

Title (en)
MAMMALIAN SERINE RACEMASE

Title (de)
SAÜGER-SERIN-RACEMASE

Title (fr)
SERINE RACEMASE DE MAMMIFERE

Publication
EP 1147203 A1 20011024 (EN)

Application
EP 00902414 A 20000118

Priority

- US 0000938 W 20000118
- US 11633399 P 19990119
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- US 14595399 P 19990728

Abstract (en)
[origin: WO0043526A1] High levels of D-serine occur in mammalian brain, where it appears to be an endogenous ligand of the "glycine site" of NMDA receptors. We have purified from rat brain a soluble enzyme that catalyzes the direct racemization of L-serine to D-serine. Purified serine racemase has a molecular weight of 37 kDa and requires pyridoxal 5'-phosphate for its activity. The enzyme is highly selective toward L-serine, failing to racemize any other amino acid tested. We have also identified polynucleotide sequences which encode mammalian, including human, serine racemase. Compounds which modulate the activity of mammalian serine racemase are useful for treating conditions and diseases which involve overstimulation of NMDA receptors, such as stroke and various neurodegenerative diseases.

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IPC 8 full level
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Citation (search report)
See references of WO 0043526A1

Citation (examination)

- ATSUSHI HASHIMOTO ET AL.: "Free D-Aspartate and D-Serine in the mammalian brain and periphery", PROGRESS IN NEUROBIOLOGY, vol. 52, 1997, pages 325 - 353
- ANTIMO D'ANIELLO ET AL.: "Biological role of D-amino acid oxidase and D-Aspartate oxidase", JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 268, no. 36, 1993, pages 26941 - 26949
- KAZUHIRO IMAI ET AL.: "Analytical chemistry and biochemistry of D-amino acids", BIOMEDICAL CHROMATOGRAPHY, vol. 10, 1996, pages 303 - 312

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