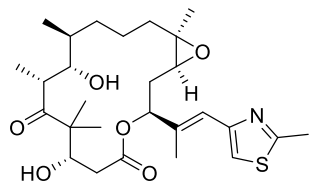
Product data sheet

MedKoo Cat#: 202160 Name: Patupilone (Epothilone B) CAS#: 152044-54-7 Chemical Formula: $C_{27}H_{41}NO_6S$ Exact Mass: 507.26546 Molecular Weight: 507.68	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Patupilone, also known as Epothilone B and EPO-906, is a compound isolated from the myxobacterium Sorangium cellulosum. Similar to paclitaxel, epothilone B induces microtubule polymerization and stabilizes microtubules against depolymerization conditions. In addition to promoting tubulin polymerization and stabilization of microtubules, this agent is cytotoxic for cells overexpressing P-glycoprotein, a characteristic that distinguishes it from the taxanes. Epothilone B may cause complete cell-cycle arrest.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	30.0	59.1

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.97 mL	9.85 mL	19.70 mL
5 mM	0.39 mL	1.97 mL	3.94 mL
10 mM	0.20 mL	0.98 mL	1.97 mL
50 mM	0.04 mL	0.20 mL	0.39 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Furmanova-Hollenstein P, Broggini-Tenzer A, Eggel M, Millard AL, Pruschy M. The microtubule stabilizer patupilone counteracts ionizing radiation-induced matrix metalloproteinase activity and tumor cell invasion. Radiat Oncol. 2013 Apr 30;8:105. doi: 10.1186/1748-717X-8-105. PMID: 23631818; PMCID: PMC3661365.
2. Carrara L, Guzzo F, Roque DM, Bellone S, Emiliano C, Sartori E, Pecorelli S, Schwartz PE, Rutherford TJ, Santin AD. Differential in vitro sensitivity to patupilone versus paclitaxel in uterine and ovarian carcinosarcoma cell lines is linked to tubulin-beta-III expression. Gynecol Oncol. 2012 Apr;125(1):231-6. doi: 10.1016/j.ygyno.2011.12.446. Epub 2011 Dec 29. PMID: 22209775; PMCID: PMC3303974.

In vivo study

1. Ferretti S, Allegrini PR, O'Reilly T, Schnell C, Stumm M, Wartmann M, Wood J, McSheehy PM. Patupilone induced vascular disruption in orthotopic rodent tumor models detected by magnetic resonance imaging and interstitial fluid pressure. Clin Cancer Res. 2005 Nov 1;11(21):7773-84. doi: 10.1158/1078-0432.CCR-05-1165. PMID: 16278399.

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2. Hofstetter B, Vuong V, Broggini-Tenzer A, Bodis S, Ciernik IF, Fabbro D, Wartmann M, Folkers G, Pruschy M. Patupilone acts as radiosensitizing agent in multidrug-resistant cancer cells in vitro and in vivo. Clin Cancer Res. 2005 Feb 15;11(4):1588-96. doi: 10.1158/1078-0432.CCR-04-1800. PMID: 15746064.

7. Bioactivity

Biological target:

Epothilone B is a microtubule stabilizer with a Ki of 0.71μM.

In vitro activity

Treatment with 0.2 nM patupilone alone only minimally decreased the MMP activity level (0.95 fold, $p > 0.05$) in comparison to the basal MMP activity level in CM derived from untreated control cells. Interestingly, pretreatment of cells with 0.2 nM patupilone completely abolished the IR-induced increase of MMP activity after 2 Gy and counteracted the irradiation-induced increase of MMP activity by 40% after 10 Gy of IR ($p < 0.0001$) (Figure 1A). A direct inhibitory effect of patupilone on MMPs could be excluded by addition of the MSA to CM, which did not affect MMP-activity (data not shown).

Reference: Radiat Oncol. 2013; 8: 105. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3661365/

In vivo activity

A single dose of patupilone was strongly efficacious against the mammary BN472 tumor transplanted orthotopically in rats. One week after treatment, there was little or no tumor growth (T/C, 10.4%), mild diarrhea in some rats, and full survival (8 of 8), but there was significant body weight loss (−22 ± 2%). The overall exposure in these rats (mg/m2) was similar to the high dose given to B16/BL6 mice (i.e., 9 and 14 mg/m2 for rats and mice, respectively).

Reference: Radiat Oncol. 2013 Apr 30;8:105. https://clincancerres.aacrjournals.org/content/11/21/7773.long

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.