

Title (en)

GENETIC DEMONSTRATION OF REQUIREMENT FOR NKX6.1, NKX2.2 AND NKX6.2 IN VENTRAL NEURON GENERATION

Title (de)

GENETISCHE DEMONSTRATION DER NOTWENDIGKEIT VON NKX6.1, NKX2.2 UND NKX6.2 ZUR GENERIERUNG VON VENTRALEN NERVENZELLEN

Title (fr)

DEMONSTRATION GENETIQUE DU BESOIN DE NKX6.1, NKX2.2 ET NKX6.2 POUR LA PRODUCTION DE NEURONES VENTRAUX

Publication

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Application

EP 01968382 A 20010831

Priority

- US 0127256 W 20010831
- US 65446200 A 20000901

Abstract (en)

[origin: WO0218545A1] This invention provides a method of converting a stem cell into a ventral neuron which comprises introducing into the stem cell a nucleic acid which expresses homeodomain transcription factor Nkx6.1 or Nkx6.2 protein in the stem cell so as to thereby convert the stem cell into the ventral neuron. Provided are methods of diagnosing a motor neuron degenerative disease in a subject. Also provides is a method of treating neuronal degeneration in a subject which comprises implanting in diseased neural tissue of the subject a neural stem cell which is capable of expressing homeodomain Nkx6.1 or Nkx6.2 protein under conditions such that the stem cell is converted into a motor neuron after implantation, thereby treating neuronal degeneration in the subject.

IPC 1-7

C12N 5/00; C12N 5/02; C12N 15/63; C12N 15/85; C12N 15/87

IPC 8 full level

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CPC (source: EP)

C07K 14/4702 (2013.01); **A61K 48/00** (2013.01)

Citation (search report)

- [Y] WO 9900516 A2 19990107 - MEDICAL RES COUNCIL [GB], et al
- [Y] WO 0018884 A1 20000406 - UNIV COLUMBIA [US], et al
- [Y] WO 9523223 A1 19950831 - UNIV COLUMBIA [US], et al
- [Y] WO 0009676 A2 20000224 - CALIFORNIA INST OF TECHN [US]
- [Y] QIU MENGSHENG ET AL: "Control of anteroposterior and dorsoventral domains of Nkx-6.1 gene expression relative to other Nkx gene during vertebrate CNS development", MECHANISMS OF DEVELOPMENT, vol. 72, no. 1-2, March 1998 (1998-03-01), pages 77 - 88, XP002944806, ISSN: 0925-4773
- [PY] SANDER M ET AL: "Ventral neural patterning by NKX homeobox genes: NKX6.1 controls somatic motor neuron and ventral interneuron fates", GENES AND DEVELOPMENT, COLD SPRING HARBOR LABORATORY PRESS, NEW YORK, US, vol. 14, 7 September 2000 (2000-09-07), pages 2134 - 2139, XP002902773, ISSN: 0890-9369
- [Y] CAI J ET AL: "EXPRESSION AND REGULATION OF THE CHICKEN NKX6.2 HOMEODOMAIN GENE SUGGEST ITS POSSIBLE INVOLVEMENT IN THE VENTRAL NEURAL PATTERNING AND CELL FATE SPECIFICATION", DEVELOPMENTAL DYNAMICS, WILEY-LISS, INC., NEW YORK, NY, US, vol. 216, no. 4/5, December 1999 (1999-12-01), pages 459 - 468, XP009034441, ISSN: 1058-8388
- [PY] CAI JUN ET AL: "Mice lacking the Nkx6.2 (Gtx) homeodomain transcription factor develop and reproduce normally", MOLECULAR AND CELLULAR BIOLOGY, vol. 21, no. 13, July 2001 (2001-07-01), pages 4399 - 4403, XP002306958, ISSN: 0270-7306
- [A] BRISCOE J ET AL: "HOMEODOMAIN GENE NKX2.2 AND SPECIFICATION OF NEURONAL IDENTITY BY GRADED SONIC HEDGEHOG SIGNALLING", NATURE, MACMILLAN JOURNALS LTD. LONDON, GB, vol. 398, 15 April 1999 (1999-04-15), pages 622 - 627, XP002944809, ISSN: 0028-0836
- [A] PALMER T D ET AL: "FIBROBLAST GROWTH FACTOR-2 ACTIVATES A LATENT NEUROGENIC PROGRAM IN NEURAL STEM CELLS FROM DIVERSE REGIONS OF THE ADULT CNS", JOURNAL OF NEUROSCIENCE, NEW YORK, NY, US, vol. 19, no. 19, 1 October 1999 (1999-10-01), pages 8487 - 8497, XP001105835, ISSN: 0270-6474
- [A] TANABE Y ET AL: "SPECIFICATION OF MOTOR NEURON IDENTITY BY THE MNR2 HOMEODOMAIN PROTEIN", CELL, MIT PRESS, CAMBRIDGE, MA., US, vol. 95, 2 October 1998 (1998-10-02), pages 67 - 80, XP002925301, ISSN: 0092-8674
- See references of WO 0218545A1

Citation (examination)

WO 9900528 A1 19990107 - FLACHGLAS AG [DE], et al

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