

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 July 2006 (27.07.2006)

PCT

(10) International Publication Number
WO 2006/077414 A1

(51) International Patent Classification:

C07D 401/14 (2006.01) A61P 35/00 (2006.01)
A61K 31/44 (2006.01) A01N 43/56 (2006.01)

Alistair [GB/GB]; 436 Cambridge Science Park, Milton Road, Cambridge CB4 0QA (GB). **PHILLIPS, Theresa, Rachel** [GB/GB]; 3 Cumberland Drive, Bollington, Macclesfield SK10 5BR (GB).

(21) International Application Number:

PCT/GB2006/000191

(74) Agent: **HUTCHINS, Michael, Richard**; M.R. Hutchins & Co., 23 Mount Sion, Tunbridge Wells, Kent TN1 1TZ (GB).

(22) International Filing Date: 20 January 2006 (20.01.2006)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/646,217	21 January 2005 (21.01.2005)	US
0501480.8	22 January 2005 (22.01.2005)	GB
0501748.8	27 January 2005 (27.01.2005)	GB
60/651,339	9 February 2005 (09.02.2005)	US

(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.

(71) Applicant (for all designated States except US): **ASTEX THERAPEUTICS LIMITED** [GB/GB]; 436 Cambridge Science Park, Milton Road, Cambridge CB4 0QA (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WYATT, Paul, Graham** [GB/GB]; 436 Cambridge Science Park, Milton Road, Cambridge CB4 0QA (GB). **BERDINI, Valerio** [GB/GB]; 436 Cambridge Science Park, Milton Road, Cambridge CB4 0QA (GB). **GILL, Adrian, Liam** [GB/GB]; 436 Cambridge Science Park, Milton Road, Cambridge CB4 0QA (GB). **TREWARTHA, Gary** [GB/GB]; 436 Cambridge Science Park, Milton Road, Cambridge CB4 0QA (GB). **WOODHEAD, Andrew, James** [GB/GB]; 436 Cambridge Science Park, Milton Road, Cambridge CB4 0QA (GB). **NAVARRO, Eva, Figueroa** [ES/GB]; 436 Cambridge Science Park, Milton Road, Cambridge CB4 0QA (GB). **O'BRIEN, Michael,**

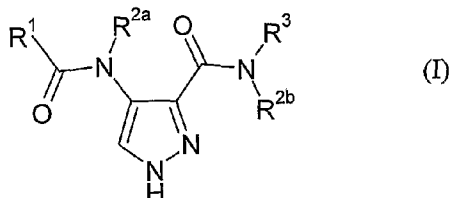
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, 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
- 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.

