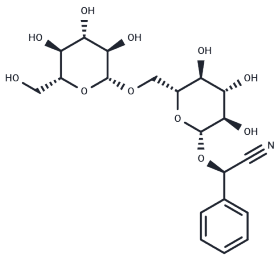
Data Sheet (Cat.No.T2795)

TargetMol

Amygdalin

Chemical Properties



CAS No. : 29883-15-6

Formula: C20H27NO11

Molecular Weight: 457.43

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Amygdalin (Laetrile) has antifibrotic, antitumor, anti-inflammatory and analgesic effects, amygdalin joint HSYA could inhibit the degeneration of the endplate chondrocytes derived from intervertebral discs of rats induced by IL-1beta and better than the single use of Amygdalin or HSYA. Amygdalin induces apoptotic cell death in human DU145 and LNCaP prostate cancer cells by caspase-3 activation through down-regulation of Bcl-2 and up-regulation of Bax.
Targets(IC50)	Others
In vitro	Amygdalin exhibits antitumor properties, with studies showing progress in elucidating its mechanism of action[1]. Specifically, amygdalin downregulates genes related to the cell cycle, including 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 has demonstrated that amygdalin treatment leads to reduced mRNA levels of these genes in SNU-C4 human colon cancer cells[2].
In vivo	Amygdalin demonstrates efficacy in mitigating inflammatory pain, serving as an analgesic endowed with anti-nociceptive and anti-inflammatory properties. Administered intramuscularly, it notably diminishes formalin-induced tonic pain in the initial acute phase (the initial 10 min after formalin injection) as well as the persistent, late phase (10-30 min post-formalin injection). Moreover, amygdalin's pain-reduction effect escalates with increasing doses, up to a threshold of less than 1 mg/kg during the latter period[3].
Cell Research	Cell viability is determined by MTT assay. Cells are seeded in triplicate at a concentration of 1×105 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[2].

Solubility Information

Solubility	DMSO: 250 mg/mL (546.53 mM),Sonication is recommended. H2O: 45.74 mg/mL (99.99 mM),Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble),

Solubility	(< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 3.3 mg/mL (7.21 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
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
50 mM	0.0437 mL	0.2186 mL	0.4372 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Song Z, et al. Advanced research on anti-tumor effects of amygdalin. J Cancer Res Ther. 2014 Aug;10 Suppl 1:3-7.
Lu R Y, Ling Z Y, Chen L L, et al.Anti-sepsis effects of Dahuang Mudan decoction and its disassembled prescriptions.Journal of Ethnopharmacology.2024: 119248.
Huang B, Lin B, Zheng H, et al.Discovery of natural products as influenza neuraminidase inhibitors: in silico screening, in vitro validation, and molecular dynamic simulation studies.Molecular Diversity.2025: 1-17.
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.
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.