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(54) Title: COMPOSITIONS AND METHODS FOR ENHANCING AXON REGENERATION

(57) Abstract: As described below, the present invention generally features compositions and methods for the treatment of CNS disease or injury. In particular, the invention provides methods and compositions for enhancing axonal outgrowth in a subject. In one embodiment, the invention enhances the success of CNS restorative surgery.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/20371

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **G01N 33/53**(2006.01),**33/567**(2006.01);**A61K 38/00**(2006.01),**9/22**(2006.01);**A01N 37/18**(2006.01),**63/00**(2006.01),**65/00**(2006.01);**C12N 5/06**(2006.01),**5/16**(2006.01);**A61M 1/00**(2006.01)

USPC: 435/7.2,326;514/2;530/350;424/93.1;604/890.1,123;977/906

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)
U.S. : 435/7.2,326;514/2;530/350;424/93.1;604/890.1,123;977/906

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 practicable, search terms used)
STN: Biosis, Biotechds, Embase, CAPLUS, Medline, USPATFULL, search term: outgrowth, sialidase, gangliosides, sialoglycoprotein, polysialic acid, GD1a, GT1b, chondroitinase, injury, neurodegenerative, inhibitor, regeneration.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97/01352 A1 (RESEARCH FOUNDATION OF CUNY, HUNTER COLLEGE) 16 January 1997, especially p. 15, line 6 to p21, line35.; p. 31-p. 36, examples5-8; p. 37 claims 1-17, p.41, claims 26-30.	1-4, 6-9, 12, 18-22, 39-44, 46-47 --- 13-17, 23-38, 45, 48
Y	WO 03/074080 A1 (CAMBRIDGE UNIVERSITY TECHNICAL SERVCICES LIMITED) 12 September 2003, especially p. 33, example 1,p.52 claims1-9; p. 57 claims 37-38.	1-48
Y	CHAU et al. Chondroitinase ABC enhances axonal regrowth through Schwann cell-seeded guidance channels after spinal cord injury. FASEB J. 2003, especially p. 2, 3rd paragraph.	13-17, 23-38, 45, 45-48

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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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,P	WO 2005/074655 A2 (EMORY UNIVERSITY) 18 August 2005, especially p.28, example 6 and examle7; pl 31, claims 1-24.	1-48
X	WARRINGRTON et al. Neuron-Binding Monoclonal Antibodies Support Central Nervous System Neurite Extenstion. J. Neurophathol. Exp. Neurol. 2004, Vol. 63: 461-473, especially p. 464, 1st col. to 2nd col., 2nd paragraph; p. 468, 1st col. 1st paragraph.	1-9, 39-44 --- 10-38, 45-48
Y	DEBELLARD et al. Myelin-Associated Glycoprotein Inhibits Axonal Regeneration from a Variety of Neurons via Interaction with a Sialoglycoprotein. Mol. Cell. Neurosci. 1996, Vol. 7: 89-101, especially p. 89, abstract; p. 98, 2nd paragraph to p. 99, 1st col., 2nd paragraph; p. 94 2nd col. to p. 95, 2nd col.	1-48
Y	ZUO et al. Degradation of Chondroitin Sulfate Proteoglycan Enhances the Neurite-Promoting Potential of Spinal Cord Tissue. Exp. Neurol.1998, Vol. 154: 654-662, especially p. 654, abstract; p. 655, 1st col., 2nd paragraph.	13-17,23-38, 45-47
X --- Y	TANG et al. Myelin-associated Glycorprotein Interacts with Neurons via a Sialic Acid Binding Site at ARG118 and a Distinct Neurite Inhibition Site. J. Cell Bio. 1997, Vol. 138: 1355-1366, especially p. 1355, abstract; p. 1357, 1st col., 5th paragraph to 2nd col.4th paragraph; p. 1358, 2nd col.	1-9, 39-44. --- 10-38,45-48
Y	MCKEON et al. Exp. Injury-Induced Proteoglycans Inhibit the Potential for Laminin-Mediated Axon Growth on Astrocytic Scars. Neurol. 1995, Vol. 136: 32-43, especially p. 32, abstract; p. 33, 1st col. .materials and methods.	13-17, 23-38, 45-47
A	MONNIER et al. The Polysialic Acid Moiety of the Neural Cell Adhesion Molecule is Involved in Intraretinal Guidance of Retinal Ganglion Cell Axons. Dev. Biol. 2001, Vol. 229: 1-14, especially p. 1, abstract.	1-48
Y	YANG et al. Gangliosides are neuronal ligands for myelin-associated glycoprotein. Proc. Natl. Acad. Sci. USA. 1996, Vol. 93:814-818, especially p. 814, abstract; p. 815, 1st col.	1-48
A	PETRIDIS et al. Polysialic Acid Regulates Cell Contact-Dependent Neuronal Differentiation of Progenitor Cells from the Subventiricular Zone. Dev. Dyn. 2004, 230: 675-684, p. 675 abstract.	1-48
Y,P	WO 2005/122734 A2 (THE RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK) 29 December 2005, especially p.30-p32.	1-48