METHODS AND COMPOSITIONS FOR MODULATING BRAIN DAMAGE

Methods and compositions for modulating brain damage mediated by non-NMDA ionotropic glutamate receptor antagonists are provided. Methods for inhibiting neuronal cell damage and death in the brain following an injury (e.g., ischemic/hypoxic injury) and methods for inhibiting cell damage and death in conditions such as periventricular leukomalacia, cerebral palsy, mental retardation, and neonatal stroke, are also provided. These methods generally involve treating a subject with a non-NMDA ionotropic glutamate receptor antagonist. Pharmaceutical and packaged formulations that include non-NMDA ionotropic glutamate receptor antagonists are also provided.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : A61K 31/13, 31/44, 31/70, 31/135
US CL : 514/45, 284, 289, 647, 661, 662
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. : 514/45, 284, 289, 647, 661, 662

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US 5,438,150 A (GOLDIN et al.) 01 August 1995 (01.08.95), see the entire document.</td>
<td>1-48</td>
</tr>
<tr>
<td>A</td>
<td>US 5,506,231 A (LIPTON) 09 April 1996 (09.04.96), see the entire document.</td>
<td>1-48</td>
</tr>
</tbody>
</table>

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

* Special categories of cited documents:
  *A* document defining the general state of the art which is not considered to be of particular relevance
  *E* earlier application or patent published on or after the international filing date
  *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  *O* document referring to an oral disclosure, use, exhibition or other means
  *P* document published prior to the international filing date but later than the priority date claimed
  *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
  *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
  *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
  *O* member of the same patent family

Date of the actual completion of the international search: 13 November 2002 (13.11.2002)
Date of mailing of the international search report: 14 JAN 2003

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