(54) Title: PYRAZOLE DERIVATIVES FOR THE INHIBITION OF CDK'S AND GSK'S



(57) Abstract: The invention provides compounds of the formula (I), or salts, tautomers, N-oxides or solvates thereof wherein: R1 is selected from: (a) 2,6-dichlorophenyl; (b) 2,6-difluorophenyl; (c) a 2,3,6-trisubstituted phenyl group wherein the substituents for the phenyl group are selected from fluorine, chlorine, methyl and methoxy; (d) a group R0; (e) a group R a; (f) a group Rlb; (g) a group Rlc; (h) a group Rld; and (i) 2,6-difluorophenylamino; wherein R0, R a, R b, R c, R d, R e, R f, R g, R h, R i, R j, R k, R l, R m, R n, R o, R p, R q, R r, R s, R t, R u, R v, R w, R x, R y, R z, R aa, R ab, R ac, R ad, R ae, R af, R ag, R ah, R ai, R aj, R ak, R al, R am, R an, R ao, R ap, R aq, R ar, R as, R at, R au, R av, R aw, R ax, R ay, R az, R ba, R bb, R bc, R bd, R be, R bf, R bg, R bh, R bi, R bj, R bk, R bl, R bm, R bn, R bo, R bp, R bq, R br, R bs, R bt, R bu, R bv, R bw, R bx, R by, R bz, R ca, R cb, R cc, R cd, R ce, R cf, R cg, R ch, R ci, R cj, R ck, R cl, R cm, R cn, R co, R cp, R cq, R cr, R cs, R ct, R cu, R cv, R cw, R cx, R cy, R cz, R da, R db, R dc, R dd, R de, R df, R dg, R dh, R di, R dj, R dk, R dl, R dm, R dn, R do, R dp, R dq, R dr, R ds, R dt, R du, R dv, R dw, R dx, R dy, R dz, R ea, R eb, R ec, R ed, R ee, R ef, R eg, R eh, R ei, R ej, R ek, R el, R em, R en, R eo, R ep, R eq, R er, R es, R et, R eu, R ev, R ew, R ex, R ey, R ez, R fa, R fb, R fc, R fd, R fe, R ff, R fg, R fh, R fi, R fj, R fk, R fl, R fm, R fn, R fo, R fp, R fq, R fr, R fs, R ft, R fu, R fv, R fw, R fx, R fy, R fz, R ga, R gb, R gc, R gd, R ge, R gf, R gg, R gh, R gi, R gj, R gk, R gl, R gm, R gn, R go, R gp, R gq, R gr, R gs, R gt, R gu, R gv, R gw, R gx, R gy, R gz, R ha, R hb, R hc, R hd, R he, R hf, R hg, R hi, R hj, R hk, R hl, R hm, R hn, R ho, R hp, R hq, R hr, R hs, R ht, R hu, R hv, R hw, R hx, R hy, R hz, R ia, R ib, R ic, R id, R ie, R if, R ig, R ih, R ii, R ij, R ik, R il, R im, R in, R io, R ip, R iq, R ir, R is, R it, R iu, R iv, R iw, R ix, R iy, R iz, R ja, R jb, R jc, R jd, R je, R jf, R jg, R jh, R ji, R jj, R jk, R jl, R jm, R jn, R jo, R jp, R jq, R jr, R js, R jt, R ju, R jv, R jw, R jx, R jy, R jz, R ka, R kb, R kc, R kd, R ke, R kf, R kg, R kh, R ki, R kj, R kl, R km, R kn, R ko, R kp, R kq, R kr, R ks, R kt, R ku, R kv, R kw, R kx, R ky, R kz, R la, R lb, R lc, R ld, R le, R lf, R lg, R lh, R li, R lj, R lk, R ll, R lm, R ln, R lo, R lp, R lq, R lr, R ls, R lt, R lu, R lv, R lw, R lx, R ly, R lz, R ma, R mb, R mc, R md, R me, R mf, R mg, R mh, R mi, R mj, R mk, R ml, R mm, R mn, R mo, R mp, R mq, R mr, R ms, R mt, R mu, R mv, R mw, R mx, R my, R mz, R na, R nb, R nc, R nd, R ne, R nf, R ng, R nh, R ni, R nj, R nk, R nl, R nm, R nn, R no, R np, R nq, R nr, R ns, R nt, R nu, R nv, R nw, R nx, R ny, R nz, R oa, R ob, R oc, R od, R oe, R of, R og, R oh, R oi, R oj, R ok, R ol, R om, R on, R oo, R op, R oq, R or, R os, R ot, R ou, R ov, R ow, R ox, R oy, R oz, R pa, R pb, R pc, R pd, R pe, R pf, R pg, R ph, R pi, R pj, R pk, R pl, R pm, R pn, R po, R pp, R pq, R pr, R ps, R pt, R pu, R pv, R pw, R px, R py, R pz, R qa, R qb, R qc, R qd, R qe, R qf, R qg, R qh, R qi, R qj, R qk, R ql, R qm, R qn, R qo, R qp, R qq, R qr, R qs, R qt, R qu, R qv, R qw, R qx, R qy, R qz, R ra, R rb, R rc, R rd, R re, R rf, R rg, R rh, R ri, R rj, R rk, R rl, R rm, R rn, R ro, R rp, R rq, R rr, R rs, R rt, R ru, R rv, R rw, R rx, R ry, R rz, R sa, R sb, R sc, R sd, R se, R sf, R sg, R sh, R si, R sj, R sk, R sl, R sm, R sn, R so, R sp, R sq, R sr, R ss, R st, R su, R sv, R sw, R sx, R sy, R sz, R ta, R tb, R tc, R td, R te, R tf, R tg, R th, R ti, R tj, R tk, R tl, R tm, R tn, R to, R tp, R tq, R tr, R ts, R tt, R tu, R tv, R tw, R tx, R ty, R tz, R ua, R ub, R uc, R ud, R ue, R uf, R ug, R uh, R ui, R uj, R uk, R ul, R um, R un, R uo, R up, R uq, R ur, R us, R ut, R uu, R uv, R uw, R ux, R uy, R uz, R va, R vb, R vc, R vd, R ve, R vf, R vg, R vh, R vi, R vj, R vk, R vl, R vm, R vn, R vo, R vp, R vq, R vr, R vs, R vt, R vu, R vv, R vw, R vx, R vy, R vz, R wa, R wb, R wc, R wd, R we, R wf, R wg, R wh, R wi, R wj, R wk, R wl, R wm, R wn, R wo, R wp, R wq, R wr, R ws, R wt, R wu, R wv, R ww, R wx, R wy, R wz, R xa, R xb, R xc, R xd, R xe, R xf, R xg, R xh, R xi, R xj, R xk, R xl, R xm, R xn, R xo, R xp, R xq, R xr, R xs, R xt, R xu, R xv, R xw, R xx, R xy, R xz, R ya, R yb, R yc, R yd, R ye, R yf, R yg, R yh, R yi, R yj, R yk, R yl, R ym, R yn, R yo, R yp, R yq, R yr, R ys, R yt, R yu, R yv, R yw, R yx, R yy, R yz, R za, R zb, R zc, R zd, R ze, R zf, R zg, R zh, R zi, R zj, R zk, R zl, R zm, R zn, R zo, R zp, R zq, R zr, R zs, R zt, R zu, R zv, R zw, R zx, R zy, R zz.