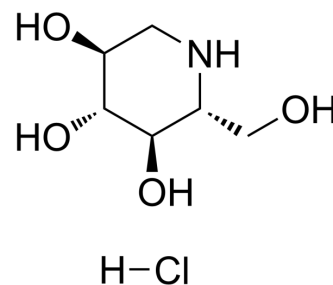


## 1-Deoxynojirimycin hydrochloride

<b>Cat. No.:</b>	HY-14860A
<b>CAS No.:</b>	73285-50-4
<b>Molecular Formula:</b>	C <sub>6</sub> H <sub>14</sub> ClNO <sub>4</sub>
<b>Molecular Weight:</b>	199.63
<b>Target:</b>	Glucosidase; PI3K; Bacterial; Antibiotic
<b>Pathway:</b>	Metabolic Enzyme/Protease; PI3K/Akt/mTOR; Anti-infection
<b>Storage:</b>	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



### SOLVENT & SOLUBILITY

#### In Vitro

H<sub>2</sub>O : 250 mg/mL (1252.32 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	5.0093 mL	25.0463 mL	50.0927 mL
	5 mM	1.0019 mL	5.0093 mL	10.0185 mL
	10 mM	0.5009 mL	2.5046 mL	5.0093 mL

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

### BIOLOGICAL ACTIVITY

#### Description

1-Deoxynojirimycin hydrochloride (Duvoglustat hydrochloride) is a potent and orally active  $\alpha$ -glucosidase inhibitor. 1-Deoxynojirimycin hydrochloride suppresses postprandial blood glucose and is widely used for diabetes mellitus. 1-Deoxynojirimycin hydrochloride possesses antihyperglycemic, anti-obesity, and antiviral features<sup>[1][2]</sup>.

#### In Vivo

1-Deoxynojirimycin hydrochloride (Duvoglustat hydrochloride) (20-80 mg/kg; i.v.; daily for four weeks) shows anti-obesity effect<sup>[3]</sup>.

1-Deoxynojirimycin hydrochloride significantly improves insulin sensitivity via activating insulin signaling PI3K/AKT pathway in skeletal muscle of db/db mice<sup>[3]</sup>.

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

Animal Model:	db/db mice <sup>[3]</sup>
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

- Environ Microbiol. 2021 Mar 15.
- J Biol Chem. 2023 Sep 1;105211.
- Exp Cell Res. 2020 Nov 2;397(1):112334.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

- [1]. 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.
- [2]. 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.
- [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.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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