Gossypol (acetic acid)

Cat. No.: HY-17510

CAS No.: 12542-36-8

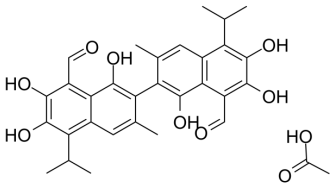
Molecular Formula: $C_{32}H_{34}O_{10}$

Molecular Weight: 578.61

Target: Bcl-2 Family

Pathway: Apoptosis

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (43.21 mM; Need ultrasonic)
H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.7283 mL	8.6414 mL	17.2828 mL
5 mM	0.3457 mL	1.7283 mL	3.4566 mL
10 mM	0.1728 mL	0.8641 mL	1.7283 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: ≥ 2.5 mg/mL (4.32 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Gossypol acetic acid ((±)-Gossypol-acetic acid) binds to Bcl-xL protein and Bcl-2 protein with K_is of 0.5-0.6 μM and 0.2-0.3 mM, respectively.

IC_{50} & Target

Bcl-xL	Bcl-2
0.5-0.6 μM (Ki)	0.2-0.3 mM (Ki)

In Vitro

Gossypol, a natural product isolated from cottonseeds and roots that has been studied as an anticancer agent. The racemic form of Gossypol [(±)-Gossypol] is tested in several clinical trials and is well tolerated. The racemic form Gossypol ((±)-Gossypol) binds to Bcl-xL protein with a K_i of 0.5 to 0.6 μM. (±)-Gossypol also potently binds to Bcl-2 protein with a K_i value of 0.2-0.3 mM. The natural racemic Gossypol has two enantiomers, namely the (-)-Gossypol and (+)-Gossypol enantiomers. The racemic form and each of the enantiomers of Gossypol are tested against UM-SCC-6 and UM-SCC-14A in 6-day MTT assays. (-)-Gossypol exhibits greater growth inhibition relative to (±)-Gossypol than (+)-Gossypol in both cell lines tested (P<0.001). An intermediate growth inhibitory effect is observed with (±)-Gossypol but this effect is only observed at the higher dose of

Gossypol (10 μM, P<0.0001)[1].

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

PROTOCOL

Cell Assay [1]

Two representative UM-SCC cell lines, UM-SCC-6 and UM-SCC-14A, are continuously exposed to 0 (vehicle control), 5 or 10 μM (±)-Gossypol, (-)-Gossypol or (+)-Gossypol in a 6-day MTT cell survival assay[1].

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

CUSTOMER VALIDATION

- Clin Transl Med. 2021 Jun;11(6):e467.
- Patent. US20220162561A1.

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REFERENCES

[1]. Oliver CL, et al. In vitro effects of the BH3 mimetic, (-)-Gossypol, on head and neck squamous cell carcinoma cells. Clin Cancer Res. 2004 Nov 15;10(22):7757-63.

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