

FASN/SCD-IN-1

Chemical Properties

CAS No. :

Formula:

Molecular Weight:

Storage:

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.

Biological Description

Description	FASN/SCD-IN-1 is a Silybin derivative and an orally active inhibitor of fatty acid synthase (FASN) and stearoyl-CoA desaturase (SCD). In vitro, FASN/SCD-IN-1 demonstrates the ability to inhibit lipid deposition, reduce the transcription levels of FASN and SCD, and exhibits antioxidant, anti-inflammatory, and antifibrotic activities. It shows significant hepatoprotective effects in rat models of acute liver injury and improves pathological features such as steatosis, inflammation, and fibrosis in a mouse model of myeloproliferative-associated steatohepatitis (MASH). FASN/SCD-IN-1 can be used for MASH research.
Targets(IC50)	Others,Glutathione Peroxidase,Fatty Acid Synthase,Interleukin,ROS,Stearoyl-CoA Desaturase (SCD),TNF,LDLR
In vitro	FASN/SCD-IN-1 (Compound A2), at concentrations of 100-200 μM for 20-30 minutes, exhibits scavenging activities on DPPH and O ₂ ·- with rates of 92.9% and 82.9%, and IC ₅₀ values of 33.4 μM and 28.1 μM , respectively. In lipid peroxidation inhibition capacity (LPIC) assays, the inhibition rate is 67.0%, with an IC ₅₀ of 41.7 μM . At concentrations of 10-40 μM for 24 hours, FASN/SCD-IN-1 reduces triglyceride (TG) levels and inhibits lipid accumulation in Palmitic acid/Oleic acid (PO)-stimulated LO2 cells and primary mouse hepatocytes. It decreases the transcription levels of fatty acid synthase (FASN) and stearoyl-CoA desaturase (SCD) in PO-stimulated LO2 cells and ACACA and FASN expression in PO-stimulated primary mouse hepatocytes. At 1-10 μM for 24 hours, the compound reduces excessive ROS and levels of IL-6 and TNF- α mRNA in Carbon tetrachloride (CCl ₄)-stimulated LO2 cells and primary mouse hepatocytes. Furthermore, at 10-40 μM for 48 hours, FASN/SCD-IN-1 inhibits collagen I and fibronectin (FN) levels in TGF- β -stimulated LX2 cells.
In vivo	FASN/SCD-IN-1 (Compound A2) administered at 100 mg/kg via gavage once daily for 7 days protects rats from acute liver injury in a CCl ₄ -induced model by restoring liver function, reducing lipid accumulation, and improving oxidative stress, thereby mitigating liver function damage. In MASH mice induced by HFD + CCl ₄ , FASN/SCD-IN-1 at 150 mg/kg orally once daily for 4 weeks reduces steatosis and alleviates oxidative stress, inflammatory responses, and hepatic fibrosis, thus significantly improving the progression of MASH in these mice.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481