

Oligosaccharide As Therapeutic Agent For Alcohol-Associated Liver Disease

Tech ID: 32108 / UC Case 2020-444-0

BACKGROUND

Alcohol is one of the most frequent causes of liver disease including alcohol-associated steatosis, steatohepatitis, fibrosis and cirrhosis, and alcoholic hepatitis. Patients with alcohol-induced liver disease lose certain glycans (sugar molecules) on the surface of their intestinal epithelial cells (glycocalyx). Intestinal bacteria usually thrive on these glycans by using them as energy substrates. In the absence of these specific glycans, some bacteria lose their competitive advantage and other bacteria grow and thrive instead, changing the gut microbiome, which contributes to symptoms of alcohol-induced liver disease.

TECHNOLOGY DESCRIPTION

One particular oligosaccharide, which is naturally present in human milk, has been synthesized at large scale and low cost in bioengineered microbes. Its structure is similar to the glycans on our intestinal epithelial cells. The inventors have shown that oral administration of certain exogenous glycans can compensate for the loss of endogenous glycans on intestinal epithelial cells and reduce alcohol-induced liver disease in mice.

STATE OF DEVELOPMENT

In vivo mouse models

INTELLECTUAL PROPERTY INFO

A patent application has been filed on this technology. The university is seeking companies interested in developing new products utilizing this technology.

CONTACT

University of California, San Diego
Office of Innovation and
Commercialization
innovation@ucsd.edu
tel: 858.534.5815.



OTHER INFORMATION

CATEGORIZED AS

- ▶ **Medical**
- ▶ Disease: Digestive System

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