

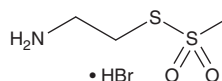
PRODUCT INFORMATION



MTSEA

Item No. 9002267

CAS Registry No.: 16599-33-0
Formal Name: S-(2-aminoethyl) ester methanesulfonylthioic acid, monohydrobromide
Synonyms: 2-Aminoethyl methanethiosulfonate, Methanethiosulfonate Ethylammonium
MF: C₃H₉NO₂S₂ • HBr
FW: 236.1
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

MTSEA is supplied as a crystalline solid. A stock solution may be made by dissolving the MTSEA in the solvent of choice, which should be purged with an inert gas. MTSEA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of MTSEA in these solvents is approximately 30 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of MTSEA can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of MTSEA in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Methanethiosulfonates (MTSs) are sulfhydryl-reactive compounds that form mixed disulfide linkages and are commonly used to study cysteine residues on proteins. MTSEA is a positively charged sulfhydryl-specific reagent that reacts with substituted cysteines. It can provide functional information about relative positions of amino acids within a protein and can be used to probe binding site electrostatic interactions.¹⁻³

References

1. O'Reilly, J.P. and Shockett, P.E. Time- and state-dependent effects of methanethiosulfonate ethylammonium (MTSEA) exposure differ between heart and skeletal muscle voltage-gated Na⁺ channels. *Biochem. Biophys. Acta.* **1818**(3), 443-447 (2012).
2. Li, R.A., Tsushima, R.G., Kallen, R.G., *et al.* Pore residues critical for μ-CTX binding to rat skeletal muscle Na⁺ channels revealed by cysteine mutagenesis. *Biophys. J.* **73**(4), 1874-1884 (1997).
3. Lang, R.J., Harvey, J.R., and Mulholland, E.L. Sodium (2-sulfonatoethyl) methanethiosulfonate prevents S-nitroso-L-cysteine activation of Ca²⁺-activated K⁺ (BK_{Ca}) channels in myocytes of the guinea-pig taenia caeca. *Br. J. Pharmacol.* **139**(6), 1153-1163 (2003).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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