MIM1

Cat. No.: HY-16695

CAS No.: 509102-00-5

Molecular Formula: $C_{17}H_{21}N_3O_3S$

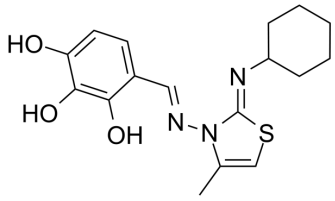
Molecular Weight: 347.43

Target: Bcl-2 Family

Pathway: 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 : 50 mg/mL (143.91 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.8783 mL	14.3914 mL	28.7828 mL
	5 mM	0.5757 mL	2.8783 mL	5.7566 mL
	10 mM	0.2878 mL	1.4391 mL	2.8783 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 (5.99 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.99 mM); Suspended solution

BIOLOGICAL ACTIVITY

Description

MIM-1 is an inhibitor of myeloid cell factor 1 (Mcl-1).

IC_{50} & Target

Mcl-1

In Vitro

MIM-1 selectively targets the BH3 binding groove of Mcl-1, with Bak-dependent apoptotic activity. To estimate the sensitivity of HA and T98G cells to the apoptosis inhibitor MIM-1, the colorimetric MTT assay is used to detect cell viability and to determine the IC_{50} value. The IC_{50} value of the HA cell line is almost 5-fold lower (16.10 μM) compared with the IC_{50} of the T98G cell line (80.20 μM) after MIM-1 inhibitor treatment.

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

PROTOCOL

Cell Assay [1]

The IC_{50} value, defined as the concentration that reduces the global growth of cells by 50%, is determined for the apoptosis inhibitors ABT-737 and MIM-1, individually, for the human astrocyte (HA) and human GB (T98G) cell lines. The apoptosis inhibitor concentrations and treatment time periods are selected experimentally according to preliminary experiments. The final ABT-737 treatment is performed with 10-fold increasing concentrations in the range of 0.001-100 μM, and the final MIM-1 treatment is performed with 4-fold increasing concentrations in the range of 0.4-400 μM, for 48 h. The biochemical colorimetric MTT assay, based on the enzymatic conversion of MTT to a violet formazan salt, is used to assess the viability of the HA and T98G cells. Briefly, the cells in culture medium are seeded (3.5×10^3 cells/well for the HA cell line, 3.0×10^3 cells/well for T98G cell line) in 96-well microtiter plates. On the third day, the medium is changed to culture medium supplemented with the apoptosis inhibitor ABT-737 or MIM-1 at varied concentrations and incubation continued for another two days. After the treatment with the apoptosis inhibitors, cells are rinsed once with Dulbeccos phosphate buffer saline (DPBS) and further incubated in medium supplemented with 0.5 mg/mL MTT in a humidified atmosphere for 6 h. During a subsequent incubation for 16 h in medium containing SDS [5% (w/v)], the precipitated formazan, the amount of which is proportional to the number of live cells, is solubilized. The absorbance of the formazan-containing solution is measured at 540 nm using an ELISA plate reader. The absorbance is also determined for the medium of the control cells not exposed to the apoptosis inhibitors. The percentage of cell viability is calculated relative to the untreated control cells. The IC_{50} values are determined for both human brain cell lines after individual apoptosis inhibitor treatment.

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

REFERENCES

[1]. Vidomanova E, et al. Microfluidic profiling of apoptosis-related genes after treatment with BH3-mimetic agents in astrocyte and glioblastoma cell lines. Oncol Rep. 2016 Dec;36(6):3188-3196.

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