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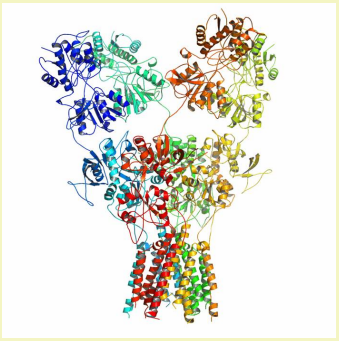
Subtype-Selective, Positive and Negative Allosteric Modulators of NMDA Receptors



NMDA Receptor

Inventors

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Technology Fields: Therapeutics

Technology ID: 231

Summary

N-methyl-D-aspartate (NMDA) receptors are glutamate gated ion channel receptors that play critical roles in synaptic transmission, synaptic plasticity, learning, and memory. NMDA receptors are also involved in various pathological conditions such as epilepsy, schizophrenia, neuropathic pain, and neurodegenerative disorders. Due to their role in these diseases, a variety of NMDA receptor-based therapeutics have been developed and tested in both pre-clinical and clinical studies. However, the majority of these drugs have had very disappointing results due to adverse side effects and limited efficacy. To overcome this problem researchers at the University of Nebraska Medical Center and the University of Bristol have created a library of subtype selective NMDA receptor compounds that have a novel allosteric modulator mechanism of action. This library consists of both NMDA receptor antagonists and NMDA receptor potentiators. Antagonists could be useful for blocking epilepsy, neuropathic pain and preventing death of neurons in neurodegenerative diseases while the potentiators could have use in cognitive enhancement and the treatment of schizophrenia, post-traumatic stress syndrome, and drug addiction.

Market Value

This new subtype-selective library of NMDA modulating compounds provides the basis for the generation of therapeutics to treat a variety of neurological conditions with decreased side effects compared to current NMDA receptor-based therapeutics.

Features and Benefits

- Subtype selective compounds should yield therapeutics with fewer side effects
- Library consists of both antagonist and potentiating compounds
- Useful for treating a variety of neurological and psychiatric conditions

Publications

- Costa BM et al. A Novel Family of Negative and Positive Allosteric Modulators of NMDA Receptors. J Pharmacol Exp Ther (2010). Link

UNeMed currently offers a variety of licensing options and collaborative development opportunities with the University of Nebraska Medical Center

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