Verteporfin

Cat. No.: HY-B0146

CAS No.: 129497-78-5

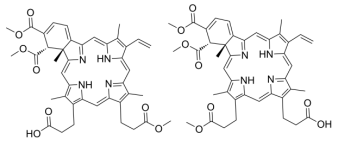
Molecular Formula: $C_{41}H_{42}N_4O_8$

Molecular Weight: 718.79

Target: YAP; Autophagy; Apoptosis

Pathway: Stem Cell/Wnt; Autophagy; 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 (69.56 mM; Need ultrasonic)
DMF : 10 mg/mL (13.91 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.3912 mL	6.9561 mL	13.9123 mL
5 mM	0.2782 mL	1.3912 mL	2.7825 mL
10 mM	0.1391 mL	0.6956 mL	1.3912 mL

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

In Vivo

1. Add each solvent one by one: 15% Cremophor EL >> 85% Saline
   Solubility: 10 mg/mL (13.91 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 5 mg/mL (6.96 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 5 mg/mL (6.96 mM); Clear solution
4. Add each solvent one by one: 50% PEG300 >> 50% saline
   Solubility: 1 mg/mL (1.39 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Verteporfin (CL 318952) is a photosensitizer for photodynamic therapy to eliminate the abnormal blood vessels in the eye associated with conditions such as age-related macular degeneration. Verteporfin is a YAP inhibitor which disrupts YAP-TEAD interactions. Verteporfin induces cell apoptosis[1]. Verteporfinis an autophagy inhibitor that blocks autophagy at an early stage by inhibiting autophagosome formation[3].

IC_{50} & Target

IC50: YAP-TEAD interaction

In Vitro	Verteporfin is specifically selected by PDX-cell screening. The concentrations to cause 50% growth inhibition (GI_{50}) for PhLO, PhLH, and PhLK are 228 nM, 395 nM, and 538 nM, respectively, whereas GI_{50} for ALL-1, TCC-Y/sr, and NPhA1 are 3.93 μM, 2.11 μM, and 5.61 μM, respectively. GSH significantly reduces the sensitivity of 2 out of 3 PDX cells to verteporfin. Verteporfin reduces the mitochondrial membrane potential in PDX cells[1]. Verteporfin reduces the PTX-resistance on HCT-8/T cells by inhibiting YAP expression and combination therapy with verteporfin and NSC 125973 shows synergism on inhibition of YAP and cytotoxicity to HCT-8/T[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Verteporfin (10 mg/kg, c.s.c.) and BMS-354825 significantly reduces the leukemia cell ratio, and combined therapy further reduced the number of leukemia cells in the spleen[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	PDX cells co-cultured with S17 cells are treated with 16 combinations of verteporfin (60 nM, 120 nM, 180 nM, and 240 nM) and BMS-354825 (12 nM, 24 nM, 36 nM, and 48 nM). The viabilities of cells treated with each combination are measured after 48 h using FACS Aria flow cytometer. In order to estimate drug interaction between verteporfin and BMS-354825, a normalized isobologram and fraction affectedcombination index (CI) plot are made using CompuSyn software. CI values greater than 1.0 indicated antagonistic effects, equal to 1.0 additive effects, and below 1.0 synergistic effects. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice: PhLO cells (1.0×10^7/mouse) are injected intravenously into 6-week-old male NOG mice, which are then treated with vehicle, verteporfin (140 mg/kg/day), BMS-354825 (20 mg/kg/day), and a combination of these drugs from days 22 to 28. Verteporfin is administered by continuous subcutaneous infusion (c.s.c.) using Alzet osmotic pumps. An intraperitoneal injection (i.p.) is performed for BMS-354825. All mice are sacrificed on day 28 and the chimerism of leukemia cells is investigated by flow cytometer using an anti-human CD19 antibody and antimouse CD45 antibody. Blood concentrations of verteporfin are calculated by LCMS-2020. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cancer Cell. 2019 Sep 16;36(3):302-318.e7.
- Cell Res. 2022 Jun;32(6):543-554.
- Cell Res. 2020 Mar;30(3):229-243.
- Cancer Discov. 2024 Aug 13.
- Nat Biomed Eng. 2024 Oct 30.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Morishita T, et al. The photosensitizer verteporfin has light-independent anti-leukemic activity for Ph-positive acute lymphoblastic leukemia and synergistically works with BMS-354825. Oncotarget. 2016 Aug 2.

[2]. Pan W, et al. Verteporfin can Reverse the NSC 125973 Resistance Induced by YAP Over-Expression in HCT-8/T Cells without Photoactivation through Inhibiting YAP Expression. Cell Physiol Biochem. 2016;39(2):481-90.

[3]. Donohue E, et al. The autophagy inhibitor verteporfin moderately enhances the antitumor activity of gemcitabine in a pancreatic ductal adenocarcinoma model.J Cancer. 2013 Aug 28;4(7):585-96.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA