Gitogenin

Cat. No.: HY-N2574

CAS No.: 511-96-6

Molecular Formula: $C_{27}H_{44}O_4$

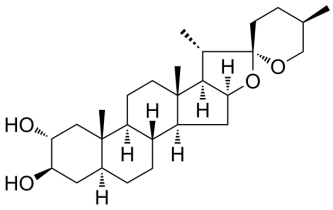
Molecular Weight: 432.64

Target: Glucosidase

Pathway: Metabolic Enzyme/Protease

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 1.85 mg/mL (4.28 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3114 mL	11.5570 mL	23.1139 mL
	5 mM	---	---	---
	10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

Gitogenin is a natural steroid isolated from the whole plant of Tribulus longipetalus. Gitogenin is a selective inhibitor of UDP-glucuronosyltransferase 1A4 (UGT1A4) and enzyme α-glucosidase with IC_{50} values of 0.69 μM (use trifluoperazine as a substrate) and 37.2 μM, respectively, and does not inhibit the activities of major human cytochrome P450 isoforms[1][2].

IC_{50} & Target

IC50: 0.69 μM (UDP-glucuronosyltransferase 1A4)[1]; IC50: 37.2 μM (α-glucosidase)[2]

In Vitro

When tamoxifen is used as the substrate metabolized by UGT1A4 in HLMs, Gitogenin exhibits potent inhibition of tamoxifen, with an IC_{50} value of 6.13 μM. Similarly, for midazolam as the substrate of UGT1A4, the IC_{50} value is 5.7 μM. In addition, when olanzapine is used as a substrate of UGT1A4, the IC_{50} value is determined as 6.0 μM. Finally, we also evaluats Gitogenin for asenapine glucuronidation mediated by UGT1A4, and similar inhibition effect is observed, with an IC_{50} value of 22.0 μM[1].

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

In Vivo

Stimulation of growth hormone release is investigated on rat pituitary cells in vitro. Gitogenin (20 μg/mL) shows rat growth-hormone (rGH) release stimulating activities (26.1 ng/mL)[3].

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

CUSTOMER VALIDATION

- FEBS Open Bio. 2020 Oct;10(10):2097-2106.

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REFERENCES

[1]. Xu M, et al. Drug interaction study of natural steroids from herbs specifically toward human UDP-glucuronosyltransferase (UGT) 1A4 and their quantitative structure activity relationship (QSAR) analysis for prediction. Pharmacol Res. 2016 Aug;110:139-150.

[2]. Naveed MA, et al. Longipetalosides A-C, new steroidal saponins from Tribulus longipetalus. Steroids. 2014 May;83:45-51.

[3]. Shim SH, et al. Rat growth-hormone release stimulators from fenugreek seeds. Chem Biodivers. 2008 Sep;5(9):1753-61.

[4]. Xu M, et al. Drug interaction study of natural steroids from herbs specifically toward human UDP-glucuronosyltransferase (UGT) 1A4 and their quantitative structure activity relationship (QSAR) analysis for prediction. Pharmacol Res. 2016 Aug;110:139-150.

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