



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/US97/23405 (22) International Filing Date: 22 December 1997 (22.12.97) (30) Priority Data: 08/771,737 20 December 1996 (20.12.96) US (71) Applicant: ABBOTT LABORATORIES [US/US]; CHAD 0377/AP6D-2, 100 Abbott Park Road, Abbott Park, IL 60064-3500 (US). (72) Inventors: BRIGGS, Clark, A.; 2280 Shannondale, Lib- ertyville, IL 60048 (US). GOPALAKRISHNAN, Murali; 1568 Oxford Circle, Grayslake, IL 60030 (US). MCKENNA, David, G.; 3404 Cove court, McHenry, IL 60050 (US). MONTEGGIA, Lisa, M.; Apartment 2A, 239 Dittmer, Lindenhurst, IL 60046 (US). ROCH, Jean-Marc; Apartment 109, 1020 Lakehurst Drive, Waukegan, IL 60085 (US). SULLIVAN, James, P.; 705 Dimmeydale Drive, Deerfield, IL 60015 (US). TOUMA, Edward; 3313 Beacon Street #204, North Chicago, IL 60064 (US). (74) Agents: DANCKERS, Andreas, M. et al.; Abbott Laboratories, CHAD 0377/AP6D-2, 100 Abbott Park Road, Abbott Park, IL 60064-3500 (US).		(81) Designated States: CA, JP, MX, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims</i> <i>and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 5 November 1998 (05.11.98)
(54) Title: A VARIANT HUMAN ALPHA-7 ACETYLCHOLINE RECEPTOR SUBUNIT, AND METHODS OF PRODUCTION AND USE THEREOF		
(57) Abstract A variant human $\alpha 7$ nicotinic acetylcholine receptor (nAChR) polypeptide is provided wherein the variant contains an amino acid substitution at the valine-274 position of the wild-type human $\alpha 7$ nAChR. Nucleic acid molecules encoding the variant human $\alpha 7$ nAChR, vectors and host cells containing such nucleic acid molecules are also provided. In addition, methods are provided for producing the variant as are methods of using such variants for screening compounds for activity at the nAChR.		

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/23405

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12N15/12 C12N15/11 C12N15/85 C07K14/47 C12P21/08
G01N33/566

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 94 20617 A (THE SALK INSTITUTE BIOTECHNOLOGY/INDUSTRIAL ASSOCIATES, INC.) 15 September 1994	14-16
A	see page 4, line 26 - page 7, line 17 see page 14, line 7 - page 15, line 2 see page 17, line 4 - page 19, line 2 see page 29, line 34 - page 30, line 27 see page 32, line 19 - page 33, line 3 see Sequence Listing: SEQ ID NO: 7 AND 8 see claims 1,6-9,29,43 --- -/--	1-13

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Inter. .onal Application No

PCT/US 97/23405

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PENG, X. ET AL.: "Human alpha 7 acetylcholine receptor: Cloning of the alpha 7 subunit from the SH-SY5Y cell line and determination of pharmacological properties of native receptors and functional alpha 7 homomers expressed in <i>Xenopus oocytes</i>" MOLECULAR PHARMACOLOGY, vol. 45, no. 3, March 1994, pages 546-554, XP002076578 see 'Materials and Methods' see page 549, right-hand column, paragraph 1 - page 552, left-hand column, paragraph 2; figures 2,3 ---	14-16
X	ELLIOTT, K.J. ET AL.: "Comparative structure of human neuronal alpha 2 - alpha 7 and B2 - B4 nicotinic acetylcholine receptor subunits and functional expression of the alpha 2, alpha 3, alpha 4, alpha 7, B2, and B4 subunits" JOURNAL OF MOLECULAR NEUROSCIENCE, vol. 7, 1996, pages 217-228, XP002076579 see the whole document ---	14,15
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Y	TREININ M. AND CHALFIE M.: "A mutated acetylcholine receptor subunit causes neuronal degeneration in <i>C.elegans</i>" NEURON, vol. 14, no. 4, April 1995, pages 871-877, XP002076580 see the whole document ---	1-16
Y	GALZI, J.-L. AND CHANGEUX, J.-P.: "Review: Neurotransmitter Receptors VI; Neuronal nicotinic receptors: molecular organization and regulations " NEUROPHARMACOLOGY, vol. 34, no. 6, 1995, pages 563-582, XP002076581 cited in the application see page 567, right-hand column, paragraph 3 - page 569, left-hand column, paragraph 2 see page 571, left-hand column, paragraph 2 - right-hand column, last paragraph; figures 4,5 --- --- -/--	1-16

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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	BERTRAND, D. ET AL.: "Mutations at two distinct sites within the channel domain M2 alter calcium permeability of neuronal alpha 7 nicotinic receptor" PROC.NATL.ACAD.SCI.USA, vol. 90, August 1993, pages 6971-6975, XP002076582 cited in the application see the whole document -----	1-16

INTERNATIONAL SEARCH REPORT

Information on patent family members

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