Selective Phospholipase A2 Inhibitors of Neurological Diseases

Tech ID: 19964 / UC Case 2009-298-0

BACKGROUND

The past two decades has resulted in a marked increase in our knowledge about phospholipase A2 (PLA2) enzymes. The PLA2 superfamily of enzymes has been divided into four main types: secreted sPLA2s, cystolic cPLA2s, calcium-independent iPLA2s, and lipoprotein-associated/PAF acetyl hydrolase LpPLA2s.

The association of the different types of PLA2s with various neurological illnesses, including hyperalgesia, multiple sclerosis (MS), and spinal cord injury. More detailed, non-confidential information is available in the Detailed Description.

ADVANTAGES

Proof of concept and IP is available for compositions of matter, target enzymes, and disease applications for novel relatively unexplored targets for a variety of neurological diseases for which good treatment options do not exist.

STATE OF DEVELOPMENT

In vitro and in vivo experiments validate a suite of potent inhibitors of PLA2, with differential specificity for the sPLA2, cPLA2, and iPLA2. Specifically, sPLA2 inhibitors markedly improve functional recovery and enhance tissue protection and axon regeneration in the mouse spinal-cord contusion injury model, while cPLA2 and iPLA2 inhibitors reduce the severity of disease in a widely used animal model of MS (experimental autoimmune encephalomyelitis, or EAE) and iPLA2 inhibitors protect rat models of hyperalgesia.

TECHNOLOGY DESCRIPTION

Researchers at UC San Diego and their international collaborators have developed a portfolio of issued and pending patents disclosing composition of matter and methods for selectively inhibiting s, i, and cPLA2s. Compositions span three, distinct chemical classes (amides, oxoamides, and fluoroketones) and proprietary methods claim treatment of various neurological illnesses, including hyperalgesia, multiple sclerosis (MS), and spinal cord injury. More detailed, non-confidential information is available in the Detailed Description.

INTELLECTUAL PROPERTY INFO


Numerous foreign issued patents are available online and unpublished applications are available under confidentiality. See also WO/2010/011686, Amides as Inhibitors of Human Secreted Phospholipase A2.

OTHER INFORMATION

See related case SD1998-078 as described in U.S. patent number 7,294,496.

RELATED MATERIALS


INVENTORS

Dennis, Edward A.

OTHER INFORMATION

CATEGORIZED AS

Medical

Disease: Autoimmune and Inflammation

Disease: Central Nervous System

New Chemical Entities, Drug Leads

RELATED CASES

PATENT STATUS

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<th>Country</th>
<th>Type</th>
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<td>United States Of America</td>
<td>Issued Patent</td>
<td>8,580,852</td>
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RELATED TECHNOLOGIES

- Amide Inhibitors of Human Secreted Phospholipase A2

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Amide Inhibitors of Human Secreted Phospholipase A2