Scoulerine

Cat. No.: HY-N1255

CAS No.: 6451-73-6

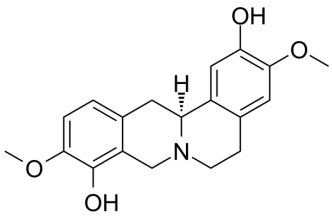
Molecular Formula: $C_{19}H_{21}NO_4$

Molecular Weight: 327.37

Target: Beta-secretase; Apoptosis; Microtubule/Tubulin

Pathway: Neuronal Signaling; Apoptosis; Cell Cycle/DNA Damage; Cytoskeleton

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (305.46 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.0546 mL	15.2732 mL	30.5465 mL
	5 mM	0.6109 mL	3.0546 mL	6.1093 mL
	10 mM	0.3055 mL	1.5273 mL	3.0546 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 (6.35 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.35 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Scoulerine ((-)-Scoulerine), an isoquinoline alkaloid, is a potent antimitotic compound. Scoulerine is also an inhibitor of BACE1 (ß-site amyloid precursor protein cleaving enzyme 1). Scoulerine inhibits proliferation, arrests cell cycle, and induces apoptosis in cancer cells[1].

In Vitro

Scoulerine ((-)-Scoulerine) inhibits mini-panel of human leukemic cells, MOLT-4 (WT), Jurkat (TP53 mutated), Raji (TP53 mutated), HL-60 (TP53 null), U-937 (TP53 mutated), and HEL 92.1.7 (wild-type), with IC_{50}s ranging from 2.7 μM to 6.5 μM[1].
Scoulerine (2.5-20 μM; 24 hours) decreases proliferation of Jurkat and MOLT-4 cells[1].
Scoulerine (2.5-20 μM; 24 hours) induces MOLT-4 and Jurkat cells apoptosis[1].
Scoulerine induces G2 or M cell cycle arrest[1].
Scoulerine (2.5-5 μM; 24 hours) shows an upregulation of p53 protein in p53 wild-type MOLT-4 cells[1].
Scoulerine (2.5-5 μM; 24-48 hours) activates caspase-3/7, -8 and -9 in a dose-dependent manner[1].

Scoulerine (5-10 μM; 24 hours) disrupts microtubule structure of A549 lung carcinoma cells[1]

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

Cell Proliferation Assay[1]

Cell Line:	Jurkat and MOLT-4 cells
Concentration:	2.5, 5, 10, 15 and 20 μM
Incubation Time:	24 hours
Result:	Significantly reduced the viability and proliferation of Jurkat and MOLT-4 cells in a dose dependent manner.

Apoptosis Analysis[1]

Cell Line:	MOLT-4 and Jurkat cells
Concentration:	2.5, 5, 10, 15 and 20 μM
Incubation Time:	24 hours
Result:	Induced MOLT-4 and Jurkat cells apoptosis.

Cell Cycle Analysis[1]

Cell Line:	Jurkat and MOLT-4 leukemic cells
Concentration:	2.5-20 μM
Incubation Time:	16 hours
Result:	Induced cell cycle arrest at the G2/M transition.

Western Blot Analysis[1]

Cell Line:	MOLT-4 cells
Concentration:	2.5, 5 μM
Incubation Time:	24 hours
Result:	Showed an upregulation of p53 protein in p53 wild-type MOLT-4 cells.

REFERENCES

[1]. Habartova K, et al. Scoulerine affects microtubule structure, inhibits proliferation, arrests cell cycle and thus culminates in the apoptotic death of cancer cells. Sci Rep. 2018;8(1):4829. Published 2018 Mar 19.

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

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