Pharmacologic Niacin for Reversing Liver Fibrosis and Cirrhosis

Tech ID: 34857 / UC Case 2021-720-0

CONTACT

Alvin Viray
aviray@uci.edu
tel: 949-824-3104.

OTHER INFORMATION

CATEGORIZED AS

» **Medical**
» Disease: Digestive System
» Therapeutics

RELATED CASES

2021-720-0

BRIEF DESCRIPTION

High-dose pharmacologic niacin or its analogs effectively reverse or regress hepatic fibrosis and liver cirrhosis by reducing collagen deposition and oxidative stress.

FULL DESCRIPTION

This technology utilizes pharmacologic doses of niacin, an anti-dyslipidemic drug, or its analogs to treat fibrosis and liver cirrhosis by targeting activated hepatic stellate cells responsible for excessive collagen accumulation. Niacin reduces oxidative stress and reactive oxygen species, thereby inhibiting collagen formation and promoting regression of preexisting fibrosis as demonstrated in cultured human hepatic stellate cells. The treatment is applicable via various pharmaceutical formulations and can be combined with multiple anti-fibrotic and adjunct therapeutics for improved clinical outcomes.

SUGGESTED USES

- Treatment of liver fibrosis and cirrhosis across grades 1 to 4
- Therapy for hepatic complications of NASH, alcoholic steatohepatitis, viral hepatitis B and C, autoimmune liver diseases
- Use in fibrosis of other tissues such as lung, kidney, bone marrow, skin, and myocardium
- Adjunct therapy to existing anti-fibrotic and metabolic disease treatments
- Potential use in fibrotic diseases such as idiopathic pulmonary fibrosis, cystic fibrosis, scleroderma, and chronic kidney disease
- Pharmaceutical development of extended-release and combination formulations
- Integration into therapeutic regimens targeting lipid metabolism, inflammation, oxidative stress, and fibrosis pathways

ADVANTAGES

- Demonstrated ability to regress established liver fibrosis and cirrhosis
- Reduces oxidative stress and reactive oxygen species production
- Reduces collagen accumulation in hepatic stellate cells
- Applicable to multiple formulations including extended-release tablets, oral, transdermal, or parenteral delivery
- Compatible with concurrent administration of diverse anti-fibrotic and disease-modifying drugs
- Potential treatment for fibrosis in various tissues beyond the liver
- Broad spectrum of niacin analogs available for therapeutic use

PATENT STATUS

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Published Application	WO 2022/104289	05/19/2022	2021-720

Additional Patents Pending

5270 California Avenue / Irvine,CA
92697-7700 / Tel: 949.824.2683