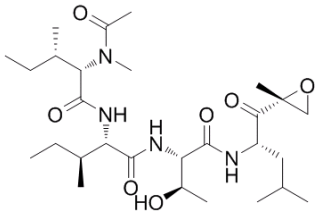
Data Sheet

Product Name:	Epoxomicin
Cat. No.:	HY-13821
CAS No.:	134381-21-8
Molecular Formula:	$C_{28}H_{50}N_4O_7$
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 (1μM), 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.

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