

Title (en)
TREATING DEMENTIA WITH VISUAL STIMULATION TO SYNCH GAMMA OSCILLATIONS IN BRAIN

Title (de)
BEHANDLUNG VON DEMENZ MIT VISUELLER STIMULATION ZUR SYNCHRONISATION VON GAMMA-SCHWINGUNGEN IM GEHIRN

Title (fr)
TRAITEMENT DE LA DÉMENCE PAR STIMULATION VISUELLE POUR INDUIRE DES OSCILLATIONS GAMA SYNCHRONISÉES DANS LE CERVEAU

Publication
EP 3694593 A1 20200819 (EN)

Application
EP 18866752 A 20181010

Priority

- US 201762570250 P 20171010
- US 201762570929 P 20171011
- US 2018051785 W 20180919
- US 2018055258 W 20181010

Abstract (en)
[origin: WO2019075094A1] Devices, systems, and methods for treating dementia or Alzheimer's disease in a subject in need thereof. In one example, chronic visual stimuli having a frequency of about 30Hz to about 50 Hz, and more specifically about 40 Hz, are non-invasively delivered to the subject to entrain gamma oscillations in multiple brain regions of the subject, including the prefrontal cortex (PFC) and the hippocampus. The entrained gamma oscillations modulate neuronal activity across multiple brain regions (e.g., facilitate functional binding of neural networks at low gamma frequencies) to induce various neuroprotective effects (e.g., amelioration of amyloid plaques and tau hyper-phosphorylation) and reduce neurodegeneration. Neuronal activity mediated by the chronic visual stimuli reduces an immune response in microglia and ameliorates aberrantly modified genes and proteins involved in membrane trafficking, intracellular transport, synaptic function, neuroinflammation and DNA damage response. Behavior modification including enhanced learning and memory is observed.

IPC 8 full level
A61M 21/00 (2006.01); **A61N 1/32** (2006.01); **A61N 5/00** (2006.01); **A61N 5/06** (2006.01)

CPC (source: EP KR US)
A61M 21/00 (2013.01 - EP KR); **A61N 5/0618** (2013.01 - EP KR US); **A61N 5/0622** (2013.01 - EP KR US); **A61M 2021/0022** (2013.01 - EP US); **A61M 2021/0027** (2013.01 - EP US); **A61M 2021/0044** (2013.01 - EP KR); **A61M 2210/0693** (2013.01 - KR US); **A61N 5/062** (2013.01 - EP US); **A61N 2005/0626** (2013.01 - KR US); **A61N 2005/063** (2013.01 - EP US); **A61N 2005/0647** (2013.01 - EP US); **A61N 2005/0648** (2013.01 - KR); **A61N 2005/0651** (2013.01 - EP KR US); **A61N 2005/0667** (2013.01 - EP US)

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
WO 2019075094 A1 20190418; AU 2018347366 A1 20200423; AU 2018347366 B2 20220915; AU 2022271389 A1 20221215; AU 2022271389 B2 20240919; CA 3078739 A1 20190418; CN 111655319 A 20200911; EP 3694593 A1 20200819; EP 3694593 A4 20210721; JP 2020536643 A 20201217; KR 20200086277 A 20200716; KR 20230015501 A 20230131

DOCDB simple family (application)
US 2018055258 W 20181010; AU 2018347366 A 20181010; AU 2022271389 A 20221115; CA 3078739 A 20181010; CN 201880077874 A 20181010; EP 18866752 A 20181010; JP 2020520207 A 20181010; KR 20207013291 A 20181010; KR 20237001501 A 20181010