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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
6 December 2001 (06.12.2001)

PCT

(10) International Publication Number
WO 01/92526 A1

(51) International Patent Classification[7]: C12N 15/12, C07K 14/705, 16/28, 17/00, C12N 5/10, C12Q 1/68, A61K 38/00, 31/7088, G01N 33/68

(21) International Application Number: PCT/US01/17314

(22) International Filing Date: 24 May 2001 (24.05.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/207,389 26 May 2000 (26.05.2000) US

(71) Applicant: **BRISTOL-MYERS SQUIBB COMPANY** [US/US]; Post Office Box 4000, Route 206 and Province-line Road, Princeton, NJ 08543-4000 (US).

(72) Inventors: **DWORETZKY, Steven, I.**; 43 High Meadow Lane, Middlefield, CT 06455 (US). **RAMANATHAN, Chandra, S.**; 41 Alison Avenue, Wallingford, CT 06492 (US). **TROJNACKI, Joanne, T.**; 259 Weatherly Trail, Guilford, CT 06437 (US). **BOISSARD, Christopher, G.**; 73 Oxbow Lane, Northford, CT 06472 (US). **GRIBKOFF, Valentin, K.**; 142 Williams Road, Wallingford, CT 06492 (US).

(74) Agent: **SERUNIAN, Leslie, A.**; Morgan & Finnegan, L.L.P., 345 Park Avenue, New York, NY 10154 (US).

(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, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, 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, 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.

WO 01/92526 A1

(54) Title: HUMAN KCNQ5 POTASSIUM CHANNEL, METHODS AND COMPOSITIONS THEREOF

(57) Abstract: An isolated polynucleotide encoding a novel potassium channel polypeptide, KCNQ5, that is expressed primarily in brain and skeletal muscle is described. The new polypeptide has been cloned and isolated from a human brain cDNA library and is a member the KCNQ family of potassium channels. The provided human KCNQ5 nucleic acid sequence and encoded polypeptide can be employed for diagnostic, screening and therapeutic uses. Moreover, the hKCNQ5 polypeptide can be used to assay for KCNQ5 potassium channel modulators, which can be utilized in the treatment of neurological, neurophysiological, neuropsychological and neuroaffective diseases, conditions and disorders, including, but not limited to, acute and chronic pain, migraine, acute stroke, dementia, vascular dementia, trauma, epilepsy, amyelotrophic lateral sclerosis (ALS), multiple sclerosis (MS), Parkinson's Disease, learning and cognitive disorders, and neurophysiological disorders including anxiety disorders, depression, bipolar disorders, sleep disorders, addiction, and eating disorders.