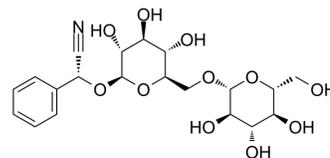


## Amygdalin

<b>Cat. No.:</b>	HY-N0190		
<b>CAS No.:</b>	29883-15-6		
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>27</sub> NO <sub>11</sub>		
<b>Molecular Weight:</b>	457.43		
<b>Target:</b>	Others		
<b>Pathway:</b>	Others		
<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

DMSO : ≥ 75 mg/mL (163.96 mM)  
 H<sub>2</sub>O : 50 mg/mL (109.31 mM; Need ultrasonic)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.1861 mL	10.9306 mL	21.8613 mL
	5 mM	0.4372 mL	2.1861 mL	4.3723 mL
	10 mM	0.2186 mL	1.0931 mL	2.1861 mL

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

#### In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
 Solubility: ≥ 2.5 mg/mL (5.47 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Amygdalin is a plant glucoside isolated from the stones of rosaceous fruits, such as apricots, peaches, almond, cherries, and plums.

#### In Vitro

Amygdalin has antitumor activity. Some advances had been made on the antitumor mechanism of amygdalin<sup>[1]</sup>. Amygdalin downregulates especially genes belonging to cell cycle category: exonuclease 1, ATP-binding cassette, sub-family F, member 2, MRE11 meiotic recombination 11 homolog A, topoisomerase (DNA) I, and FK506 binding protein 12-rapamycin-associated protein 1. RT-PCR analysis reveals that mRNA levels of these genes are also decreased by amygdalin treatment in SNU-C4 human colon cancer cells<sup>[2]</sup>.  
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## In Vivo

Amygdalin is effective at alleviating inflammatory pain and that it can be used as an analgesic with anti-nociceptive and anti-inflammatory activities. The intramuscular injection of amygdalin significantly reduced the formalin-induced tonic pain in both early (the initial 10 min after formalin injection) and late phases (10-30 min following the initial formalin injection). During the late phase, amygdalin reduces the formalin-induced pain in a dose-dependent manner in a dose range less than 1 mg/kg<sup>[3]</sup>.

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## PROTOCOL

### Cell Assay <sup>[2]</sup>

Cell viability is determined by MTT assay. Cells are seeded in triplicate at a concentration of  $1 \times 10^5$  cells/well on a 96-well plate. SNU-C4 cells are treated with amygdalin at concentrations of 0.25, 0.5, 2.5, and 5 mg/mL for 24 h. After MTT is added to each group, the cells are incubated for 4 h. Then, they are further incubated for 1 h, including the solution in which MTT is dissolved<sup>[2]</sup>.

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### Animal Administration <sup>[3]</sup>

Rats: The amygdalin powder is dissolved in saline and diluted with appropriate medium. Male Sprague-Dawley rats weighing 230-250 g are used for this experiment. 50mL of 5% formalin are injected to produce formalin-induced pain in the rats. Thirty minutes before the formalin injection to induce pain, the rats are given an intramuscular injection of amygdalin solution (0.1, 0.5, 1.0, 10 mg/kg), or saline as a vehicle control<sup>[3]</sup>.

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

## CUSTOMER VALIDATION

- Biochem Biophys Res Commun. 5 March 2022.
- Evid Based Complement Alternat Med. 2020 May 23;2020:8607931.

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## REFERENCES

- [1]. Song Z, et al. Advanced research on anti-tumor effects of amygdalin. J Cancer Res Ther. 2014 Aug;10 Suppl 1:3-7.
- [2]. Park HJ, et al. Amygdalin inhibits genes related to cell cycle in SNU-C4 human colon cancer cells. World J Gastroenterol. 2005 Sep 7;11(33):5156-61.
- [3]. Hwang HJ, et al. Antinociceptive effect of amygdalin isolated from Prunus armeniaca on formalin-induced pain in rats. Biol Pharm Bull. 2008 Aug;31(8):1559-64.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA