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MiR-22 as a Potential Treatment Target for Steatohepatitis and Type 2 Diabetes Mellitus

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ABSTRACT

Researchers at the University of California, Davis have developed miR-22 inhibitors as a potential treatment for metabolic syndrome.

FULL DESCRIPTION

Steatohepatitis is characterized by an irregular accumulation of fat in the liver and inflammation that can progress to liver cirrhosis and carcinogenesis. Obeticholic acid (OCA) is one of few drugs being investigated for nonalcoholic steatohepatitis (NASH) treatment. However, the treatment is still in development. In addition, high dose of OCA can be toxic and cause death. MicroRNA-22 (miR-22) is a widely expressed microRNA that has been studied as a tumor suppressor, and is linked to metabolism.

Researchers at the University of California, Davis have developed miR-22 inhibitors as a potential treatment target for steatohepatitis and obesity-associated comorbidities such as T2DM. Researchers found that miR-22 has a direct relationship to key metabolic regulators including FGF21 and AMPK, and its inhibitors can be used to improve metabolism and metabolism-related drugs. MiR-22 inhibitors can be used in conjunction with other drugs that activate or target AMPK, and improve their effects. Additionally, miR-22 can be a diagnostic marker for NASH or metabolic syndrome to effectively diagnose patients with little to no physical symptoms. Moreover, miR-22 inhibitors alone can be a potential useful treatment for steatohepatitis and metabolic disease.

APPLICATIONS

- ▶ Diagnostic marker for steatosis, obesity, or metabolic syndrome
- ▶ Enhances effects of other AMPK-targeting drugs when used in conjunction
- ▶ Treatment for metabolism-associated issues including alcohol and non-alcoholic steatosis as well as steatohepatitis, and T2DM

FEATURES/BENEFITS

- ▶ Affects metabolism-growth homeostasis pathway
- ▶ Alternative to chemical treatments
- ▶ Stimulates or slows down metabolic process as needed
- ▶ Can be used in conjunction with other drugs or metabolism enhancing agents to improve their effects

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20210163929	06/03/2021	2017-376

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Conjugates That Combine HDAC Inhibitors and Retinoids into Disease Preventatives/Treatments](#)

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INVENTORS

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OTHER INFORMATION

KEYWORDS

microRNA-22, miR-22, miR-22 inhibitor, fatty liver, steatosis, steatohepatitis, metabolic, NASH, NAFL, alcoholic steatohepatitis, obeticholic acid, OCA, FGF21

CATEGORIZED AS

- ▶ **Medical**
 - ▶ Diagnostics
 - ▶ Disease: Metabolic/Endocrinology
 - ▶ Therapeutics

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