Revision 3

Store at -20C

#12986

Epothilone B

Cell Signaling TECHNOLOGY®

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Background

Epothilone A and B are taxol-like macrolides originally identified as antifungal, cytotoxic metabolites derived from the myxobacterium *Sorangium cellulosum*. Research studies demonstrate that epothilone B polymerizes tubulin into microtubules *in vitro*, which induces mitotic arrest at the G2/M phase and results in inhibition of cell proliferation and cytotoxicity (1-3). Cell cycle arrest at nanomolar IC_{50} values have been observed in many cell types, including HeLa (IC_{50} = 32 nM), Hs578T (IC_{50} = 3 nM) (3), as well as the multiple myeloma cell lines U266 and RPMI 8226 (IC_{50} = ~1-10 nM) (4). Investigations have shown that both epothilone A and B competitively inhibit binding of taxol to microtubules *in vitro* (3).

Molecular Formula

$C_{27}H_{41}NO_6S$

Molecular Weight

507.68 g/mol

Purity

>99%

CAS

152044-54-7

Solubility

Soluble in DMSO and EtOH at 40mg/ml.

Storage

Store lyophilized or in solution at -20ºC, desiccated. Protect from light. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

Directions for Use

Epothilone B is supplied as a lyophilized powder. For a 1 mM stock, reconstitute the 100 µg in 197 µl DMSO. Working concentrations and length of treatment can vary depending on the desired effect, but it is typically used at 10-1000 nM for 12-48 hr.

Background References

1. Gerth, K. et al. (1996) *J Antibiot (Tokyo)* 49, 560-3.
2. Goodin, S. et al. (2004) *J Clin Oncol* 22, 2015-25.
3. Bollag, D.M. et al. (1995) *Cancer Res* 55, 2325-33.
4. Lin, B. et al. (2005) *Blood* 105, 350-7.

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