# Etoposide phosphate disodium

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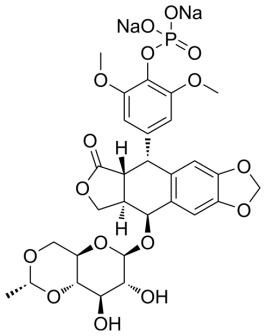
| **Cat. No.:** | HY-13630A |
| **CAS No.:** | 122405-33-8 |
| **Molecular Formula:** | $C_{29}H_{31}Na_2O_{16}P$ |
| **Molecular Weight:** | 712.5 |
| **Target:** | Topoisomerase; Autophagy; Apoptosis |
| **Pathway:** | Cell Cycle/DNA Damage; Autophagy; Apoptosis |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |



## BIOLOGICAL ACTIVITY

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| **Description** | Etoposide phosphate disodium (BMY-40481 disodium) is a potent anti-cancer chemotherapy agent and a selective topoisomerase II inhibitor to prevent re-ligation of DNA strands. Etoposide phosphate disodium is the phosphate ester proagent of etoposide and is considered as active equivalent to Etoposide. Etoposide phosphate disodium induces cell cycle arrest, apoptosis, and autophagy. |
| **$IC_{50}$ & Target** | Topoisomerase II |

**In Vitro**

Etoposide phosphate disodium 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 disodium (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 disodium (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]

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| 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]

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| 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). |

## REFERENCES


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

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

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

[4]. SUMMARY OF PRODUCT CHARACTERISTICS





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