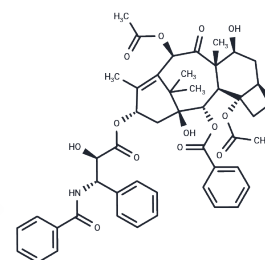


## Paclitaxel

### Chemical Properties

CAS No. :	33069-62-4
Formula:	C <sub>47</sub> H <sub>51</sub> NO <sub>14</sub>
Molecular Weight:	853.91
Appearance:	no data available
Storage:	keep away from direct sunlight,store at low temperature
	Powder: -20°C for 3 years   In solvent: -80°C for 1 year



### Biological Description

Description	Paclitaxel (Taxol) is a natural product and a microtubule polymer stabilizer. Paclitaxel has anti-tumor activity and causes cell death by inducing mitotic arrest, apoptosis, and cell autophagy.
Targets(IC50)	Apoptosis, Microtubule Associated, Autophagy, ADC Cytotoxin
In vitro	<p><b>METHODS:</b> Human T-cell lymphoblastic leukemia cells CCRF-HSB-2 were treated with Paclitaxel (0.01-1 <math>\mu</math>M) for 48 h. Cell growth inhibition was detected by MTT.</p> <p><b>RESULTS:</b> Paclitaxel dose-dependently inhibited the growth of CCRF-HSB-2 cells with an IC<sub>50</sub> of 0.25 <math>\mu</math>M.[1]</p> <p><b>METHODS:</b> Human gastric cancer cells AGS were treated with Paclitaxel (10-160 nM) for 24-48 h. The expression levels of target proteins were detected by Western Blot.</p> <p><b>RESULTS:</b> Paclitaxel induced the up-regulation of the expression of cleaved caspase-3 and cleaved PARP, which are apoptosis-related proteins. [2]</p> <p><b>METHODS:</b> Canine mammary tumor cells CHMm were treated with Paclitaxel (0.01-1 <math>\mu</math>M) for 24 h. Apoptosis was detected using Flow Cytometry.</p> <p><b>RESULTS:</b> Paclitaxel dose-dependently induced apoptosis in CHMm cells. [3]</p>
In vivo	<p><b>METHODS:</b> To investigate the effect of low-dose Paclitaxel on tumor invasion, Paclitaxel (2.6 mg/kg) was administered intraperitoneally to SCID mice bearing cholangiocarcinoma tumor EGI-1 once daily for two weeks.</p> <p><b>RESULTS:</b> Low-dose Paclitaxel treatment reduced the pulmonary spread of EGI-1 cells without significantly affecting their local tumor growth. [4]</p> <p><b>METHODS:</b> To develop a preclinical model of Paclitaxel alcohol-induced negative affective symptoms, Paclitaxel (2-8 mg/kg in 1 volume ethanol+1 volume Emulphor-620 +18 volumes distilled water) was injected intraperitoneally into C57BL/6J mice every four injections were given to C57BL/6J mice once every two days.</p> <p><b>RESULTS:</b> 8 mg/kg Paclitaxel treatment resulted in the development and maintenance of mechanical and cold abnormalities of pain. Paclitaxel also induced anxiety-like and depressive-like behaviors. Paclitaxel produced behavioral changes in the mouse affective state modeling assay, whereas the increase in injurious responses lasted longer. [5]</p>
Kinase Assay	To determine which caspases are involved in apoptosis induced by taxol, caspase-3 inhibitor (DEVD-CHO), caspase-6 inhibitor (Z-VEID-FMK), caspase-8 inhibitor (Z-IETD-FMK or IETD-CHO), caspase-9 inhibitors (Z-LEHD-FMK or LEHD-CHO), and caspase-10

	inhibitor (Z-AEVD-FMK) are used. These caspase inhibitors are dissolved in dimethyl sulfoxide (Me2SO); the final concentration of Me2SO is 0.1%. Cells (5×10 <sup>5</sup> ) are preincubated in the presence or absence of 100 µM each of these inhibitors for 3 h at 37°C then treated with or without 0.1, 0.5, and 1 µM Paclitaxel for 48 h and processed for annexin V binding assay [1].
Cell Research	1×10 <sup>4</sup> cells are plated in 100 µL of the growth medium in the presence or absence of increasing concentrations (0.1-1 µM) of taxol in 96-well plates and cultured at 37°C in 5% CO <sub>2</sub> for 12-48 h. The cells are then incubated with 25 µL of MTT (5 mg/mL) at 37°C for 4 h. After dissolving the crystals with 0.04 N HCl in isopropanol, the plates are read in a microplate reader at 570 nm [1].
Animal Research	Adult (250-320 g) male Sprague-Dawley rats are used for all experiments. One week following the Dil injection, rats are anesthetized with isofluorane and injected into the tail vein with 2 mg/kg paclitaxel or its vehicle (1:1:23, cremophor EL:ethanol:0.9% saline). The tail vein injection is repeated three more times every other day for a total of four injections [4].

## Solubility Information

Solubility	Ethanol: 21.4 mg/mL (25.06 mM), Sonication is recommended. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 8.54 mg/mL (10 mM), Suspension. DMSO: 41.66 mg/mL (48.79 mM), Heating is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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## Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.1711 mL	5.8554 mL	11.7108 mL
5 mM	0.2342 mL	1.1711 mL	2.3422 mL
10 mM	0.1171 mL	0.5855 mL	1.1711 mL
50 mM	0.0234 mL	0.1171 mL	0.2342 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.

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