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(71) Applicant: **BRISTOL-MYERS SQUIBB COMPANY** [US/US], Post Office Box 4000, Route 206 and Provinceline 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)

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(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.