# Thiostrepton

**Cat. No.:** HY-B0990

**CAS No.:** 1393-48-2

**Molecular Formula:** $C_{72}H_{85}N_{19}O_{18}S_5$

**Molecular Weight:** 1664.89

**Target:** Bacterial; Antibiotic

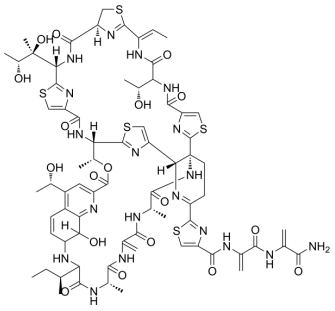
**Pathway:** Anti-infection

**Storage:** Sealed storage, away from moisture

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 125 mg/mL (75.08 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 0.6006 mL | 3.0032 mL | 6.0064 mL |
| | 5 mM | 0.1201 mL | 0.6006 mL | 1.2013 mL |
| | 10 mM | 0.0601 mL | 0.3003 mL | 0.6006 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: 5 mg/mL (3.00 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 5 mg/mL (3.00 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 4.17 mg/mL (2.50 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Thiostrepton is a thiazole antibiotic which selectively inhibits FOXM1. FOXM1 binds to YAP/TEAD complex. YAP/TEAD/FOXM1 complex binding at regulatory regions of genes governing cell cycle may impact cell proliferation[1].

**In Vitro**

Thiostrepton (0.01-1000 μM; 48 hours) suppresses cell viability in A2780 and HEC-1A[2].

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

Cell Viability Assay[2]

| | |
|---|---|
| Cell Line: | A2780 and HEC-1A cells |
| Concentration: | 0.01, 0.1, 1, 10, 100, 1000 μM |
| Incubation Time: | 48 hours |
| Result: | The $IC_{50}$s are 1.10 μM in A2780 and 2.22 μM in HEC-1A, respectively. |

**In Vivo**

Thiostrepton (i.p.; 17 mg/kg) reduces the tumorigenicity of Ewing's sarcoma (EWS) cells. Tumor volumes in control mice have increased ~6-fold from the initiation of treatment, while their Thiostrepton-treated counterparts increase only ~1.7-fold, exhibiting a ~3.5-fold reduction, relative to controls[3].

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

| | |
|---|---|
| Animal Model: | Athymic (BALB/c nu/nu) nude mice bearing A4573 cells[3] |
| Dosage: | 17 mg/kg |
| Administration: | Administered i.p. |
| Result: | Treatment inhibited the growth of EWS-derived tumors in vivo. |

## CUSTOMER VALIDATION

- Cell Death Dis. 2022 Jul 20;13(7):630.
- Environ Pollut. 2018 Aug 17;242(Pt B):1535-1545.
- Chemosphere. 2021 Jan;263:128295.
- Oncogene. 2018 Oct;37(41):5520-5533.
- Oncogene. 2018 Oct;37(41):5520-5533.

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## REFERENCES


[1]. Ajaybabu V Pobbati, et al. A combat with the YAP/TAZ-TEAD oncoproteins for cancer therapy. Theranostics. 2020 Feb 18;10(8):3622-3635.

[2]. Xuan Zhang, et al. Targeting of mutant p53-induced FoxM1 with Thiostrepton induces cytotoxicity and enhances carboplatin sensitivity in cancer cells. Oncotarget. 2014 Nov 30;5(22):11365-80.

[3]. Aniruddha Sengupta, et al. The dual inhibitory effect of Thiostrepton on FoxM1 and EWS/FLI1 provides a novel therapeutic option for Ewing's sarcoma. Int J Oncol. 2013 Sep;43(3):803-12.





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