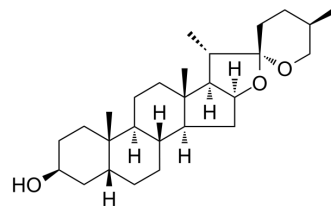


## Smilagenin

<b>Cat. No.:</b>	HY-106353		
<b>CAS No.:</b>	126-18-1		
<b>Molecular Formula:</b>	C <sub>27</sub> H <sub>44</sub> O <sub>3</sub>		
<b>Molecular Weight:</b>	416.64		
<b>Target:</b>	mAChR; Endogenous Metabolite		
<b>Pathway:</b>	GPCR/G Protein; Neuronal Signaling; Metabolic Enzyme/Protease		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

Ethanol : ≥ 10 mg/mL (24.00 mM)  
 DMSO : 5 mg/mL (12.00 mM; Need ultrasonic)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent		1 mg	5 mg	10 mg
	Concentration	Mass			
	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.

### BIOLOGICAL ACTIVITY

#### Description

Smilagenin (SMI) is a small-molecule steroidal sapogenin from *Rhizoma anemarrhenae* and *Radix asparagi* widely used in traditional Chinese medicine for treating chronic neurodegeneration diseases<sup>[1]</sup>. Smilagenin (SMI) improves memory of aged rats by increasing the muscarinic receptor subtype 1 (M1)-receptor density<sup>[2]</sup>. Smilagenin (SMI) attenuates Aβ(25-35)-induced neurodegeneration via stimulating the gene expression of brain-derived neurotrophic factor, may represent a novel therapeutic strategy for AD<sup>[3]</sup>.

#### IC<sub>50</sub> & Target

Human Endogenous Metabolite

#### In Vitro

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

Cell Line:	SH-SY5Y cells
Concentration:	10 $\mu$ M
Incubation Time:	24 hours
Result:	Elevated the SH-SY5Y cell viability.
RT-PCR <sup>[2]</sup>	
Cell Line:	SH-SY5Y cells
Concentration:	10 $\mu$ M
Incubation Time:	24 hours
Result:	Increased GDNF and BDNF transcription.

### In Vivo

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

Animal Model:	MPTP/probenecid-induced mouse model <sup>[2]</sup>
Dosage:	10 or 26 mg/kg
Administration:	Intra-gastric 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.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## 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

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

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