(-)-Fucose

Cat. No.: HY-N1480

CAS No.: 2438-80-4

Molecular Formula: $C_6H_{12}O_5$

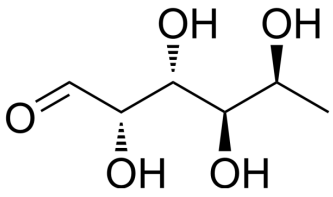
Molecular Weight: 164.16

Target: Endogenous Metabolite; Parasite

Pathway: Metabolic Enzyme/Protease; Anti-infection

Storage: -20°C, stored under nitrogen

* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (609.16 mM; Need ultrasonic)

DMSO : 50 mg/mL (304.58 mM; Need ultrasonic)

Preparing Stock Solutions

Mass / Solvent / Concentration	1 mg	5 mg	10 mg
1 mM	6.0916 mL	30.4581 mL	60.9162 mL
5 mM	1.2183 mL	6.0916 mL	12.1832 mL
10 mM	0.6092 mL	3.0458 mL	6.0916 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 (609.16 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (15.23 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (15.23 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (15.23 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

(-)-Fucose is classified as a member of the hexoses, plays a role in A and B blood group antigen substructure determination, selectin-mediated leukocyte-endothelial adhesion, and host-microbe interactions. (-)-Fucose is orally active, inhibits CL11-induced inflammatory response in kidney and tumor growth[2].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

(-)-Fucose (8-80 mM) inhibits the CL-11 binding to immobilized ligand and eliminates the trigger for complement activation with IC_{50} of 12.2 mM[2].

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

In Vivo

(-)-Fucose (100mg, i.p., single or double dosage) blocks the CL-11 associated complement C3d deposition on hypoxic renal tubules cells, reveals a protective effect against I/R injury with CL11 dependence in C57BL/6 mice[2].

(-)-Fucose (1-5 g/kg/d, i.p. for 11 days) inhibits tumor growth and mitotic activity, promotes tumor metastasis in solid Ehrlich tumour (SET) bearing NMRI mice[3].

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

Animal Model:	$CL11^{+/+}$ and $CL11^{-/-}$ C57BL/6 mice[2]
Dosage:	100 mg
Administration:	intraperitoneal injection, 1 h before ischemia induction or 1 h prior and a secong dose immediately following reperfusion.
Result:	Decreased C3d deposition in $CL^{+/+}$ C57BL/6 mice.

Animal Model:	SET bearing NMRI mice[3]
Dosage:	1-5 g/kg
Administration:	intraperitoneal injection, once everyday for 11 days.
Result:	Inhibited tumor growth, induced tumor metastasis.

REFERENCES

[1]. Howard MC, et al., l-Fucose prevention of renal ischaemia/reperfusion injury in Mice. FASEB J. 2020 Jan;34(1):822-834.

[2]. Tomsik, P, et al.,L-rhamnose and L-fucose suppress cancer growth in mice.cent.eur.j.biol.6, 1–9 (2011).

[3]. Becker DJ, et al. Fucose: biosynthesis and biological function in mammals. Glycobiology. 2003 Jul;13(7):41R-53R.

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