Compounds for the Treatment of Stroke and Other Neurological Disorders

Published date: Aug. 4, 2014

Technology description

A potent neuroprotective compound through high-throughput screening of chemical libraries. The compound was further validated in vivo with strong results indicating activity in preventing neurological damage caused by stroke.

Background

Stroke ranks among the leading causes of death in the United States, with a national average of one stroke occurring every 40 seconds, and one stroke-related death occurring every 4 minutes. As a result, there is considerable interest in therapeutic intervention methods and drugs to decrease neurological damage and prevent death after stroke. Currently, the only FDA-approved drug for the treatment of stroke is the thrombolytic agent recombinant tissue plasminogen activator (tPA). Although tPA provides neuroprotection, its use is severely limited by the need to use the drug within 4.5 hours after a stroke to be effective. Even if administered within the therapeutic 4.5-hour window, tPA has a risk of symptomatic intracerebral hemorrhage. To address the deficiencies presented by tPA, trends in stroke treatment research are focusing on new treatment alternatives targeted toward repurposing of existing drugs to extend the therapeutic window for thrombolysis and to provide neuroprotection to slow cell death after stroke. At the same time, clinical researchers are utilizing high-throughput testing techniques to speed the drug trial process by allowing researchers to more efficiently and effectively identify drug candidates. These dual trends are showing promising new results in stroke therapy. Clinical and market demand for alternatives to existing stroke therapies continues. The prevalence of stroke-related impairment and mortality place great importance and priority on identifying new, viable stroke drug candidates.

Technology Description

University of New Mexico researchers have identified a potent neuroprotective compound through high-throughput screening of chemical libraries. The compound was further validated in vivo with strong results indicating activity in preventing neurological damage caused by stroke.

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Application area

Significant neuroprotective action exhibited in both in vitro and in vivo stroke models
Reduces infarct volume by half compared to control (vehicle alone)
Provides neuroprotection in vivo when administered during reperfusion
Potential application in neurodegenerative diseases such as Alzheimer’ s disease, Parkinson’ s disease, and amyotrophic lateral sclerosis

Institution

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