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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 November 2002 (14.11.2002)

PCT

(10) International Publication Number
WO 02/090355 A1

(51) International Patent Classification[7]: C07D 417/14, A61K 31/445, C07D 413/12, 413/14, 401/12, A61K 31/505, C07D 471/04, A61K 31/5377, C07D 401/14, 498/04, 403/14, A61P 25/20, 9/10, 3/04

(21) International Application Number: PCT/GB02/02042

(22) International Filing Date: 2 May 2002 (02.05.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

| | | |
|---|---|---|
| 0111189.7 | 5 May 2001 (05.05.2001) | GB |
| 0111184.8 | 5 May 2001 (05.05.2001) | GB |
| 0121303.2 | 3 September 2001 (03.09.2001) | GB |
| 0130392.4 | 19 December 2001 (19.12.2001) | GB |
| 0130331.2 | 19 December 2001 (19.12.2001) | GB |

(71) Applicant *(for all designated States except US)*: **SMITHKLINE BEECHAM P.L.C.** [GB/GB]; 980 Great West Road, Brentford, Middlesex TW8 9GS (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **BRANCH, Clive, Leslie** [GB/GB]; GlaxoSmithKline, New Frontiers Science Park South, Third Avenue, Harlow, Essex CM19 5AW (GB). **COULTON, Steven** [GB/GB]; GlaxoSmithKline, New Frontiers Science Park South, Third Avenue, Harlow, Essex CM19 5AW (GB). **JOHNS, Amanda** [GB/GB]; GlaxoSmithKline, New Frontiers Science Park South, Third Avenue, Harlow, Essex CM19 5AW (GB). **JOHNSON, Christopher, Norbert** [GB/GB]; GlaxoSmithKline, New Frontiers Science Park South, Third Avenue, Harlow, Essex CM19 5AW (GB). **PORTER, Roderick, Alan** [GB/GB]; GlaxoSmithKline, New Frontiers Science Park South, Third Avenue, Harlow, Essex CM19 5AW (GB). **STEMP, Geoffrey** [GB/GB]; GlaxoSmithKline, New Frontiers Science Park South, Third Avenue, Harlow, Essex CM19 5AW (GB). **THEWLIS, Kevin** [GB/GB]; GlaxoSmithKline, New Frontiers Science Park South, Third Avenue, Harlow, Essex CM19 5AW (GB).

(74) Agent: **HOCKLEY, Sian, Catherine**; Corporate Intellectual Property, GlaxoSmithKline, CN925.1, 980 Great West Road, Brentford, Middlesex TW8 9GS (GB).

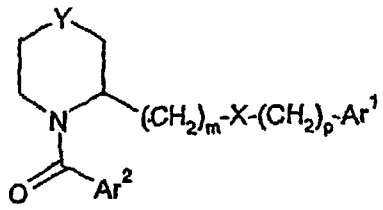
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, 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, TR), OAPI patent (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: N-AROYL CYCLIC AMINES




(I)

(57) Abstract: This invention relates to *N*-aroyl cyclic amine derivatives and their use as orexin antagonists wherein: Y represents a bond, oxygen, or a group $(CH_2)_n$, wherein n represents 1, 2 or 3; m represents 1, 2, or 3; p represents O or 1; X is NR, wherein R is H or $(C_{1-4})$alkyl; $Ar^1$ is aryl, or a mono or bicyclic heteroaryl group containing up to 3 heteroatoms selected from N, O and S; any of which may be optionally substituted; $A^2$ represents phenyl or a 5- or 6-membered heterocyclyl group containing up to 3 heteroatoms selected from N, O and S, wherein the phenyl or heterocyclyl group is substituted by $R^1$ and further optional substituents; or $Ar^2$ represents an optionally substituted bicyclic aromatic or bicyclic heteroaromatic group containing up to 3 heteroatoms selected from N, O and S; $R^1$ represents hydrogen, optionally substituted $(C_{1-4})$alkoxy, halo, cyano, optionally substituted $(C_{1-6})$alkyl, optionally substituted phenyl, or an optionally substituted 5- or 6- membered heterocyclyl group containing up to 4 heteroatoms selected from N, O and S; when $Ar^1$ is aryl p is not 1; or a pharmaceutical acceptable salt thereof.

WO 02/090355 A1