Triamterene

Cat. No.: HY-B0575

CAS No.: 396-01-0

Molecular Formula: $C_{12}H_{11}N_7$

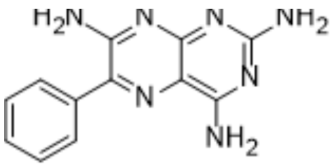
Molecular Weight: 253.26

Target: Sodium Channel; G protein-coupled Bile Acid Receptor 1

Pathway: Membrane Transporter/Ion Channel; GPCR/G Protein

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 : 5 mg/mL (19.74 mM; ultrasonic and warming and heat to 60°C)

H_2O : 0.1 mg/mL (0.39 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.9485 mL	19.7426 mL	39.4851 mL
5 mM	0.7897 mL	3.9485 mL	7.8970 mL
10 mM	0.3949 mL	1.9743 mL	3.9485 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: ≥ 1.67 mg/mL (6.59 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.67 mg/mL (6.59 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.67 mg/mL (6.59 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Triamterene blocks epithelial Na^+ channel (ENaC) in a voltage-dependent manner, which used as a mild diuretic. Triamterene is an inhibitor of the TGR5 receptor[1][2].

In Vitro

Triamterene shows cytotoxicity against HCT116 and CT26 cells, with IC_{50} values of 31.30 and 24.45 μM[5].

Triamterene (100 and 200 μM, 2 h) increases lysosomal rupture, decreases integrity of lysosomes, and activates lysophagy in HepG2 cells[6].

Triamterene (10-100 μM) inhibits the delayed rectifier potassium current in guinea pig ventricular myocytes[7].

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

Immunofluorescence[6]

Cell Line:	HepG2 cells
Concentration:	100 and 200 μM
Incubation Time:	2 h
Result:	Induced Gal3-puncta formation. Induced the translocation of TFEB to the nucleus from the cytosol.

In Vivo

Triamterene (10-40 mg/kg/day, p.o., 5 days) shows anticonvulsant effects in seizure models of mice induced by intravenous Pentylenetetrazole (PTZ) (0.5%, 1 mL/min), intraperitoneal PTZ (85 mg/kg) and maximal electroshock seizure (MES)[3].

Triamterene (25 mg/kg) reduces urinary magnesium excretion in conscious saline-loaded rats[4].

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

CUSTOMER VALIDATION

- Cell Biosci. 2023 Oct 3;13(1):186.
- PLoS Pathog. 2022 Jun 13;18(6):e1010620.
- Immunobiology. 2023 May,152388.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Shafaroodi H, et al. A role for ATP-sensitive potassium channels in the anticonvulsant effects of triamterene in mice. Epilepsy Res. 2016 Mar;121:8-13.

[2]. Devane J, et al. The effects of amiloride and triamterene on urinary magnesium excretion in conscious saline-loaded rats. Br J Pharmacol. 1981 Feb;72(2):285-9.

[3]. Moghadam NH, et al. In vitro cytotoxicity and DNA/HSA interaction study of triamterene using molecular modelling and multi-spectroscopic methods. J Biomol Struct Dyn. 2019 Jun;37(9):2242-2253.

[4]. Park NY, et al. Triamterene induces autophagic degradation of lysosome by exacerbating lysosomal integrity. Arch Pharm Res. 2021 Jun;44(6):621-631.

[5]. Daleau P, et al. Triamterene inhibits the delayed rectifier potassium current (IK) in guinea pig ventricular myocytes. Circ Res. 1994 Jun;74(6):1114-20.

[6]. Busch, A.E., et al., Blockade of epithelial Na+ channels by triamterenes - underlying mechanisms and molecular basis. Pflugers Arch, 1996. 432(5): p. 760-6.

[7]. Gilfrich, H.J., et al., Pharmacokinetics of triamterene after i.v. administration to man: determination of bioavailability. Eur J Clin Pharmacol, 1983. 25(2): p. 237-41.

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