alzheimer's disease.

WO 02/059111 A3