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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
18 May 2006 (18.05.2006)

PCT

(10) International Publication Number
WO 2006/051270 A1

(51) International Patent Classification:
C07D 417/04 (2006.01) *A61K 31/4439* (2006.01)
C07D 417/14 (2006.01) *A61P 35/00* (2006.01)

(21) International Application Number:
PCT/GB2005/004268

(22) International Filing Date:
7 November 2005 (07.11.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0402735-5 9 November 2004 (09.11.2004) SE

(71) Applicant *(for AE, AG, AL, AM, AT, AU, AZ, BA, BB, BE, BF, BG, BJ, BR, BW, BY, BZ, CA, CF, CG, CH, CI, CM, CN, CO, CR, CU, CY, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, FR, GA, GB, GD, GE, GH, GM, GN, GQ, GR, GW, HR, HU, ID, IE, IL, IN, IS, IT, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MC, MD, MK, ML, MN, MR, MW, MX, MZ, NA, NE, NG, NI, NL, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD only)*: **ASTRAZENECA AB** [SE/SE]; S-151 85 Södertälje (SE).

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

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **BENGTSSON, Malena** [SE/SE]; AstraZeneca R & D Lund, S-221 87 Lund (SE). **LARSSON, Joakim** [SE/SE]; AstraZeneca R & D Lund, S-221 87 Lund (SE). **NIKITIDIS, Grigorios** [SE/SE]; AstraZeneca R & D Lund, S-221 87 Lund (SE). **STORM, Peter** [SE/SE]; AstraZeneca R & D Lund, S-221 87 Lund (SE). **BAILEY, John, Peter** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield, Cheshire SK10 4TG (GB). **GRIFFEN, Edward, Jolyon** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield, Cheshire SK10 4TG (GB). **ARNOULD, Jean-Claude** [FR/FR]; AstraZeneca Reims, Z.I. la Pompelle, Cedex 2, F-51689 Reims (FR). **BIRD, Thomas, Geoffrey, Colerick** [GB/FR]; AstraZeneca Reims, Z.I. la Pompelle, Cedex 2, F-51689 Reims (FR).

(74) Agent: **GLOBAL 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, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, HU, IE, IS, IT, LT, LU, LV, MC, NL, 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*

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.

(54) Title: 5-HETEROARYL THIAZOLES AND THEIR USE AS P13K INHIBITORS

(57) Abstract: The invention provides thiazole derivatives of formula (I), or pharmaceutically acceptable salts thereof in which Ring A, R^1, R^2 and R^3 are as defined in the specification; a processes for their preparation; pharmaceutical compositions containing them; and their use in therapy, for example in the treatment of disease mediated by a PI3K enzyme and/or a mTOR kinase.

WO 2006/051270 A1