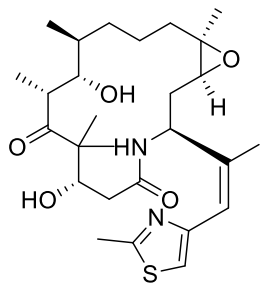
Product data sheet

MedKoo Cat#: 201610 Name: Ixabepilone CAS: 219989-84-1 Chemical Formula: $C_{27}H_{42}N_2O_5S$ Exact Mass: 506.2814 Molecular Weight: 506.702	
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:

Ixabepilone (also known as azaepothilone B, or BMS-247550) is an orally bioavailable microtubule inhibitor. Ixabepilone was a semisynthetic analogue of epothilone B with antineoplastic activity. Ixabepilone binds to tubulin and promotes tubulin polymerization and microtubule stabilization, thereby arresting cells in the G2-M phase of the cell cycle and inducing tumor cell apoptosis. This agent demonstrates antineoplastic activity against taxane-resistant cell lines. Ixabepilone was approved in 2007. Check for active clinical trials or closed clinical trials using this agent. (NCI Thesaurus) (last updated: 7/10/2015).

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
DMF	20.0	39.47
DMSO	49.44	97.58
Ethanol	33.5	66.11
Ethanol:PBS (pH 7.2) (1:1)	0.5	0.99

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	1.97 mL	9.87 mL	19.74 mL
5 mM	0.39 mL	1.97 mL	3.95 mL
10 mM	0.20 mL	0.99 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. Tam S, Al-Zubaidi Y, Rahman MK, Bourget K, Zhou F, Murray M. The ixabepilone and vandetanib combination shows synergistic activity in docetaxel-resistant MDA-MB-231 breast cancer cells. Pharmacol Rep. 2022 Oct;74(5):998-1010. doi: 10.1007/s43440-022-00396-7. Epub 2022 Jul 30. PMID: 35908023; PMCID: PMC9584993.
2. Tanei T, Choi DS, Rodriguez AA, Liang DH, Dobrolecki L, Ghosh M, Landis MD, Chang JC. Antitumor activity of Cetuximab in combination with Ixabepilone on triple negative breast cancer stem cells. Breast Cancer Res. 2016 Jan 12;18(1):6. doi: 10.1186/s13058-015-0662-4. PMID: 26757880; PMCID: PMC4711100.

In vivo study

1. Lee F, Jure-Kunkel MN, Salvati ME. Synergistic activity of ixabepilone plus other anticancer agents: preclinical and clinical evidence. Ther Adv Med Oncol. 2011 Jan;3(1):11-25. doi: 10.1177/1758834010386402. PMID: 21789152; PMCID: PMC3126033.

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7. Bioactivity

Biological target:

Ixabepilone (BMS-247550) is an orally bioavailable microtubule inhibitor, which binds to tubulin and promotes tubulin polymerization and microtubule stabilization, thereby arrests cells in the G2-M phase of the cell cycle and induces tumor cell apoptosis.

In vitro activity

Ixabepilone effectively decreased the viability of parental 231C cells in a concentration-dependent manner (Fig. 1A). Ixabepilone was also active in docetaxel-resistant TXT cells, although not to the same extent as in 231C cells (Fig. 1A).

Reference: Pharmacol Rep. 2022 Oct;74(5):998-1010. https://pubmed.ncbi.nlm.nih.gov/35908023/

In vivo activity

The antitumor efficacy of ixabepilone in combination with bevacizumab, an anti-angiogenic monoclonal antibody that inhibits vascular endothelial growth factor (VEGF), was evaluated in L2987 human lung carcinoma xenografts grown in nude mice [Lee et al. 2008b]. Administration of ixabepilone in combination with bevacizumab produced significantly greater antitumor activity than single-agent ixabepilone alone at its MTD ($p = 0.003$) or bevacizumab alone at its MTD ($p = 0.0008$).

Reference: Ther Adv Med Oncol. 2011 Jan;3(1):11-25. https://pubmed.ncbi.nlm.nih.gov/21789152/