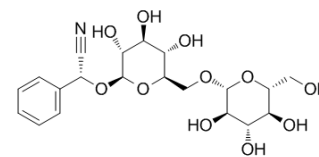


## Amygdalin

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

\* "≥" means soluble, but saturation unknown.

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

### 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>.

#### 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.

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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>.

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

### 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.

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

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