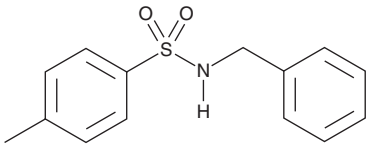
PRODUCT INFORMATION

BTS

Item No. 30099

CAS Registry No.:	1576-37-0
Formal Name:	4-methyl-N-(phenylmethyl)-benzenesulfonamide
Synonyms:	N-Benzyl-*p*-toluenesulfonamide, NSC 37123
MF:	$C_{14}H_{15}NO_2S$
FW:	261.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 229 nm
Supplied as:	A solid
Storage:	-20°C
Stability:	≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

BTS is supplied as a solid. A stock solution may be made by dissolving the BTS in the solvent of choice, which should be purged with an inert gas. BTS is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of BTS in these solvents is approximately 5, 20, and 10 mg/ml, respectively.

BTS is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, BTS should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. BTS has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

BTS is an inhibitor of skeletal muscle myosin II ATPase activity that reduces the affinity of ADP-myosin for actin.[1] It inhibits calcium-stimulated ATPase activity of rabbit muscle myosin subfragment 1 (S1) in an actin-independent manner with an IC_{50} value of approximately 5 µM. It is selective for calcium-stimulated myosin II over human platelet myosin II, kinesin, pyruvate kinase, and lactate dehydrogenase at 100 µM. BTS (2 µM) inhibits the activity of skeletal muscle myosin, reversibly reducing the sliding velocity of heavy meromyosin in a gliding-filament assay. It inhibits isometric calcium-activated tension in isolated fast-twitch rabbit psoas muscle fibers (IC_{50} = ~3 µM) but not in isolated slow-twitch rat trabeculae and papillary cardiac muscle. BTS is also an intermediate in the synthesis of sulfonamides.[2]

References

1. Cheung, A., Dantzig, J.A., Hollingworth, S., *et al.* A small-molecule inhibitor of skeletal muscle myosin II. *Nat. Cell Biol.* **4(1)**, 83-88 (2002).
2. Shi, F., Tse, M.K., Zhou, S., *et al.* Green and efficient synthesis of sulfonamides catalyzed by nano-Ru/Fe_3O_4. *J. Am. Chem. Soc.* **131(5)**, 1775-1779 (2009).

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