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α-Glucosidase-IN-57

Cat. No.: HY-163433

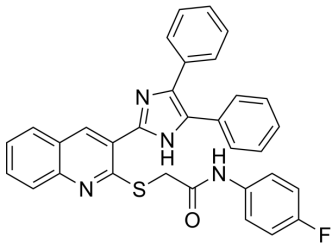
Molecular Formula: $C_{32}H_{23}FN_4OS$

Molecular Weight: 530.61

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-57 (Compound 10c) is a competitive and orally active α-glucosidase inhibitor with an IC_{50} value of 0.180 μM and a K_i of 0.15 μM. α-Glucosidase-IN-57 can reduce fasting and overall blood glucose levels in mice, and can be used for anti-diabetes research[1].

In Vitro

α-Glucosidase-in-57 (Compound 10c) (0, 0.045, 0.09, 0.18 μM) competes with the substrate p-NPG (HY-W039892) (1-16 μM) for the same active site of the α-Glucosidase enzyme. α-Glucosidase-IN-57 acts as a potent competitive inhibitor of alpha-glucosidase[1].

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

In Vivo

α-Glucosidase-IN-57 (Compound 10c) (250, 500, 1000 mg/kg; Oral gavage (p.o.); 72h) is well tolerated and safe in Wistar albino rat models[1].

α-Glucosidase-IN-57 (10, 25, 50 mg/kg; Oral gavage (p.o.); once daily for 28 days) has hypoglycemic activity in a Wistar albino rat model of diabetes, including reduces fasting blood glucose levels, improves glucose tolerance, and possibly improves islet structure of pancreatic tissue[1].

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

Animal Model:	Male Wistar albino rats with diabetes[1]
Dosage:	α-Glucosidase-IN-57: 10, 25, 50 mg/kg; Acarbose: 50 mg/kg
Administration:	Oral gavage (p.o.); once daily for 28 days
Result:	In the first 7 days, fasting blood glucose levels were not significantly different from diabetic controls. On day 14, significantly reduced blood glucose levels at oral doses of 25 and 50 mg/kg, while Acarbose (at oral doses of 50 mg/kg) achieved the same effect. On day 21, had the best hypoglycemic effect with acarbose at oral doses of 25 and 50 mg/kg, which was significantly better than the diabetic control group. On day 28, blood glucose levels were significantly lower than those in the diabetic control group.

REFERENCES

[1]. Khalili Ghomi M, et al. Evaluation of novel 2-(quinoline-2-ylthio)acetamide derivatives linked to diphenyl-imidazole as α-glucosidase inhibitors: Insights from in silico, in vitro, and in vivo studies on their anti-diabetic properties. Eur J Med Chem. 2024 Apr 5;269:116332.

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