Cytosporone B

Cat. No.: HY-N2148

CAS No.: 321661-62-5

Molecular Formula: $C_{18}H_{26}O_5$

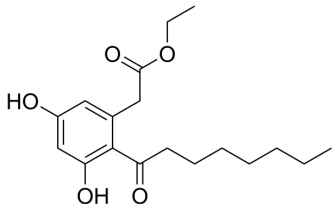
Molecular Weight: 322.4

Target: Nuclear Hormone Receptor 4A/NR4A

Pathway: Vitamin D Related/Nuclear Receptor

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (310.17 mM; ultrasonic and warming and heat to 60°C)
Ethanol : ≥ 50 mg/mL (155.09 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	3.1017 mL	15.5087 mL	31.0174 mL
5 mM	0.6203 mL	3.1017 mL	6.2035 mL
10 mM	0.3102 mL	1.5509 mL	3.1017 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 (7.75 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.75 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Cytosporone B (Csn-B; Dothiorelone G) is a naturally occurring nuclear orphan receptor Nur77/NR4A1 agonist with an EC_{50} of 0.278 nM.

IC_{50} & Target

Nur77/NR4A1

In Vitro

Cytosporone B targets the ligand binding domain of Nur77, which selectively stimulates the transactivational activity of Nur77. Cytosporone B induces luciferase activity in cells that are cotransfected with GAL4- Nur77 or GAL4-LBD. The EC_{50} of cytosporone B for Nur77 is 0.278 nM. Cytosporone B displays robust pro-apoptotic activity in gastric cancer cells BGC-823.

	63.5% of the cells are apoptotic when treated with cytosporone B for 48 h. Cytosporone B shows selective effect on cancerous cells. Cytosporone B inhibits proliferation of human gastric cancer BGC-823 cells and human colon cancer SW620 cells by 470%, but it has a modest effect on human lung cancer H1299 cells and human hepatoma HepG2 cells[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	In the hepatocytes of wild-type mice, the transcriptional activity of the reporter is induced five-fold with cytosporone B treatment. In wild-type mice, cytosporone B treatment significantly increases glucose levels from 3.2 to 11.4 mM within the first 30 min, and thereafter blood glucose gradually decreased before reaching the initial level after 300 min[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	Human gastric cancer BGC-823 cells and human colon cancer SW620 cells are treated with cytosporone B for 72 h at 0-15 μg/mL. Cell viability is measured using the MTT assay[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice: The inoculated mice are randomly separated into two groups. One group is given an injection to the abdominal cavity at a dosage of 13 mg/kg of cytosporone B twice a week. The other group is administered with DMSO without cytosporone B. Food consumption and body weight of nude mice are monitored weekly. Four weeks later, the nude mice are killed and the tumors formed are removed, fixed and embedded[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Clin Transl Med. 2021 Dec;11(12):e639.
- Cell Rep. 2020 Oct 20;33(3):108284.
- Pharm Biol. 2022 Dec;60(1):394-403.
- J Cardiovasc Transl Res. 2023 May 30.
- Chinese J Anal Chem. 17 September 202.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Zhan Y, et al. Cytosporone B is an agonist for nuclear orphan receptor Nur77. Nat Chem Biol. 2008 Sep;4(9):548-56.

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