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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
11 February 2010 (11.02.2010)

PCT

(10) International Publication Number
WO 2010/015849 A3

(51) International Patent Classification:
C07D 487/04 (2006.01) *A61P 3/04* (2006.01)
A61K 31/519 (2006.01) *A61P 3/10* (2006.01)

(21) International Application Number:
PCT/GB2009/050970

(22) International Filing Date:
3 August 2009 (03.08.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/085,919 4 August 2008 (04.08.2008) US
61/168,048 9 April 2009 (09.04.2009) US

(71) Applicant *(for all designated States except MG, US)*: **ASTRAZENECA AB** [SE/SE]; S-151 85 Södertälje (SE).

(71) Applicant *(for MG only)*: **ASTRAZENECA UK LIMITED** [GB/GB]; 15 Stanhope Gate, London Greater London W1K 1LN (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **BENNETT, Stuart, Norman, Lile** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield Cheshire SK10 4TG (GB). **BONN, Peter, Gustaf** [SE/SE]; AstraZeneca R & D Mölndal, S-431 83 Mölndal (SE). **BRINK, Mikael, Dan** [SE/SE]; AstraZeneca R & D Mölndal, S-431 83 Mölndal (SE). **BUTLIN, Roger, John** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield Cheshire SK10 4TG (GB). **CAMPBELL, Leonie** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield Cheshire SK10 4TG (GB). **DAVIES, Robert, Darren, Morse** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield Cheshire SK10 4TG (GB). **FÄGERHAG, Jonas, Rickard** [SE/SE]; AstraZeneca R & D Mölndal, S-431 83 Mölndal (SE). **JURVA, Ulrik** [SE/SE]; AstraZeneca R & D Mölndal, S-431 83 Mölndal (SE). **POINTON, Helen, Claire** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield Cheshire SK10 4TG (GB). **ROBB, Graeme, Richard** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield Cheshire SK10 4TG (GB). **SCHNECKE, Volker** [DE/SE]; AstraZeneca R & D Mölndal, S-431 83 Mölndal (SE). **SVENSSON HENRIKSSON, Anette Marie** [SE/SE]; AstraZeneca R & D Mölndal, S-431 83 Mölndal (SE). **WALKER, Rolf, Peter** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield Cheshire SK10 4TG (GB). **WARING, Michael, James** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield Cheshire SK10 4TG (GB). **WESTERLUND, Christer, Ralf** [SE/SE]; AstraZeneca R & D Mölndal, S-431 83 Mölndal (SE).

(74) Agent: **ASTRAZENECA INTELLECTUAL PROPERTY**; AstraZeneca AB, S-151 85 Södertälje (SE).

(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, 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, PE, 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, MK, MT, NL, NO, PL, PT, RO, 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))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
1 April 2010

WO 2010/015849 A3

(54) Title: PYRAZOLO [3,4] PYRIMIDIN-4-YL DERIVATIVES AND THEIR USES TO TREAT DIABETES AND OBESITY

(57) Abstract: A compound of Formula (I) is useful in the treatment or prevention of a disease or medical condition mediated through glucokinase (GLK or GK), leading to a decreased glucose threshold for insulin secretion.