

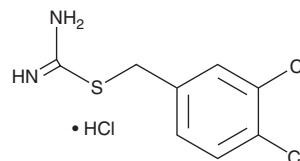
PRODUCT INFORMATION



MreB Perturbing Compound A22

Item No. 15870

CAS Registry No.: 22816-60-0
Formal Name: carbamimidothioic acid,(3,4-dichlorophenyl) methyl ester, monohydrochloride
MF: C₈H₈Cl₂N₂S • HCl
FW: 271.6
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

MreB perturbing compound A22 is supplied as a crystalline solid. A stock solution may be made by dissolving the MreB perturbing compound A22 in the solvent of choice, which should be purged with an inert gas. MreB perturbing compound A22 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of MreB perturbing compound A22 in ethanol is approximately 1 mg/ml and approximately 20 mg/ml in DMSO and DMF.

MreB perturbing compound A22 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, MreB perturbing compound A22 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. MreB perturbing compound A22 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

MreB is an actin-like protein expressed in bacteria.¹ It determines the rod shape of cells and has critical roles in cell division, chromosome segregation, and cell polarity.² MreB perturbing compound A22 is a benzylisothioureia compound that interacts with the ATP binding site of MreB rapidly and reversibly.³ It blocks normal rod shape formation and inhibits chromosome partitioning in *E. coli*, inhibiting growth (MIC = 3.1 µg/ml).⁴ It interferes with chromosome segregation in *C. crescentus* by preventing MreB binding to chromosomes.³ In *V. cholerae*, A22 prevents the development of normal cell shape and alters nucleoid morphology.⁵

References

1. Doi, M., Wachi, M., Ishino, F., *et al.* Determinations of the DNA sequence of the mreB gene and of the gene products of the mre region that function in formation of the rod shape of Escherichia coli cells. *J. Bacteriol.* **170(10)**, 4619-4624 (1988).
2. Tan, Q., Awano, N., and Inouye, M. Determinations of the DNA sequence of the mreB gene and of the gene products of the mre region that function in formation of the rod shape of Escherichia coli cells. *Mol. Microbiol.* **79(1)**, 109-118 (2011).
3. Gitai, Z., Dye, N.A., Reisenauer, A., *et al.* MreB actin-mediated segregation of a specific region of a bacterial chromosome. *Cell* **120(3)**, 329-341 (2005).
4. Iwai, N., Nagai, K., and Wachi, M. Novel S-benzylisothioureia compound that induces spherical cells in Escherichia coli probably by acting on a rod-shape-determining protein(s) other than penicillin-binding protein 2. *Biosci. Biotechnol. Biochem.* **66(12)**, 2658-2662 (2002).
5. Srivastava, P. J. Changes in nucleoid morphology and origin localization upon inhibition or alteration of the actin homolog, MreB, of *Vibrio cholerae*. *Bacteriol.* **189(20)**, 7450-7463 (2007).

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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