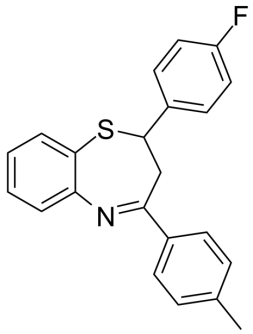
α-Glucosidase-IN-16

Cat. No.:	HY-151138
CAS No.:	1606142-34-0
Molecular Formula:	$C_{22}H_{18}FNS$
Molecular Weight:	347.45
Target:	Glucosidase
Pathway:	Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	α-Glucosidase-IN-16 is a potent and orally active α-glucosidase inhibitor with an IC_{50} value of 3.28 μM. α-Glucosidase-IN-16 can reduce the level of blood glucose in Streptozotocin-induced diabetic rats. Antidiabetic activity[1].
IC_{50} & Target	IC_{50}: 3.28 μM (α-Glucosidase)[1]

In Vivo

α-Glucosidase-IN-16 (compound 13B) (10 and 20 mg/kg; PO; once daily for 28 days) significantly reduces the level of blood glucose in diabetic rats[1].

α-Glucosidase-IN-16 (2000 mg/kg; PO; single dosage) exhibits no toxic effects in mice[1].

α-Glucosidase-IN-16 (10 and 20 mg/kg; PO; single dosage) significantly reduces serum glucose level after glucose administration in rats[1].

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

Animal Model:	Wistar rats (170-200 g, 8-10 weeks; induced diabetes by intraperitoneal injection of Streptozotocin (HY-13753))[1]
Dosage:	10 and 20 mg/kg
Administration:	PO; once daily for 28 days
Result:	Caused a significant reduction in the level of blood glucose compared to diabetic control. Lowered the total cholesterol level. Effect of α-Glucosidase-IN-16 on blood glucose (mg/dL) in Streptozotocin-induced diabetes [1].

dose (mg/kg)	day 1	day 7	day 14	day 21	day 28
10	370.81 ± 4.79	289.89 ± 4.33	200.33 ± 4.57	149.30 ± 4.56	132.98 ± 4.33
20	375.31 ± 5.01	230.71 ± 4.88	163.68 ± 4.37	120.72 ± 4.11	108.42 ± 3.98

Animal Model:	Balb/C mice[1]
Dosage:	2000 mg/kg
Administration:	PO; single dosage (acute toxicity study)
Result:	Exhibited no toxic effects (via observing signs of diarrhea, convulsions, lethargy, sleeping, salivation, and tremor).

Animal Model:	Wistar rats (oral administration with 3 g/kg glucose)[1]
Dosage:	10 and 20 mg/kg
Administration:	PO; single dosage (oral glucose tolerance test)
Result:	Significantly reduced serum glucose level (110-113 mg/dL) compared to the control group (128 mg/dL) after 2 hours of glucose administration.

REFERENCES

[1]. Rabia Mehmood, et al. Synthesis of Novel 2,3-Dihydro-1,5-Benzothiazepines as α-Glucosidase Inhibitors: In Vitro, In Vivo, Kinetic, SAR, Molecular Docking, and QSAR Studies. ACS Omega 2022 Aug.

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