Cabazitaxel

Cat. No.: HY-15459

CAS No.: 183133-96-2

Molecular Formula: $C_{45}H_{57}NO_{14}$

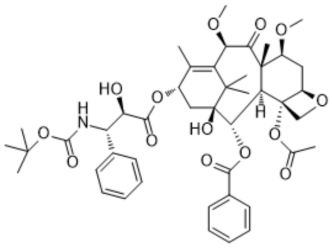
Molecular Weight: 835.93

Target: Microtubule/Tubulin; Autophagy

Pathway: Cell Cycle/DNA Damage; Cytoskeleton; Autophagy

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (119.63 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.1963 mL	5.9814 mL	11.9627 mL
	5 mM	0.2393 mL	1.1963 mL	2.3925 mL
	10 mM	0.1196 mL	0.5981 mL	1.1963 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (2.99 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (2.99 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (2.99 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Cabazitaxel is a semi-synthetic derivative of the natural taxoid 10-deacetylbaccatin III with potential antineoplastic activity.

In Vitro

The cytotoxicity of cabazitaxel (100 μg/mL) on 4T1 cells without irradiation is 70.8%. Cabazitaxel (100 μg/mL) exhibits a concentration-dependent antiproliferation effect, with the antiproliferative activity of 56.2%[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	Cabazitaxel (10 mg/kg, i.v.) has certain toxicity to liver and kidney but it can be avoided by integrated into Ans. The body weights of mice treated with AN-ICG-CBX and AN-CBX have a slightly decrease, while body weights of the free CBX group significantly decrease compared to the control group[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	The cytotoxicity of CBX-loaded ANs and free Cabazitaxel (CBX) is evaluated with MTT assay. Cells are seeded onto a 96-well plate at a density of 3000 cells per well and cultured for 24 h. CBX-loaded ANs and free CBX are diluted to predetermined concentrations with PBS and added into each well. Blank AN, AN-ICG and free CBX solvent (a mixture of Tween-80 and anhydrous alcohol) are added as well to different final concentrations. The incubation continued for another 48 hours. 20 μL MTT solutions (5 mg/mL in PBS) are added into each well and cells are incubated for another 4 hours under 37°C. Subsequently the medium is removed and 150 μL dimethyl sulphoxide (DMSO) is added to dissolve the purple formazan salt crystals. Then the absorbance is measured by a microplate reader at 490 nm. The cells treated with medium are evaluated as controls. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	To evaluate the antitumor efficiency of the combined chemotherapy and PTT in vivo, mice bearing 4T1 tumor are randomLy divided into 6 treatment groups (n=5). Treatment begin when the tumors reached 50 mm^3-100 mm^3. The mice are intravenously injected with saline, AN-ICG, free Cabazitaxel (CBX), AN-CBX and AN-ICG-CBX (ICG 2 mg/kg, CBX 10 mg/kg). 8 hours later, the groups injected with AN-ICG and AN-ICG-CBX is irradiated by the 808 nm laser (0.8 W/cm^2, 5 min). The length and width of every tumor are measured by a caliper every other day. The formula (volume (mm^3) =1/2 × length × $width^2$) is used to calculate the tumor volume. The body weights of these mice are recorded every two days using an electronic balance as well. At the end of the antitumor study, the 4T1 tumor bearing mice are sacrificed to collect the tumors and major organs. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Eur Urol. 2020 Nov 2;S0302-2838(20)30778-8.
- ACS Appl Nano Mater. 2019, 2, 10, 6249-6257.
- Nanomedicine (Lond). 2017 Sep;12(17):2083-2095.
- Pharmaceutics. 2023, 15(2), 662.
- Mol Pharm. 2022 Oct 21.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Tai X, et al. Cabazitaxel and indocyanine green co-delivery tumor-targeting nanoparticle for improved antitumor efficacy and minimized drug toxicity. J Drug Target. 2016 Sep 9:1-29.

[2]. Gdowski AS, et al. Bone-targeted cabazitaxel nanoparticles for metastatic prostate cancer skeletal lesions and pain. Nanomedicine (Lond). 2017 Sep;12(17):2083-2095.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA