MY-875

Cat. No.: HY-150761

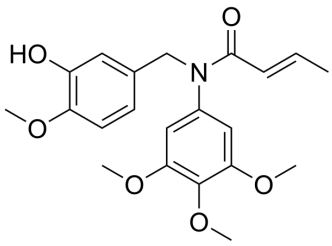
Molecular Formula: $C_{21}H_{25}NO_6$

Molecular Weight: 387.43

Target: Microtubule/Tubulin; Apoptosis

Pathway: Cell Cycle/DNA Damage; Cytoskeleton; Apoptosis

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 250 mg/mL (645.28 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5811 mL	12.9056 mL	25.8111 mL
	5 mM	0.5162 mL	2.5811 mL	5.1622 mL
	10 mM	0.2581 mL	1.2906 mL	2.5811 mL

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

BIOLOGICAL ACTIVITY

Description

MY-875 is a competitive microtubulin polymerization inhibitor with an IC_{50} value of 0.92 μM. MY-875 inhibits microtubulin polymerization by targeting colchicine binding sites and activates the Hippo pathway. MY-875 induces apoptosis and has anticancer activity[1].

In Vitro

MY-875 (0-80 μM, 48 h) has significant anti-proliferative activity against cancer cells[1].
MY-875 (1-10 μM) can inhibit microtubule protein polymerization with an IC_{50} value of 0.92 μM while inhibiting alkylation of β-tubulin and the formation of EBI-β-tubulin adduct bands in a dose-dependent manner[1].
MY-875 (0-45 nM, 48 h) can induce the phosphorylation state of MST (Ste20-like kinases) and LATS (large tumor suppressor kinases), leading to YAP (Yes-associated protein) degradation in a dose-dependent manner[1].
MY-875 (0-45 nM, 24 h) significantly inhibits cell colony-forming ability, arrests cells in the G2/M phase and induces cell apoptosis in a dose-dependent manner[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

Cell Line:	MGC-803, HCT-116, KYSE450, HGC-27, SGC-7901cell lines

Concentration:	0-80 μM
Incubation Time:	48 hours
Result:	Inhibited the proliferation of MGC-803, HCT-116, KYSE450, HGC-27 and SGC-7901 cells with the IC_{50} values of 0.027, 0.055, 0.067, 0.033 and 0.025 μM, respectively. Showed strong inhibitory effect on other tumor cell lines with the IC_{50} values less than 0.1 μM, such as DU145, A549, MCF-7, etc.
Cell Cycle Analysis[1]	
Cell Line:	MGC-803, SGC-7901 cell lines
Concentration:	0-45 nM
Incubation Time:	24 hours
Result:	Increased the percentage of cells in G2/M phase from 19.38% to 76.97% in MGC-803 cells and from 7.04% to 80.89% in SGC-7901 cells, respectively at 45 nM.
Apoptosis Analysis[1]	
Cell Line:	MGC-803, SGC-7901 cell lines
Concentration:	0-45 nM
Incubation Time:	48 hours
Result:	Induced apoptotic cells from 21.96% to 76.08% in MGC-803 cells and from 9.28% to 63.51% in SGC-7901 cells, respectively at 45 nM. Reduced expression of anti-apoptotic proteins c-IAP1, Bcl-xL and Mcl-1.

REFERENCES

[1]. Jian Song, et al. Discovery of N-benzylarylamide derivatives as novel tubulin polymerization inhibitors capable of activating the Hippo pathway. Eur J Med Chem. 2022 Jul 7;240:114583.

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