Fangchinoline

Cat. No.: HY-N1372A

CAS No.: 436-77-1

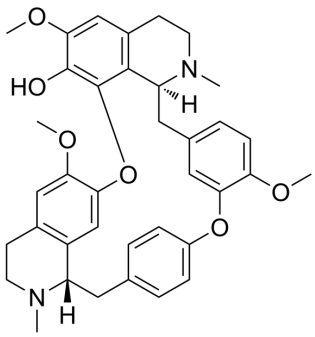
Molecular Formula: $C_{37}H_{40}N_2O_6$

Molecular Weight: 608.72

Target: HIV; FAK; Apoptosis; Autophagy

Pathway: Anti-infection; Protein Tyrosine Kinase/RTK; Apoptosis; Autophagy

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (82.14 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.6428 mL	8.2140 mL	16.4279 mL
	5 mM	0.3286 mL	1.6428 mL	3.2856 mL
	10 mM	0.1643 mL	0.8214 mL	1.6428 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 (3.42 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.42 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Fangchinoline is isolated from Stephania tetrandra with extensive biological activities, such as enhancing immunity, anti-inflammatory sterilization and anti-atherosclerosis. Fangchinoline, a novel HIV-1 inhibitor, inhibits HIV-1 replication by impairing gp160 proteolytic processing[1]. Fangchinoline targets Focal adhesion kinase (FAK) and suppresses FAK-mediated signaling pathway in tumor cells which highly expressed FAK[2]. Fangchinoline induces apoptosis and adaptive autophagy in bladder cancer[3].

IC_{50} & Target

HIV-1

In Vitro

Fangchinoline (2.5-40 μM; 24-96 hours) inhibits both T24 and 5637 cells in dose-dependent manner, the IC_{50} values of Fangchinoline in T24 cells are 19.0 μM (24 h), 12.0 μM (48 h) and 7.57 μM (72 h), and 11.9 μM (24 h), 9.92 μM (48 h) and 7.13 μM (72 h) in 5637 cells[1].

Fangchinoline (5 μM; 24 hours) induces a significant increase in the LC3-II/LC3-I ratio and a decrease in p62 in both T24 and 5637 cells, and causes a significant increase in the cleavage of caspase-3[1].

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

Cell Viability Assay[3]

Cell Line:	T24 and 5637 cells
Concentration:	2.5 μM; 5 μM; 10 μM; 20 μM; 30 μM; 40 μM
Incubation Time:	24 hours; 48 hours; 96 hours
Result:	Inhibited both T24 and 5637 cells proliferation.

Western Blot Analysis[3]

Cell Line:	T24 and 5637 cells
Concentration:	5 μM
Incubation Time:	24 hours
Result:	Incresed LC3-II/LC3-I ratio and the cleavage of caspase-3.

CUSTOMER VALIDATION

- Cancer Lett. 2022 Sep 1;543:215783.
- J Adv Res. 2022.
- Front Oncol. 2021 Jun 14;11:666549.
- SSRN. 2023 Feb 14.

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REFERENCES

[1]. Wan Z, et al. Fangchinoline inhibits human immunodeficiency virus type 1 replication by interfering with gp160 proteolytic processing. PLoS One. 2012;7(6):e39225.

[2]. Guo B, et al. Fangchinoline as a kinase inhibitor targets FAK and suppresses FAK-mediated signaling pathway in A549. J Drug Target. 2015 Apr;23(3):266-74.

[3]. Fan B, et al. Fangchinoline Induces Apoptosis, Autophagy and Energetic Impairment in Bladder Cancer. Cell Physiol Biochem. 2017;43(3):1003-1011.

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

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