Ziyuglycoside I

Cat. No.: HY-N0331

CAS No.: 35286-58-9

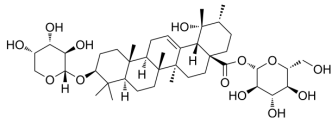
Molecular Formula: $C_{41}H_{66}O_{13}$

Molecular Weight: 766.96

Target: MDM-2/p53; Apoptosis

Pathway: Apoptosis

Storage: -20°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

Methanol : 125 mg/mL (162.98 mM; Need ultrasonic)
DMSO : 100 mg/mL (130.38 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.3038 mL	6.5192 mL	13.0385 mL
5 mM	0.2608 mL	1.3038 mL	2.6077 mL
10 mM	0.1304 mL	0.6519 mL	1.3038 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (2.71 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (2.71 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (2.71 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ziyuglycoside I isolated from S. officinalis root, has anti-wrinkle activity, and increases the expression of type I collagen. Ziyuglycoside I could be used as an active ingredient for cosmetics[1]. Ziyuglycoside I triggers cell cycle arrest and apoptosis mediated by p53, it can be a potential agent candidate for treating triple-negative breast cancer (TNBC)[2].

In Vitro

Ziyuglycoside I (5-160 μM; 24 hours) reveals a marked anti-proliferation activity with an IC_{50} value of 13.96 μM in MDA-MB-231 cells[2].
Ziyuglycoside I (5-20 μM; 24 hours) induces MDA-MB-231 cell apoptosis by increasing the percentage of apoptotic cells from 2.43% to 44.76% at 20 μM[2].

Ziyuglycoside I (5-20 μM; 24 hours) induces the cleavage of caspas-8, caspase-9, and caspase-3, up-regulates the pro-apoptotic protein Bax, and down-regulates anti-apoptotic protein Bal-2, dose-dependently reduces the level of mito-cyto c expression[2].

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

Cell Viability Assay[1]

Cell Line:	MDA-MB-231 cells
Concentration:	5 μM, 10 μM, 20 μM, 40 μM, 80 μM, and 160 μM
Incubation Time:	24 hours
Result:	Showed cytotoxicity on MDA-MB-231 cells.

Cell Cycle Analysis[1]

Cell Line:	MDA-MB-231 cells
Concentration:	5 μM, 10 μM, and 20 μM
Incubation Time:	24 hours
Result:	Induced G2/M phase arrest and apoptosis on MDA-MB-231 Cells

Western Blot Analysis[1]

Cell Line:	MDA-MB-231 cells
Concentration:	5 μM, 10 μM, and 20 μM
Incubation Time:	24 hours
Result:	Induced apoptosis in MDA-MB-231 Cells through Intrinsic and Extrinsic Pathways.

REFERENCES

[1]. Kim YH, et al. Anti-wrinkle activity of ziyuglycoside I isolated from a Sanguisorba officinalis root extract and its application as a cosmeceutical ingredient. Biosci Biotechnol Biochem. 2008 Feb;72(2):303-11. Epub 2008 Feb 7.

[2]. Zhu X, et al. Ziyuglycoside I Inhibits the Proliferation of MDA-MB-231 Breast Carcinoma Cells through Inducing p53-Mediated G2/M Cell Cycle Arrest and Intrinsic/Extrinsic Apoptosis. Int J Mol Sci. 2016 Nov 22;17(11). pii: E1903

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

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