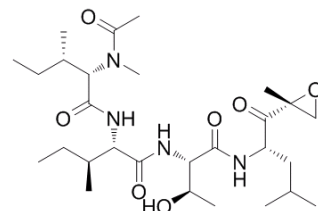


Data Sheet

Product Name:	Epoxomicin
Cat. No.:	HY-13821
CAS No.:	134381-21-8
Molecular Formula:	C ₂₈ H ₅₀ N ₄ O ₇
Molecular Weight:	554.72
Target:	Proteasome
Pathway:	Metabolic Enzyme/Protease
Solubility:	10 mM in DMSO



BIOLOGICAL ACTIVITY:

Epoxomicin(BU-4061T) is a potent anti-tumor agent isolated from Actinomycetes that is used as a selective and irreversible inhibitor of the 20S proteasome.

IC50 value:

Target: 20S proteasome

in vitro: Epoxomicin inhibits proteasome activity in cell growth assays with an IC50 value of 4 nM and demonstrates potent cytotoxicity against B16-F10, HCT116, and Moser solid tumor cells, as well as P388 and K562 leukemia cells with IC50 values ranging from 2–44 nM [1] [2]. By inhibiting osteoblast proteasome activity, epoxomicin stimulates bone formation at concentrations as low as 10 nM [3].

in vivo: Intraperitoneal injection of 1.5 mg/kg epoxomicin given daily for two weeks induces Parkinson's-like symptoms in rats and addition of 100 nM epoxomicin to rat ventral midbrain cultures results in apoptosis specific to dopaminergic neurons [4].

PROTOCOL (Extracted from published papers and Only for reference)

Cell assay [5] Application of proteasomal inhibitors On day 4 in vitro, the highly selective inhibitors of the 26S proteasome lactacystin or Epoxomicin were added to the cultures. Epoxomicin was prepared in DMSO at a stock concentration of 1 mM and diluted in the culture medium for the final concentration. Where indicated, the proteasome inhibitor was added together with the Cdk inhibitor flavopiridol (1 μM), the caspase inhibitor Boc-aspartyl (OMe)-fluoromethylketone (BAF, 100 μM) or the inhibitor of transcription actinomycin D (10 μM).

References:

- [1]. Kim KB, et al. Proteasome inhibition by the natural products epoxomicin and dihydroeponemycin: insights into specificity and potency. *Bioorg Med Chem Lett*. 1999 Dec 6;9(23):3335–40.
- [2]. Hanada M, et al. Epoxomicin, a new antitumor agent of microbial origin. *J Antibiot (Tokyo)*. 1992 Nov;45(11):1746–52.
- [3]. Garrett IR, et al. Selective inhibitors of the osteoblast proteasome stimulate bone formation in vivo and in vitro. *J Clin Invest*. 2003 Jun;111(11):1771–82.
- [4]. McNaught KS, et al. Systemic exposure to proteasome inhibitors causes a progressive model of Parkinson's disease. *Ann Neurol*. 2004 Jul;56(1):149–62.
- [5]. Rideout HJ, et al. Dopaminergic neurons in rat ventral midbrain cultures undergo selective apoptosis and form inclusions, but do not up-regulate iHSP70, following proteasomal inhibition. *J Neurochem*. 2005 Jun;93(5):1304–13.

Caution: Product has not been fully validated for medical applications. For research use only.

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