Tetraethylammonium chloride

Cat. No.: HY-B1793

CAS No.: 56-34-8

Molecular Formula: $C_8H_{20}ClN$

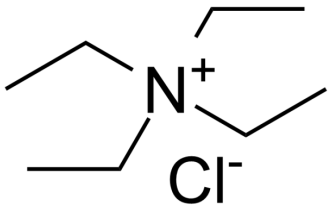
Molecular Weight: 165.7

Target: Potassium Channel

Pathway: Membrane Transporter/Ion Channel

Storage: 4°C, sealed storage, away from moisture

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 100 mg/mL (603.50 mM)

DMSO : 100 mg/mL (603.50 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Mass / Solvent / Concentration	1 mg	5 mg	10 mg
1 mM	6.0350 mL	30.1750 mL	60.3500 mL
5 mM	1.2070 mL	6.0350 mL	12.0700 mL
10 mM	0.6035 mL	3.0175 mL	6.0350 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (603.50 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 (15.09 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (15.09 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (15.09 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tetraethylammonium chloride is a non-selective potassium channel blocker. Tetraethylammonium chloride is a good substrate for organic cation transporter (OCTN1). Tetraethylammonium chloride antitumor properties[1][2].

In Vitro

Tetraethylammonium (0.2-60 mM; 24-72 hours; C6 and 9L glioma cells) treatment inhibits the proliferation of C6 and 9L cells in a dose- and time-dependent manner[1].

Tetraethylammonium (40 mM; 24-72 hours; C6 and 9L glioma cells) treatment significantly increases apoptosis in cells[1].
Tetraethylammonium (40 mM; 12-48 hours; C6 and 9L glioma cells) treatment significantly elevates Bax/Bcl-2 protein ratio in a time-dependent manner[1].
The generation of intracellular ROS increased in C6 and 9L cells by the addition of 20 and 40 mM Tetraethylammonium[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

Cell Line:	Rat C6 and 9L glioma cells
Concentration:	0.2 mM, 2 mM, 20 mM, 40 mM and 60 mM
Incubation Time:	24 hours, 48 hours and 72 hours
Result:	Inhibited the proliferation of C6 and 9L cells in a dose- and time-dependent manner.

Apoptosis Analysis[1]

Cell Line:	Rat C6 and 9L glioma cells
Concentration:	40 mM
Incubation Time:	24 hours, 48 hours and 72 hours
Result:	Significantly increased apoptosis in cells.

Western Blot Analysis[1]

Cell Line:	Rat C6 and 9L glioma cells
Concentration:	40 mM
Incubation Time:	12 hours, 24 hours, 48 hours
Result:	The expression of Bax was markedly increased, while that of Bcl-2 showed a decreasing trend 12, 24 and 48 h.

In Vivo

Tetraethylammonium (1 mM, 3 mM, and 5 mM) significantly increases the amplitude and frequency of contractility of colon and rectum from rats in longitudinal and circular direction. Tetraethylammonium at 5 mM and 15 mM concentrations shows no effect on histology of colon and rectum from rats that are administered locally with Tetraethylammonium into colon lumen from anus for 10 days[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- PeerJ. 2023 May 25.
- SSRN. 2023 Jun 15.
- Biomed Res Int. 2021 May 15.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. K B Yang, et al. Tetraethylammonium inhibits glioma cells via increasing production of intracellular reactive oxygen species. Chemotherapy. 2009;55(5):372-80.

[2]. Zhe Li, et al. Tetraethylammonium enhances the rectal and colonic motility in rats and human in vitro. Naunyn Schmiedebergs Arch Pharmacol. 2011 Aug;384(2):147-55.

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