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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 February 2001 (22.02.2001)

PCT

(10) International Publication Number
WO 01/12621 A1

(51) International Patent Classification[7]: C07D 401/04, 405/04, 403/04, 413/04, A61K 31/341, 31/4155, 31/4192, 31/42

(21) International Application Number: PCT/US00/22445

(22) International Filing Date: 11 August 2000 (11.08.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/148,795	12 August 1999 (12.08.1999)	US
60/166,922	22 November 1999 (22.11.1999)	US
60/211,517	14 June 2000 (14.06.2000)	US

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

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **GREEN, Jeremy** [US/US]; 21 Greystone Court, Burlington, MA 01803 (US). **BEMIS, Guy** [US/US]; 256 Appleton Street, Arlington, MA 02476 (US). **GRILLOT, Anne-Laure** [FR/US]; 31 Regent Street #3R, Cambridge, MA 02140 (US). **LEDEBOER, Mark** [US/US]; 36 Faulkner Hill Road, Acton, MA 01720 (US). **SALITURO, Francis** [US/US]; 25 Baker Drive, Marlboro, MA 01752 (US). **HARRINGTON, Edmund** [IE/US]; 460 E. 9th Street, South Boston, MA 02127 (US). **GAO, Huai** [CN/US]; 26 Lanes End, Natick, MA 07160 (US). **BAKER, Christopher** [US/US]; 33 Curve Street, Bedford, MA 01730 (US). **CAO, Jingrong** [CN/US]; 45 Madison Avenue, Newton, MA 02460 (US). **HALE, Michael** [US/US]; 42 Sunset Road, Bedford, MA 01730 (US).

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

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, 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, 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, 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), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

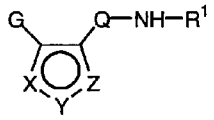
— *With international search report.*

— *Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.*

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.

WO 01/12621 A1

(54) Title: INHIBITORS OF c-JUN N-TERMINAL KINASES (JNK) AND OTHER PROTEIN KINASES



(I)

(57) Abstract: The present invention provides compounds of formula (I) where R^1 is H, $CONH_2$, $T_{(n)}$-R, or $T_{(n)}$-Ar^2, n may be zero or one, and G, XYZ, and Q are as described below. These compounds are inhibitors of protein kinase, particularly inhibitors of JNK, a mammalian protein kinase involved cell proliferation, cell death and response to extracellular stimuli. The invention also relates to methods for producing these inhibitors. The invention also provides pharmaceutical compositions comprising the inhibitors of the invention and methods of utilizing those compositions in the treatment and prevention of various disorders.