Smilagenin

Cat. No.: HY-106353

CAS No.: 126-18-1

Molecular Formula: $C_{27}H_{44}O_3$

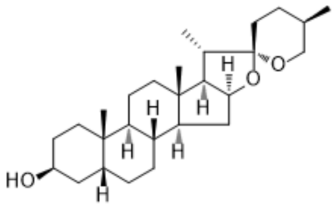
Molecular Weight: 416.64

Target: mAChR; Endogenous Metabolite

Pathway: GPCR/G Protein; Neuronal Signaling; Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

Ethanol : ≥ 10 mg/mL (24.00 mM)

DMSO : < 1 mg/mL (insoluble or slightly soluble)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4002 mL	12.0008 mL	24.0015 mL
5 mM	0.4800 mL	2.4002 mL	4.8003 mL
10 mM	0.2400 mL	1.2001 mL	2.4002 mL

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

In Vivo

1. Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 0.83 mg/mL (1.99 mM); Clear solution
2. Add each solvent one by one: 10% EtOH >> 90% corn oil
   Solubility: ≥ 0.83 mg/mL (1.99 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Smilagenin (SMI) is a small-molecule steroidal sapogenin from Anemarrhena asphodeloides and Pelargonium hortorum widely used in traditional Chinese medicine for treating chronic neurodegeneration diseases[1]. Smilagenin (SMI) improves memory of aged rats by increasing the muscarinic receptor subtype 1 (M1)-receptor density[2].Smilagenin (SMI) attenuates A β(25-35)-induced neurodegenerationvia stimulating the gene expression of brain-derived neurotrophic factor, may represents a novel therapeutic strategy for AD[3].

IC_{50} & Target

mAChR1

In Vitro

Smilagenin (10 μM; 24 hours) increases SH-SY5Y cell survival compared with Aβ(25-35) intoxicated cells[3].
Smilagenin (10 μM; 24 hours) increases neurotrophic factor (GDNF) and neurotrophic factor (BDNF) mRNA level by promoting CREB phosphorylation in 1-methyl-4-phenylpyridimium (MPP^+) treated SH-SY5Y cells[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[3]

Cell Line:	SH-SY5Y cells
Concentration:	10 μM
Incubation Time:	24 hours
Result:	Elevated the SH-SY5Y cell viability.

RT-PCR[2]

Cell Line:	SH-SY5Y cells
Concentration:	10 μM
Incubation Time:	24 hours
Result:	Increased GDNF and BDNF transcription.

In Vivo

Smilagenin (intragastric administration; 10 or 26 mg/kg, once daily; 60 days) prevents the impairment of dopaminergic neurons in chronic MPTP/probenecid-induced mouse model[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	MPTP/probenecid-induced mouse model[2]
Dosage:	10 or 26 mg/kg
Administration:	Intragastric administration; 10 or 26 mg/kg; once daily; 60 days
Result:	Ameliorated locomotor ability of MPTP/probenecid-lesioned mice.

CUSTOMER VALIDATION

- PLoS One. 2020 Dec 31;15(12):e0244654.

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REFERENCES

[1]. He X, et al. Smilagenin Protects Dopaminergic Neurons in Chronic MPTP/Probenecid-Lesioned Parkinson's Disease Models. Front Cell Neurosci. 2019 Feb 5;13:18.

[2]. Hu Y, et al. Regulation of M1-receptor mRNA stability by smilagenin and its significance in improving memory of aged rats. Neurobiol Aging. 2010 Jun;31(6):1010-9.

[3]. Zhang R, et al. Smilagenin attenuates beta amyloid (25-35)-induced degeneration of neuronal cells via stimulating the gene expression of brain-derived neurotrophic factor. Neuroscience. 2012 May 17;210:275-85

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

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