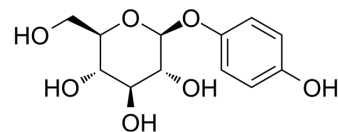


Arbutin

Cat. No.:	HY-N0192
CAS No.:	497-76-7
Molecular Formula:	C ₁₂ H ₁₆ O ₇
Molecular Weight:	272.25
Target:	Tyrosinase; Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	<div> <div>Powder</div> <div>-20°C 3 years</div> <div>4°C 2 years</div> </div> <div> <div>In solvent</div> <div>-80°C 2 years</div> <div>-20°C 1 year</div> </div>



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 50 mg/mL (183.65 mM)
H₂O : 33.33 mg/mL (122.42 mM; Need ultrasonic)
* "≥" means soluble, but saturation unknown.

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		3.6731 mL	18.3655 mL	36.7309 mL
	5 mM		0.7346 mL	3.6731 mL	7.3462 mL
	10 mM		0.3673 mL	1.8365 mL	3.6731 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 100 mg/mL (367.31 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (9.18 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (9.18 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (9.18 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Arbutin (β-Arbutin) is a competitive inhibitor of tyrosinase, with K_i^{app} values of 1.42 mM for monophenolase; 0.9 mM for diphenolase. Arbutin is also used as depigmenting agents^[1]. Arbutin is a natural polyphenol isolated from the bearberry plant *Arctostaphylos uvaursi*, possesses with anti-oxidant, anti-inflammatory and anti-tumor properties^{[2][3]}.

IC ₅₀ & Target	Human Endogenous Metabolite																
In Vitro	<p>Arbutin (0.3-5.4 mM; 24 hours, 48 hours, 72 hours; B16 murine melanoma cells) inhibits the viability of B16 murine melanoma cells in a time-and dose-dependent manner^[2].</p> <p>?Arbutin (1.4-5.4 mM; 24 hours) increases the apoptosis rate of B16 murine melanoma cell of treatment at a dose of 5.4 mM^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay^[2]</p> <table> <tr> <td>Cell Line:</td><td>B16 murine melanoma cells</td></tr> <tr> <td>Concentration:</td><td>0.3 mM, 0.7 mM, 1.4 mM, 2.1 mM, 2.9 mM, 3.6 mM, 5.4 mM</td></tr> <tr> <td>Incubation Time:</td><td>24 hours, 48 hours or 72 hours</td></tr> <tr> <td>Result:</td><td>Inhibited the viability of B16 murine melanoma cells in a time- and dose-dependent manner.</td></tr> </table> <p>Apoptosis Analysis^[2]</p> <table> <tr> <td>Cell Line:</td><td>B16 murine melanoma cells</td></tr> <tr> <td>Concentration:</td><td>1.4 mM, 2.9 mM, 5.4 mM</td></tr> <tr> <td>Incubation Time:</td><td>24 hours</td></tr> <tr> <td>Result:</td><td>Caused apoptosis in 19.3% of the cells.</td></tr> </table>	Cell Line:	B16 murine melanoma cells	Concentration:	0.3 mM, 0.7 mM, 1.4 mM, 2.1 mM, 2.9 mM, 3.6 mM, 5.4 mM	Incubation Time:	24 hours, 48 hours or 72 hours	Result:	Inhibited the viability of B16 murine melanoma cells in a time- and dose-dependent manner.	Cell Line:	B16 murine melanoma cells	Concentration:	1.4 mM, 2.9 mM, 5.4 mM	Incubation Time:	24 hours	Result:	Caused apoptosis in 19.3% of the cells.
Cell Line:	B16 murine melanoma cells																
Concentration:	0.3 mM, 0.7 mM, 1.4 mM, 2.1 mM, 2.9 mM, 3.6 mM, 5.4 mM																
Incubation Time:	24 hours, 48 hours or 72 hours																
Result:	Inhibited the viability of B16 murine melanoma cells in a time- and dose-dependent manner.																
Cell Line:	B16 murine melanoma cells																
Concentration:	1.4 mM, 2.9 mM, 5.4 mM																
Incubation Time:	24 hours																
Result:	Caused apoptosis in 19.3% of the cells.																
In Vivo	<p>Arbutin (50 mg/kg, 100 mg/kg; oral administration; every day; for 17 days; male C57BL/6 mice) pretreatment exhibits markedly protective effects on ISO-induced cardiac hypertrophy in mice^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table> <tr> <td>Animal Model:</td><td>Male C57BL/6 mice (20-25 g)^[3]</td></tr> <tr> <td>Dosage:</td><td>50 mg/kg, 100 mg/kg</td></tr> <tr> <td>Administration:</td><td>Oral administration; every day; for 17 days</td></tr> <tr> <td>Result:</td><td>Ameliorated the ISO-induced myocardial injury.</td></tr> </table>	Animal Model:	Male C57BL/6 mice (20-25 g) ^[3]	Dosage:	50 mg/kg, 100 mg/kg	Administration:	Oral administration; every day; for 17 days	Result:	Ameliorated the ISO-induced myocardial injury.								
Animal Model:	Male C57BL/6 mice (20-25 g) ^[3]																
Dosage:	50 mg/kg, 100 mg/kg																
Administration:	Oral administration; every day; for 17 days																
Result:	Ameliorated the ISO-induced myocardial injury.																

CUSTOMER VALIDATION

- FEBS Open Bio. 2021 Jan;11(1):289-299.

See more customer validations on www.MedChemExpress.com

REFERENCES

- [1]. Garcia-Jimenez A, et al. Action of tyrosinase on alpha and beta-arbutin: A kinetic study. PLoS One. 2017 May 11;12(5):e0177330.
- [2]. Jiang L, et al. Investigation of the pro-apoptotic effects of arbutin and its acetylated derivative on murinemelanoma cells. Int J Mol Med. 2018 Feb;41(2):1048-1054.

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

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