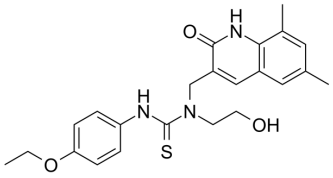
β-Glucuronidase-IN-1

Cat. No.:	HY-103081
CAS No.:	484006-66-8
Molecular Formula:	$C_{23}H_{27}N_3O_3S$
Molecular Weight:	425.54
Target:	Bacterial
Pathway:	Anti-infection

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 (235.00 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.3500 mL	11.7498 mL	23.4996 mL
5 mM	0.4700 mL	2.3500 mL	4.6999 mL
10 mM	0.2350 mL	1.1750 mL	2.3500 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.87 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 2.5 mg/mL (5.87 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

β-Glucuronidase-IN-1 is a potent, selective, uncompetitive, and orally active E. coli bacterial β-glucuronidase inhibitor, exhibiting an IC_{50} and a K_i of 283 nM and 164 nM, respectively[1].

IC_{50} & Target

IC50: 283 nM (E. coli β-glucuronidase)
Ki: 164 nM (E. coli β-glucuronidase)[1]

In Vitro

β-Glucuronidase-IN-1 (Inhibitor 1) (0.01-100 μM) inhibits E. coli β-glucuronidase activity as a dose-dependent manner and exhibits an IC_{50} and a K_i value with 283 nM and 164 nM, respectively[1].
β-Glucuronidase-IN-1 (100 μM; 24-72 hours) maintains potent efficacy in living bacterial cells (EC_{50}=17.7 nM), it does not affect bacterial cell growth under aerobic or anaerobic conditions or killing mammalian epithelial cells[1].

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

Cell Viability Assay[1]

Cell Line:	CMT93, CaCO-2, HCT116 cells
Concentration:	100 μM
Incubation Time:	24 hours, 48 hours and 72 hours
Result:	Did not impact mammalian cell survival and any reduction in cell viability were attributed to the presence of DMSO.

In Vivo

β-Glucuronidase-IN-1 (oral gavage; 10 μg; twice per day; 11 days) protects the mouse GI epithelium from CPT-11–induced damage and protects the glandular structure of CPT-11-treated intestinal tissues[1].

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

Animal Model:	Healthy 6- to 8-week-old Balb/cJ mice[1]
Dosage:	10 μg
Administration:	Oral gavage; twice per day; 11 days
Result:	Alleviated CPT-11-induced toxicity in mice.

REFERENCES

[1]. Wallace BD, et al. Alleviating cancer drug toxicity by inhibiting a bacterial enzyme.Science. 2010 Nov 5;330(6005):831-5.

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