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产品名称：ND-630
产品别名：Firsocostat；GS-0976; NDI-010976

生物活性：

Description	Firsocostat (ND-630; GS-0976; NDI-010976) is an acetyl-CoA carboxylase (ACC) inhibitor; inhibits human ACC1 and ACC2 with IC_{50} values of 2.1 and 6.1 nM, respectively.
IC_{50} & Target	IC50: 2.1 nM (hACC1); 6.1 nM (hACC2)[1]
In Vitro	Firsocostat (ND-630) inhibits hACC1 (IC_{50}=2.1±0.2 nM) and hACC2 (IC_{50}=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 EC_{50} of 66 nM in HepG2 cells without altering the total cell number, cellular protein concentration, and incorporation of acetate into cholesterol[1].
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 $t_{1/2}$ 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[1].
Solvent&Solubility	***In Vitro:*** **DMSO : ≥ 50 mg/mL (87.78 mM)** * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.7555 mL	8.7776 mL	17.5553 mL
5 mM	0.3511 mL	1.7555 mL	3.5111 mL
10 mM	0.1756 mL	0.8778 mL	1.7555 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

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.

实验参考：

Animal Administration	Rats: Firsocostat is prepared in aqueous saline solution containing 1% Tween 80 and 0.5% methyl cellulose. Eight-week-old male ZDF rats are given either vehicle or Firsocostat (0.5, 1.5, 5 mg/kg) in vehicle by oral gavage b.i.d. for 37 d. Blood glucose is measured by glucometer at baseline and weekly just before dosing. Blood is collected at baseline, after 3 wk of treatment, and at the end of

	the study, 6 h after dosing and after a 6-h fast, for measurement of the indicated parameters. After 3 wk of treatment, animals received an oGTT (1 g/kg glucose). At the end of the study animals are killed, and liver cholesterol, triglycerides, and free fatty acids are determined[1].
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.