Product Datasheet

ND-630

Catalog No. **BP-01888** · CAS **1434635-54-7** · Form **free base** · Physical state **solid** · Color **White to light yellow** · Version **1.0** · Revision **2026-09-04**

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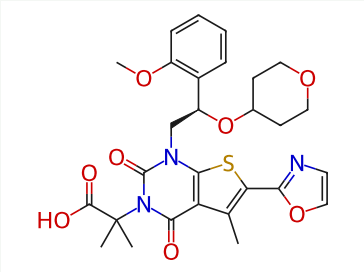
Target	Research area
Acetyl-CoA Carboxylase	**Metabolic Disease**

Molecular formula	$C_{28}H_{31}N_3O_8S$
Molecular weight	**569.6260**

STRUCTURE



DESCRIPTION

ND-630 (Firsocostat; GS-0976; NDI-010976) is an acetyl-CoA carboxylase (ACC) inhibitor which inhibits human ACC1 and ACC2 with IC50 values of 2.1 and 6.1 nM, respectively.

BIOLOGICAL ACTIVITY

In Vitro

Firsocostat (ND-630) inhibits hACC1 (IC50=2.1±0.2 nM) and hACC2 (IC50=6.1±0.8 nM). Inhibition is reversible and highly specific for ACC. Firsocostat inhibits ACC activity by interacting within the phosphopeptide-acceptor and dimerization site of the enzyme to prevent dimerization. Firsocostat inhibits fatty acid synthesis with an EC50 of 66 nM in HepG2 cells without altering the total cell number, cellular protein concentration, and incorporation of acetate into cholesterol.

In Vivo

Chronical administration of Firsocostat (ND-630) to rats with diet-induced obesity reduces hepatic steatosis, improves insulin sensitivity, reduces weight gain without affecting food intake, and favorably affects dyslipidemia. Chronical administration of Firsocostat Zucker diabetic fatty rats, Firsocostat reduces hepatic steatosis, improves glucose-stimulated insulin secretion, and reduces hemoglobin A1c (0.9% reduction). Firsocostat exhibits an aqueous solubility of 594 µM and human and rat plasma protein binding of 98.5% and 98.6%, respectively. Pharmacokinetic evaluation of Firsocostat in male Sprague-Dawley rats [i.v. 3 mg/kg; orally (p.o.) 10 mg/kg] yields a plasma t1/2 of 4.5 h, bioavailability of 37%, clearance of 33 mL/min/kg, volume of distribution of 1.9 L/kg, oral time of maximum plasma concentration of 0.25 h.

SOLUBILITY

Soluble in DMSO >50 mg/mL

REFERENCES

[1]. Harriman G, et al. Acetyl-CoA carboxylase inhibition by ND-630 reduces hepatic steatosis, improves insulin sensitivity, and modulates dyslipidemia in rats. Proc Natl Acad Sci U S A. 2016 Mar 29;113(13):E1796-805.

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