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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 May 2009 (22.05.2009)

PCT

(10) International Publication Number
WO 2009/065131 A1

(51) International Patent Classification:
C07D 211/46 (2006.01) *C07D 409/14* (2006.01)
C07D 211/58 (2006.01) *A61K 31/4427* (2006.01)
C07D 401/12 (2006.01) *A61K 31/4523* (2006.01)
C07D 401/14 (2006.01) *A61P 3/00* (2006.01)
C07D 405/14 (2006.01) *A61P 9/00* (2006.01)

(21) International Application Number:
PCT/US2008/083801

(22) International Filing Date:
17 November 2008 (17.11.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/988,721	16 November 2007 (16.11.2007)	US
60/990,554	27 November 2007 (27.11.2007)	US
60/990,558	27 November 2007 (27.11.2007)	US
60/991,189	29 November 2007 (29.11.2007)	US
61/013,924	14 December 2007 (14.12.2007)	US

(71) Applicant *(for all designated States except US)*: **RIGEL PHARMACEUTICALS, INC.** [US/US]; 1180 Veterans Boulevard, South San Francisco, CA 94080 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **HONG, Hui** [CN/US]; 240 Ventura Avenue, Palo Alto, CA 94306 (US). **XU, Xiang** [US/US]; 185 Cymbidium Circle, South San Francisco, CA 94080 (US). **YU, Jiaxin** [CN/US]; 628 Chestnut Street, San Carlos, CA 94070 (US). **SINGH, Rajinder** [US/US]; 1832 Hillman Avenue, Belmont, CA 94002 (US). **DARWISH, Ihab, S.** [US/US]; 4 Azalea Lane, San Carlos, CA 94070 (US). **THOTA, Sambaiah** [IN/US]; 4501 Guiso Common, Fremont, CA 94536 (US).

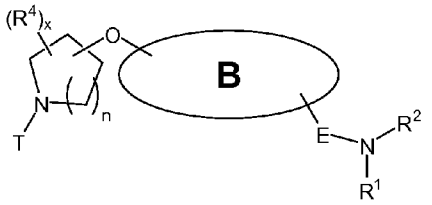
(74) Agent: **SUGGS, James, V.**; Mcdonnell Boehnen Hulbert & Berghoff LLP, 300 South Wacker Drive, Suite 3100, Chicago, IL 60606 (US).

(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, BR, BW, BY, BZ, CA, CH, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, 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*

(54) **Title:** CARBOXAMIDE, SULFONAMIDE AND AMINE COMPOUNDS FOR METABOLIC DISORDERS



(I)

(57) **Abstract:** Disclosed are carboxamide, sulfonamide and amine compounds, as well as pharmaceutical compositions and methods of use. One embodiment is a compound having the structure in which R^1, R^2, R^4, E, T, n and x are as described herein. In certain embodiments, a compound disclosed herein activates the AMPK pathway, and can be used to treat metabolism-related disorders and conditions.

WO 2009/065131 A1