Asperuloside

Cat. No.: HY-N1382

CAS No.: 14259-45-1

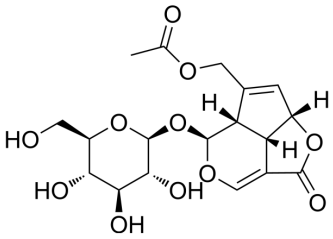
Molecular Formula: $C_{18}H_{22}O_{11}$

Molecular Weight: 414.36

Target: NO Synthase

Pathway: Immunology/Inflammation

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (241.34 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	2.4134 mL	12.0668 mL	24.1336 mL
	5 mM	0.4827 mL	2.4134 mL	4.8267 mL
	10 mM	0.2413 mL	1.2067 mL	2.4134 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 (6.03 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.03 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.03 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Asperuloside is an iridoid isolated from Hedyotis diffusa, with anti-inflammatory activity. Asperuloside inhibits inducible nitric oxide synthase (iNOS), suppresses NF-κB and MAPK signaling pathways[1].

IC_{50} & Target

iNOS

In Vitro

Asperuloside (0-160 μg/mL, 1 h) inhibits productions of NO, PGE2, TNF-α and IL-6 in LPS-Induced RAW 264.7 cells[1].
Asperuloside (0-5 mM, 24 h) inhibits cell viability and induces ER stress dependent apoptosis in leukemia cell lines (U937, HL-60, AML)[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[3]

Cell Line:	U937 cells
Concentration:	0-5 mM
Incubation Time:	24 h
Result:	Increased the cleaved Caspase-3, Caspase-9, and PARP, and Cyto-c release frommitochondria. Induced expression of GRP78, p-PERK, p-eIF2α, CHOP, p-IRE1, XBP1, ATF6 and cleaved Caspase-12

In Vivo

Asperuloside (p.o., 3 mg/day, 0.3% in diet, daily, 12 weeks) reduces food intake, body weight, and adipose masses in rats consuming a high fat diet (HFD)[2].
Asperuloside (30 and 60 mg/kg, i.p., 30 days) inhibits tumor growth of U937 xenografts mice model[3].
Asperuloside (20-80 mg/kg, i.p.) relieves LPS-induced acute lung injury via inhibiting MAPK and NF-κB signaling in BALB/c mice[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Rats consuming a high fat diet (HFD)[2]
Dosage:	3 mg/day
Administration:	p.o., 0.3% in diet, daily, 12 weeks
Result:	Reduced body weight, energy intake, adiposity, blood glucose, and plasma insulin.

CUSTOMER VALIDATION

- J Ethnopharmacol. 11 October 2021, 114739.
- Molecules. 2023 Mar 22;28(6):2867.

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REFERENCES

[1]. Ishaq M, et al. Asperuloside Enhances Taste Perception and Prevents Weight Gain in High-Fat Fed Mice. Front Endocrinol (Lausanne). 2021 Apr 13;12:615446.

[2]. Rong C, et al. Asperuloside exhibits a novel anti-leukemic activity by triggering ER stress-regulated apoptosis via targeting GRP78. Biomed Pharmacother. 2020 May;125:109819.

[3]. Qiu J, et al. Pretreatment with the compound asperuloside decreases acute lung injury via inhibiting MAPK and NF-κB signaling in a murine model. Int Immunopharmacol. 2016 Feb;31:109-15.

[4]. He J, et al. Asperuloside and Asperulosidic Acid Exert an Anti-Inflammatory Effect via Suppression of the NF-κB and MAPK Signaling Pathways in LPS-Induced RAW 264.7 Macrophages. Int J Mol Sci. 2018 Jul 12;19(7).

Caution: Product has not been fully validated for medical applications. For research use only.

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