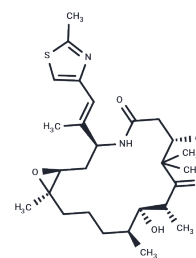


Ixabepilone

Chemical Properties

CAS No. :	219989-84-1
Formula:	C ₂₇ H ₄₂ N ₂ O ₅ S
Molecular Weight:	506.7
Storage:	Keep away from direct sunlight, Keep away from moisture Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



Biological Description

Description	Ixabepilone (Azaepothilone B) is an orally bioavailable microtubule inhibitor. It binds to tubulin and promotes tubulin polymerization and microtubule stabilization, thereby arresting cells in the G ₂ -M phase of the cell cycle and inducing tumor cell apoptosis.
Targets(IC50)	Apoptosis, Microtubule Associated, Antibacterial
In vitro	BMS-247550 is an extremely effective cytotoxic compound that eradicates cancer cells at low nanomolar concentrations. It also preserves its antineoplastic efficacy in human cancers that are either inherently resistant to paclitaxel or have acquired paclitaxel resistance[1].
In vivo	In vivo, BMS-247550 has clearly demonstrated antitumor activity that is superior to paclitaxel in both paclitaxel-resistant and -sensitive tumors. BMS-247550 is more efficacious compared to paclitaxel in all five paclitaxel-resistant tumors evaluated in this study (four human and one murine): i.e., the clinically derived paclitaxel resistant Pat-7 ovarian carcinoma, the A2780Tax ovarian carcinoma that is resistant to paclitaxel because of tubulin mutations, the HCT116/VM46 MDR colon carcinoma, the clinically derived paclitaxel-resistant Pat-21 breast carcinoma, and the murine fibrosarcoma M5076. Against three paclitaxel-sensitive human tumor xenografts, BMS-247550 produces antitumor activity equivalent to paclitaxel: i.e., A2780 human ovarian carcinoma, HCT116, and LS174T human colon carcinoma[1].
Kinase Assay	The potency with which BMS-247550 and paclitaxel polymerize tubulin isolated from calf brain is evaluated by Published techniques. Briefly, different concentrations of paclitaxel or BMS-247550 in polymerization buffer [0.1M mes, 1 mM EGTA, 0.5 mM MgCl ₂ (pH 6.6)] are added to tubulin in polymerization buffer at 37°C in microcuvette wells of a Beckman. Model DU 7400 UV spectrophotometer. A final microtubule protein concentration of 1.0 mg/mL and compound concentrations of generally 2.5, 5.0, and 10 μM are used. Initial slopes of absorbance (A ₂₈₀ nm) change, measured every 10 s, are calculated by the software program accompanying the instrument.
Cell Research	HCT116 cells from cultures are collected by trypsinization after 1, 2, 4, 8, 16, and 24 h exposure to 7.5 nM of BMS-247550. Cells are pelleted and fixed in 80% ethanol at -20°C. After an overnight storage at -20°C, cells are rehydrated with PBS buffer and DNA stain by incubation with propidium iodide (5 μg/ml) in 0.1% RNase for 15-30 min. Fluorescence-activated cell sorter acquisition is performed using the FACS Calibur

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Cell Research	instrument and analysis is done using Cellquest and Modfit software. (Only for Reference)
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Solubility Information

Solubility	Ethanol: 93 mg/mL (183.54 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 250 mg/mL (493.39 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (6.51 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.9736 mL	9.8678 mL	19.7355 mL
5 mM	0.3947 mL	1.9736 mL	3.9471 mL
10 mM	0.1974 mL	0.9868 mL	1.9736 mL
50 mM	0.0395 mL	0.1974 mL	0.3947 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Lee FY, et al. Clin Cancer Res. 2001, 7(5):1429-1437.

Wang M, Wang J, Tsui A Y P, et al. Mechanisms of peripheral neurotoxicity associated with four chemotherapy drugs using human induced pluripotent stem cell-derived peripheral neurons. Toxicology in Vitro. 2021: 105233.

Wang D, Wang Y, Di X, et al. Cortical tension drug screen links mitotic spindle integrity to Rho pathway. Current Biology. 2023

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