3-Chloro-5-hydroxybenzoic acid

Cat. No.: HY-W016868

CAS No.: 53984-36-4

Molecular Formula: $C_7H_5ClO_3$

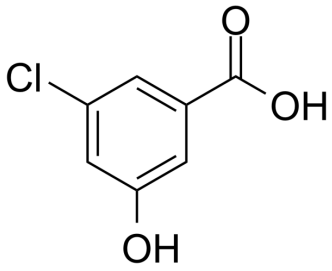
Molecular Weight: 172.57

Target: Others

Pathway: Others

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (579.47 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	5.7947 mL	28.9737 mL	57.9475 mL
	5 mM	1.1589 mL	5.7947 mL	11.5895 mL
	10 mM	0.5795 mL	2.8974 mL	5.7947 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

3-Chloro-5-hydroxybenzoic acid is a potent, orally active and selective lactate receptor GPR81 agonist, with an EC_{50} of 16 μM for human GPR81. 3-Chloro-5-hydroxybenzoic acid exhibits favorable in vivo effects on lipolysis in a mouse model of obesity [1].

In Vitro

3-Chloro-5-hydroxybenzoic acid shows potency against human (EC50=16 μM), monkey (EC_{50}=17 μM), dog (EC_{50}=67 μM), rat (EC_{50}=7 μM), mouse (EC_{50}=22 μM), and hamster GPR81 (EC_{50}=27 μM)[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

3-Chloro-5-hydroxybenzoic acid (30, 100, and 300 mg/kg; PO in overnight fasted C57Bl6/J mice fed high fat chow for 10 weeks) shows significant reductions in free fatty acids at all doses tested, resulting in a minimum efficacious dose of 30 mg/kg[1].

Pharmacokinetic Parameters of 3-Chloro-5-hydroxybenzoic acid in Mice[1].

dose (mg/kg)	t_{max} (h)	AUC_{inf} (h ng/mL)	C_{max} (ng/mL)	C_{max} (μM)	$t_{1/2}$ (h)

30	0.5	9356	11689.50	67.2	1.47
100	0.5	51312	55252.80	341.9	1.10

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57Bl6/J mice (DIO mice)[1]
Dosage:	30, 100, and 300 mg/kg
Administration:	PO in overnight fasted C57Bl6/J mice fed high fat chow for 10 weeks
Result:	Significant reductions in nonesterified free fatty acid cholesterol (NEFAc) at all doses tested.

REFERENCES

[1]. Dvorak CA, et al. Identification of Hydroxybenzoic Acids as Selective Lactate Receptor (GPR81) Agonists with Antilipolytic Effects. ACS Med Chem Lett. 2012;3(8):637-639. Published 2012 Jun 11.

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