BTS

Cat. No.: HY-16690

CAS No.: 1576-37-0

Molecular Formula: $C_{14}H_{15}NO_2S$

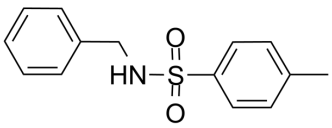
Molecular Weight: 261.34

Target: Myosin

Pathway: Cytoskeleton

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 33.33 mg/mL (127.54 mM)

H_2O : 0.1 mg/mL (0.38 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.8264 mL	19.1322 mL	38.2643 mL
5 mM	0.7653 mL	3.8264 mL	7.6529 mL
10 mM	0.3826 mL	1.9132 mL	3.8264 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 (9.57 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.57 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.57 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

BTS (N-Benzyl-p-toluenesulfonamide) is a potent and selective inhibitor of skeletal muscle myosin II subfragment 1 (S1) ATPase activity, with an IC_{50}s of ~5 μM for actin- and Ca^{2+}-stimulated myosin S1 ATPase. BTS specifically inhibits the contraction of fast skeletal muscle fibers[1][2].

IC_{50} & Target

IC50: ~5 μM (skeletal muscle myosin II S1 ATPase)

In Vitro	BTS (2-12 μM) inhibits the Ca^{2+}-stimulated ATPase activity of myosin S1 in the absence of actin, with an IC_{50} of ~5 μM[1]. BTS (2-20 μM) reversibly inhibits the gliding motility rate of heavy meromyosin (HMM)[1]. BTS (100 μM) releases myosin from actin in the presence of ADP[1]. BTS (0-20 μM) reversibly inhibits isometric Ca^{2+}-activated tension in skinned skeletal muscle fibres from rabbit and frog, with IC_{50}s of ~3 μM and 1 μM, respectively[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Commun. 2018 Nov 19;9(1):4848.
- ACS Appl Mater Interfaces. 2023 Apr 6.

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REFERENCES

[1]. Cheung A, et al. A small-molecule inhibitor of skeletal muscle myosin II. Nat Cell Biol. 2002 Jan;4(1):83-8.

[2]. Shaw MA, et, al. Mechanism of inhibition of skeletal muscle actomyosin by N-benzyl-p-toluenesulfonamide. Biochemistry. 2003 May 27;42(20):6128-35.

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