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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 November 2003 (27.11.2003)

PCT

(10) International Publication Number
WO 03/097691 A1

(51) International Patent Classification[7]: C07K 14/705, G01N 33/68, C07K 14/47, C12N 5/00, A61K 39/395, 48/00

(21) International Application Number: PCT/GB03/02225

(22) International Filing Date: 22 May 2003 (22.05.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0211833.9 22 May 2002 (22.05.2002) GB

(71) Applicant *(for all designated States except US)*: **UNIVERSITY COLLEGE LONDON** [GB/GB]; Gower Street, London WC1E 9BT (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **OKUSE, Kenji** [JP/GB]; Department of Biology, University College London, Gower Street, London WC1E 6BT (GB). **BAKER, Mark** [GB/GB]; Department of Biology, University College London, Gower Street, London WC1E 6BT (GB). **POON, Louisa** [GB/GB]; Department of Biology, University College London, Gower Street, London WC1E 6BT (GB). **WOOD, John, Nicholas** [GB/GB]; Department of Biology, University College London, Gower Street, London WC1E 6BT (GB). **MALIK-HALL, Misbah** [GB/GB]; Department of Biology, University College London, Gower Street, London WC1E 6BT (GB).

(74) Agent: **WOOD, Geoffrey, Crolett**; J.A. Kemp & Co, 14 South Square, Gray's Inn, London WC1R 5JJ (GB).

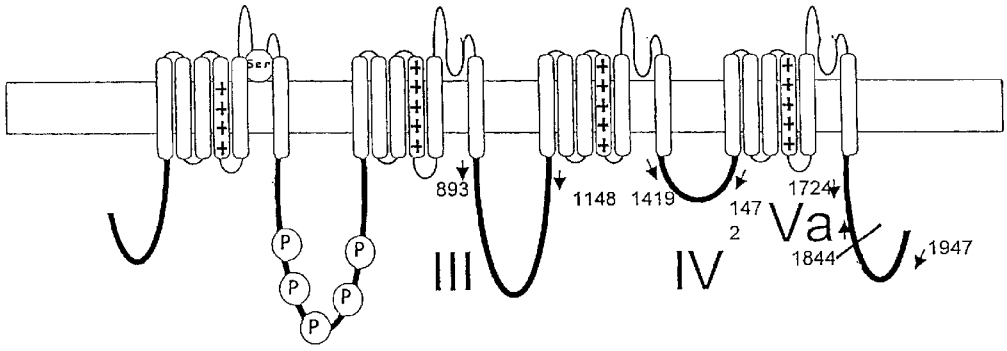
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL,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



(57) Abstract: The present invention provides a method of identifying a modulator of a voltage gated sodium channel (VGSC), which method comprises: (a) bringing into contact a test compound, a VGSC and one or more binding partners selected from PAPIN, periaxin and HSPC025 under conditions where the VGSC and the binding partner(s) are capable of forming a complex in the absence of the test compound; and (b) measuring an activity of the VGSC, wherein a change in the activity of the VGSC relative to the activity in the absence of the test compound indicates that the test compound is a modulator of said VGSC. Compounds identified in such screening methods are proposed for use in the treatment of VGSC-related conditions, for example in the treatment or prevention of pain. Also provided are methods of enhancing the functional expression of a voltage gated sodium channel (VGSC) in a cell comprising the step of increasing the level of a binding partner of the invention in the cell.

WO 03/097691 A1