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Lieferung & Zahlungsart

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Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
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Treosulfan

Cat. No.: HY-16503

CAS No.: 299-75-2

Molecular Formula: $C_6H_{14}O_8S_2$

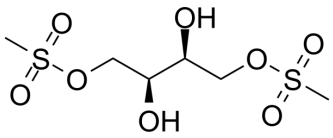
Molecular Weight: 278.3

Target: DNA Alkylator/Crosslinker

Pathway: Cell Cycle/DNA Damage

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (359.32 mM)

H_2O : 50 mg/mL (179.66 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.5932 mL	17.9662 mL	35.9324 mL
5 mM	0.7186 mL	3.5932 mL	7.1865 mL
10 mM	0.3593 mL	1.7966 mL	3.5932 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 16.67 mg/mL (59.90 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Treosulfan (NSC 39069) is a bifunctional alkylating agent with activity in ovarian cancer and other solid tumor types.

IC_{50} & Target

DNA Alkylator[1]

In Vitro	Treosulfan is an alkylating agent. Treosulfan inhibits several cancer cell lines, such as Panc-1, Miapaca-2 and Capan-2 cells, with IC_{50}s of 3.6 μg/mL, 1.8 μg/mL and 2.1 μg/mL respectively, and shows nearly 100% cytotoxicity on these cell lines at 100 μg/mL. Treosulfan (0.1-100 μg/mL) in combination with LY 188011 exhibits enhanced activity against cancer cells. However, Treosulfan (1, 2.5, 5 μg/ml) combined with 5-FU (0.1, 0.25, 0.5 μg/ml) has antagonistic effect on Panc-1 cells at intermediate and high concentrations, and on Miapaca-2 cells at all doses[1]. Treosulfan (800 μg/mL) dramatically reduces erythrocyte forward scatter, increases the percentage of annexin-V-binding cells, $[Ca^{2+}]_i$, and ROS. Removal of extracellular Ca^{2+} abrogates the effect of Treosulfan on annexin-V-binding[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Treosulfan (1.5 g/kg/day) induces a rapid myeloablation, depletes the splenic B and T cells in mice. Treosulfan (1.5 g/kg/day) causes olny interleukin-2 production in spleen cells for a short time and without obvious significant effect on synthesis of tumor necrosis factor-α and/or IFN-γ in mice[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	For cytotoxicity assays, the cells are plated at 1×10^4 cells/mL grown in 100 μL volume per well of 96-well tissue culture plates. The cells are left to adhere overnight and thereafter incubated with different concentrations of Treosulfan alone or in combination with LY 188011. The drug combination is added to the cell cultures simultaneously or sequentially (the second drug added 12 h after the first). After 72 h of incubation, Alamar Blue® solution is added to the wells prior to further overnight incubation. Absorbance is then measured on a spectrophotometer and cell proliferation and cytotoxicity of drugs are calculated. In some experiments, proliferation and cytotoxicity are also determined by using trypan blue exclusion and cell counting with an improved Neubauer hemocytometer and cell viability assessed by staining the cells with 7-amino-actinomycin D (final concentration 200 μg/mL) and Annexin-V and analyzing via flow cytometry using a FACS Scan flow cytometer[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [3]	Mice[3] Female BALB/c mice are 10 to 12 weeks old and weighed approximately 20 g. Animals are fed with standard pelleted food and water ad libitum. They are housed in a climatized chamber with a dark/light cycle of 12 hours. They are divided into four groups: one group is given Treosulfan (1.5 g/kg/day) for 3 consecutive days, one group receives NSC-26271 (0.1 g/kg/day) for 2 consecutive days, one group is treated with liposomal NCI C01592 (37 mg/kg/day) for 4 consecutive days, and there is a control group with no treatment. NSC-26271, NCI C01592, and Treosulfan doses are given at sublethal doses to maintain survival of the animals without bone marrow support. Animals are sacrificed on days 1, 3, 6, 9, and 12, after the last dose of treatment, and the spleen and femurs are removed. Six animals are included in each time point for the treated animals and two control animals[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Mol Med (Berl). 2019 Aug;97(8):1183-1193.

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REFERENCES

[1]. Nitsch E, et al. Synergistic cytotoxic activity of treosulfan and LY 188011 in pancreatic cancer cell lines. Anticancer Res. 2014 Apr;34(4):1779-84.

[2]. Peter T, et al. Programmed erythrocyte death following in vitro Treosulfan treatment. Cell Physiol Biochem. 2015;35(4):1372-80.

[3]. Sjöö F, et al. Myeloablative and immunosuppressive properties of treosulfan in mice. Exp Hematol. 2006 Jan;34(1):115-21.

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