Etoposide phosphate

Cat. No.: HY-13630

CAS No.: 117091-64-2

Molecular Formula: $C_{29}H_{33}O_{16}P$

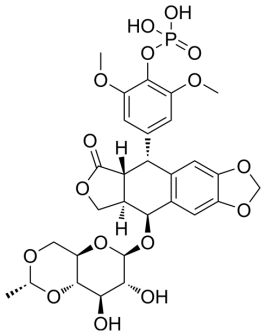
Molecular Weight: 668.54

Target: Topoisomerase; Autophagy; Apoptosis; Bacterial

Pathway: Cell Cycle/DNA Damage; Autophagy; Apoptosis; Anti-infection

Storage:

Powder	-20°C	3 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (149.58 mM; ultrasonic and warming and heat to 80°C)

H_2O : 100 mg/mL (149.58 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.4958 mL	7.4790 mL	14.9580 mL
	5 mM	0.2992 mL	1.4958 mL	2.9916 mL
	10 mM	0.1496 mL	0.7479 mL	1.4958 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (149.58 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Etoposide phosphate (BMY-40481) is a potent anti-cancer chemotherapy agent and a selective topoisomerase II inhibitor to prevent re-ligation of DNA strands. Etoposide phosphate is the phosphate ester proagent of etoposide and is considered as active equivalent to Etoposide. Etoposide phosphate induces cell cycle arrest, apoptosis, and autophagy.

IC_{50} & Target

Topoisomerase II

In Vitro

Etoposide phosphate is a water-soluble derivative and probable prodrug of etoposide characterized by the presence of a phosphate group in position 4' of the E ring of the etoposide molecule[1].

Etoposide phosphate (0-1 μM; 72 hours) inhibits HCT116 $FBXW^{+/+}$, $FBXW^{-/-}$ and $p53^{-/-}$ as a dose-dependent manner, exhibits IC_{50} values of 0.945 μM; 0.375 μM; and 1.437 μM, respectively[2].

Etoposide phosphate (25 μM; 6 hours) delays p53 recover in FBXW7-deficient cells. In addition, FBXW7 expression is disappeared in $FBXW7^{-/-}$ cells[2].

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

Cell Viability Assay[2]

Cell Line:	FBXW$^{+/+}$, FBXW$^{-/-}$ and p53$^{-/-}$ cell
Concentration:	0.025 μM, 0.05 μM, 0.075 μM, 0.1 μM, 0.2 μM, 0.4 μM, 0.6 μM, 0.8 μM, 1 μM
Incubation Time:	72 hours
Result:	Inhibited HCT116 FBXW$^{+/+}$, FBXW$^{-/-}$ and p53$^{-/-}$ cell growth as a concentration manner.

Western Blot Analysis[2]

Cell Line:	HCT116 FBXW7$^{+/+}$ or FBXW7$^{-/-}$ cells
Concentration:	25 μM
Incubation Time:	6 hours
Result:	Exhibited that the recovery of p53 levels after DNA damage is mediated by FBXW7.

In Vivo

Etoposide phosphate (intravenous injection; 50, 100, or 150 mg/kg; single dose) has clinical symptomology of progressive ataxia, impaired righting reflex, and splaying and paresis of fore- and hindlimbs at day 8 in female CD-1 mice[3].

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Animal Model:	Female CD-1 mice[3]
Dosage:	50, 100, or 150 mg/kg
Administration:	Intravenous injection; single dose
Result:	Observed degeneration of dorsal root ganglion cells and axonal degeneration of their distal and proximal processes in peripheral nerves, dorsal spinal roots, and dorsal funiculi of the spinal cord at all doses under light microscopy (LM).

CUSTOMER VALIDATION

- Immunity. 2022 Aug 9;55(8):1370-1385.e8.
- Cell Host Microbe. 2023 Nov 8;31(11):1820-1836.e10.
- Protein Cell. 2022 Jan;13(1):47-64.
- Nat Commun. 2023 Sep 19;14(1):5709.
- J Extracell Vesicles. 2022 Apr;11(4):e12206.

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REFERENCES

[1]. Witterland AH, et al. Etoposide phosphate, the water soluble prodrug of etoposide. Pharm World Sci. 1996 Oct;18(5):163-70.

[2]. Bregman CL, et al. Etoposide- and BMY-40481-induced sensory neuropathy in mice.Toxicol Pathol. 1994 Sep-Oct;22(5):528-35.

[3]. Cui D, et al. FBXW7 Confers Radiation Survival by Targeting p53 for Degradation.Cell Rep. 2020 Jan 14;30(2):497-509.e4.

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