N-Terminal D(-)-Penicillamine Peptides as Aldehyde Sequestration Agents

(VA Reference No. 99-071)

Novel method and compounds for treatment of alcohol ingestion, exposure to ambient alcohols and aldehydes in the environment, and secretion of odiferous aldehydes

Technology
Method and compound for alcohol-related therapy and sequestration of environmental aldehydes

Inventor
Herbert Nagasawa, Ph.D.
Minneapolis VA Medical Center

Key Features
- Has multiple applications including medical therapy and environmental sequestration of aldehydes
- Could be administered through a number of different routes for treatment of alcohol-related conditions

Stage of Development
Reduced to practice

Keywords
Therapeutic
- Aldehyde sequestration
- Acetaldehyde (AcH)
- Alcoholism therapy
- Aldehyde poisoning

Patent Status
US Pat. No. 6,686,336

Contact
Jeffrey Moore, Ph.D.
Technology Transfer Program
Department of Veterans Affairs
Office of Research & Development (12TT)
810 Vermont Avenue, NW
Washington, DC 20420
Phone: 202-701-7628
Fax: 202-254-0460
E-mail: Jeffrey.moore@va.gov

Technology

The Department of Veterans Affairs has developed a method of using a set of four compounds to alleviate the toxic effects of acetaldehyde (AcH). Aldehyde sequestration may be necessary in order to treat the negative effects due to alcohol ingestion, exposure to ambient alcohols and aldehydes in the environment, and secretion of odiferous aldehydes.

Description

The method and compositions developed by the VA have potential as sequestration agents for aldehydes generally, including formaldehyde and glutaraldehyde, as well as AcH. The method and one or more of the four compounds developed are candidates for use as an antidote against the toxic effects of AcH, formaldehyde and glutaraldehyde, and thus may be effective both in treatment of chronic alcoholism and in cases of acute alcohol or aldehyde poisoning. The novel technology may also be used to potentially reduce odiferous aldehydes that are secreted in the sweat of some humans. Furthermore, an additional application includes the removal of aldehydes from ambient air or emissions from stationary and mobile sources of air pollution such as factories, laboratories, automobiles, and airplanes.

Competitive Advantage

No antidotes to aldehyde or alcohol poisoning are in current use and pharmaceutical agents used to treat chronic alcoholism have not yet achieved dependable success rates.

This invention:

- Has multiple applications including therapy for alcohol ingestion, exposure to ambient alcohols and aldehydes in the environment, and secretion of odiferous aldehydes.
- Could be administered through a number of different routes for treatment of alcohol-related conditions.

Status

The Department of Veterans Affairs is looking for a partner for further development and commercialization of this technology through a license, and the VA inventors are available to collaborate with interested companies through a Cooperative Research and Development Agreement (CRADA).