1-Deoxynojirimycin

Cat. No.: HY-14860

CAS No.: 19130-96-2

Molecular Formula: $C_6H_{13}NO_4$

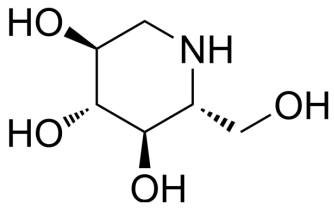
Molecular Weight: 163.17

Target: Glycosidase; PI3K

Pathway: Metabolic Enzyme/Protease; PI3K/Akt/mTOR

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 34 mg/mL (208.37 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	6.1286 mL	30.6429 mL	61.2858 mL
5 mM	1.2257 mL	6.1286 mL	12.2572 mL
10 mM	0.6129 mL	3.0643 mL	6.1286 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (612.86 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

1-Deoxynojirimycin (Duvoglustat) is a potent and orally active α-glucosidase inhibitor. 1-Deoxynojirimycin suppresses postprandial blood glucose and is widely used for diabetes mellitus. 1-Deoxynojirimycin possesses antihyperglycemic, anti-obesity, and antiviral features[1][2].

In Vivo

1-Deoxynojirimycin (Duvoglustat) (20-80 mg/kg; i.v.; daily for four weeks) shows anti-obesity effect [3].
1-Deoxynojirimycin significantly improves insulin sensitivity via activating insulin signaling PI3K/AKT pathway in skeletal muscle of db/db mice[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	db/db mice[3]

Dosage:	20, 40, 80 mg/kg
Administration:	Intravenously; daily for four weeks
Result:	Significantly reduced body weight, blood glucose and serum insulin levels; Improved glucose tolerance and insulin tolerance.

CUSTOMER VALIDATION

- Adv Healthc Mater. 2025 Jan 7:e2404015.
- Environ Microbiol. 2021 Mar 15.
- J Biol Chem. 2023 Sep 1;105211.
- Exp Cell Res. 2020 Nov 2;397(1):112334.

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REFERENCES

[1]. Chaluntorn Vichasilp,et al. Development of high 1-deoxynojirimycin (DNJ) content mulberry tea and use of response surface methodology to optimize tea-making conditions for highest DNJ extraction. LWT - Food Science and Technology. Volume 45, Issue 2, March 2012, Pages 226-232

[2]. Gao K, et al. 1-Deoxynojirimycin: Occurrence, Extraction, Chemistry, Oral Pharmacokinetics, Biological Activities and In Silico Target Fishing. Molecules. 2016 Nov 23;21(11). pii: E1600.

[3]. Liu Q, et al. 1-Deoxynojirimycin Alleviates Insulin Resistance via Activation of Insulin Signaling PI3K/AKT Pathway in Skeletal Muscle of db/db Mice. Molecules. 2015 Dec 4;20(12):21700-14.

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