

## Title (en)

DELIVERY OF MODULATORS OF GLUTAMATE-MEDIATED NEUROTRANSMISSION TO THE INNER EAR

## Title (de)

ABGABE VON MODULATOREN DER GLUTAMAT-VERMITTELTEN NEUROTRANSMISSION AN DAS INNENOHHR

## Title (fr)

ADMINISTRATION DANS L'OREILLE INTERNE DE MODULATEURS DE LA NEUROTRANSMISSION GLUTAMATERGIQUE

## Publication

**EP 1545551 A4 20081022 (EN)**

## Application

**EP 02768820 A 20020906**

## Priority

US 0228519 W 20020906

## Abstract (en)

[origin: WO2004022069A1] The invention features methods and devices for local delivery of agents that modify glutamate-mediated neurotransmission to the inner ear for treatment of inner ear disorders caused by glutamate-induced hearing loss and/or tinnitus.

## IPC 8 full level

**A61K 31/66** (2006.01); **A61K 31/439** (2006.01); **A61K 31/4535** (2006.01); **A61K 31/47** (2006.01); **A61K 31/553** (2006.01); **A61K 31/662** (2006.01); **A61P 27/16** (2006.01)

## CPC (source: EP)

**A61K 31/439** (2013.01); **A61K 31/4535** (2013.01); **A61K 31/47** (2013.01); **A61K 31/662** (2013.01); **A61P 25/00** (2017.12); **A61P 25/02** (2017.12); **A61P 27/16** (2017.12); **A61P 43/00** (2017.12)

## Citation (search report)

- [X] US 6066652 A 20000523 - ZENNER HANS PETER [DE], et al
- [X] US 6177434 B1 20010123 - KOPKE RICHARD D [US], et al
- [X] PUEL J-L ET AL: "TRAITEMENT DES ACOUPHENES NOUVELLES PERSPECTIVES//THE TREATMENT OF TINNITUS AURIUM NEW PERSPECTIVES", PRESSE MEDICALE, PRESSE MEDICALE, PARIS, FR, vol. 31, no. 24, 13 July 2002 (2002-07-13), pages 1137 - 1143, XP008054746, ISSN: 0755-4982
- [X] SEIDMAN M D: "GLUTAMATE ANTAGONISTS, STEROIDS, AND ANTIOXIDANTS AS THERAPEUTIC OPTIONS FOR HEARING LOSS AND TINNITUS AND THE USE OF AN INNER EAR DRUG DELIVERY SYSTEMS", INTERNATIONAL TINNITUS JOURNAL, BAD KISSINGEN, vol. 4, no. 2, 1 January 1998 (1998-01-01), pages 148 - 154, XP009043381, ISSN: 0946-5448
- [X] DENK D-M ET AL: "CAROVERINE IN TINNITUS TREATMENT A PLACEBO-CONTROLLED BLIND STUDY", ACTA OTO-LARYNGOLOGICA, SCANDINAVIAN UNIVERSITY PRESS, OSLO, NO, vol. 117, no. 6, 1 November 1997 (1997-11-01), pages 825 - 830, XP009043354, ISSN: 0001-6489
- [X] LIU YE ET AL: "MK-801 protects against carbon monoxide-induced hearing loss", TOXICOLOGY AND APPLIED PHARMACOLOGY, vol. 132, no. 2, 1995, pages 196 - 202, XP002494745, ISSN: 0041-008X
- [X] PARSONS C G ET AL: "Memantine is a clinically well tolerated N-methyl-D-aspartate (NMDA) receptor antagonist - A review of preclinical data", NEUROPHARMACOLOGY, PERGAMON PRESS, OXFORD, GB, vol. 38, no. 6, 1 June 1999 (1999-06-01), pages 735 - 767, XP002279262, ISSN: 0028-3908
- [X] SAHLEY TONY L ET AL: "A biochemical model of peripheral tinnitus", HEARING RESEARCH, vol. 152, no. 1-2, February 2001 (2001-02-01), pages 43 - 54, XP002494746, ISSN: 0378-5955
- [A] THOMSEN JENS ET AL: "Preliminary results of a new delivery system for gentamicin to the inner ear in patients with Meniere's disease", EUROPEAN ARCHIVES OF OTO-RHINO-LARYNGOLOGY, vol. 257, no. 7, August 2000 (2000-08-01), pages 362 - 365, XP002494747, ISSN: 0937-4477
- [A] HOFFER M E ET AL: "Microdose gentamicin administration via the round window microcatheter: results in patients with Meniere's disease.", ANNALS OF THE NEW YORK ACADEMY OF SCIENCES OCT 2001, vol. 942, October 2001 (2001-10-01), pages 46 - 51, XP002494748, ISSN: 0077-8923
- [A] JACKSON LANCE E ET AL: "Chemical perfusion of the inner ear.", OTOLARYNGOLOGIC CLINICS OF NORTH AMERICA JUN 2002, vol. 35, no. 3, June 2002 (2002-06-01), pages 639 - 653, XP009105345, ISSN: 0030-6665
- See references of WO 2004022069A1

## Citation (examination)

- OESTREICHERE ET AL: "Memantine suppresses the glutamatergic neurotransmission of mammalian inner hair cells", ORL, vol. 60, no. 1, 1 January 1998 (1998-01-01), BASEL. CH, pages 18 - 21, XP009105375
- HIRBEC H ET AL: "GACYCLIDINE: A NEW NEUROPROTECTIVE AGENT ACTING AT THE N-METHYL-D-ASPARTATE RECEPTOR", CNS DRUG REVIEWS, BRANFORD, CT, US, vol. 2, no. 7, 1 January 2001 (2001-01-01), pages 172 - 198, XP008032600, ISSN: 1080-563X

## Cited by

US11918778B2

## Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

## DOCDB simple family (publication)

**WO 2004022069 A1 20040318**; AU 2002331830 A1 20040329; AU 2009233659 A1 20091126; CA 2497867 A1 20040318; EP 1545551 A1 20050629; EP 1545551 A4 20081022; JP 2006502158 A 20060119

## DOCDB simple family (application)

**US 0228519 W 20020906**; AU 2002331830 A 20020906; AU 2009233659 A 20091103; CA 2497867 A 20020906; EP 02768820 A 20020906; JP 2004533996 A 20020906