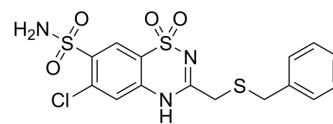


## Benzthiazide

<b>Cat. No.:</b>	HY-B1424		
<b>CAS No.:</b>	91-33-8		
<b>Molecular Formula:</b>	C <sub>15</sub> H <sub>14</sub> ClN <sub>3</sub> O <sub>4</sub> S <sub>3</sub>		
<b>Molecular Weight:</b>	431.94		
<b>Target:</b>	Carbonic Anhydrase		
<b>Pathway:</b>	Metabolic Enzyme/Protease		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 50 mg/mL (115.76 mM; Need ultrasonic)					
		Solvent Concentration	Mass	1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	1 mM		2.3151 mL	11.5757 mL	23.1514 mL
		5 mM		0.4630 mL	2.3151 mL	4.6303 mL
10 mM			0.2315 mL	1.1576 mL	2.3151 mL	
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.08 mg/mL (4.82 mM); Clear solution  2. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (4.82 mM); Clear solution					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Benzthiazide is a long-acting diuretic <sup>[1]</sup> and a hypertension agent. Benzthiazide is an inhibitor of carbonic anhydrase 9 (CA9), with K <sub>i</sub> s of 8.0, 8.8 and 10 nM for CA9, CA2 and CA1, respectively. Benzthiazide also suppresses proliferation of cancer cells <sup>[2]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	Ki: 8.0 nM (CA9), 8.8 nM (CA2), 10 nM (CA1) <sup>[2]</sup>
<b>In Vitro</b>	Benzthiazide (0.4, 2, 10 μM) suppresses proliferation of cancer cell under hypoxic conditions in a dose-dependent manner. Benzthiazide is an inhibitor of carbonic anhydrase 9 (CA9), with K <sub>i</sub> s of 8.0, 8.8 and 10 nM for CA9, CA2 and CA1, respectively <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

Benzthiazide (1, 1.5 mg/100 g BW) causes a marked decrease in urinary calcium excretion and the dissociation of calcium and sodium excretion in hyperprolactinemic rats<sup>[1]</sup>.

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

#### CUSTOMER VALIDATION

- J Pharmaceut Biomed. 2020, 113870.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

#### REFERENCES

[1]. Adler RA, et al. Hypercalciuria in hyperprolactinemic rats: effects of benzthiazide. *Metabolism*. 1986 Jul;35(7):668-72.

[2]. Lee HS, et al. Rational drug repositioning guided by an integrated pharmacological network of protein, disease and drug. *BMC Syst Biol*. 2012 Jul 2;6:80.

**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](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA