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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
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4,6-O-Ethylidene-α-D-glucose

Cat. No.: HY-N7433

CAS No.: 13224-99-2

Molecular Formula: $C_8H_{14}O_6$

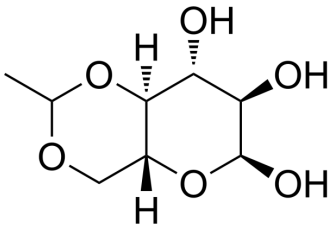
Molecular Weight: 206.19

Target: Endogenous Metabolite; GLUT

Pathway: Metabolic Enzyme/Protease; Membrane Transporter/Ion Channel

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : 125 mg/mL (606.24 mM; Need ultrasonic)
DMSO : 100 mg/mL (484.99 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.8499 mL	24.2495 mL	48.4990 mL
5 mM	0.9700 mL	4.8499 mL	9.6998 mL
10 mM	0.4850 mL	2.4249 mL	4.8499 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 (484.99 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 (12.12 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (12.12 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (12.12 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

4,6-O-ethylidene-α-D-glucose (Ethylidene-glucose), a glucose derivative, is a competitive exofacial binding-site inhibitor on glucose transporter 1 (GLUT1) with a K_i of 12 mM for wild-type 2-deoxy-D-glucose transport[1][2][3].

IC_{50} & Target		
	GLUT1	Human Endogenous Metabolite

In Vitro	4,6-O-ethylidene-α-D-glucose (Ethylidene-glucose) shows poor affinity for malarial hexose transporter (PfHT1; K_i>50 mM). 4,6-O-ethylidene-α-D-glucose inhibits wild-type transport with a K_i of approximately 12 mM, but this is increased to greater than 120 mM in the Gln282-Leu mutant[1]. 4,6-O-ethylidene-α-D-glucose inhibits glucose exit competitively but its penetration into human red cells is unaffected by glucose in the medium. The potentiation of the development of FDNB inhibition by sugars in the incubating medium is absent when 4,6-O-ethylidene-α-D-glucose is used and there is a slight protective action. 4,6-O-ethylidene-α-D-glucose penetrates human red cells by simple diffusion supported by its penetration of guinea-pig red cells at similar rates, by the occurrence of osmotic haemolysis in isosmotic solutions which is unaffected by copper ions and by the relatively high ether/water partition of the compound[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. M Hashiramoto, et al. Site-directed Mutagenesis of GLUT1 in Helix 7 Residue 282 Results in Perturbation of Exofacial Ligand Binding. J Biol Chem. 1992 Sep 5;267(25):17502-7.

[2]. Malay Patra, et al. A Potent Glucose-Platinum Conjugate Exploits Glucose Transporters and Preferentially Accumulates in Cancer Cells. Angew Chem Int Ed Engl. 2016 Feb 12;55(7):2550-4.

[3]. G F Baker, et al. The Permeation of Human Red Cells by 4,6-O-ethylidene- -D-glucopyranose (Ethylidene Glucose). J Physiol. 1973 May;231(1):129-42.

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