

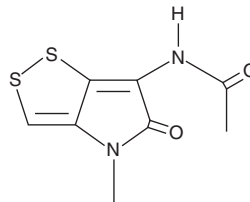
PRODUCT INFORMATION



Thiolutin

Item No. 11350

CAS Registry No.: 87-11-6
Formal Name: N-(4,5-dihydro-4-methyl-5-oxo-1,2-dithiolo[4,3-b]pyrrol-6-yl)-acetamide
Synonyms: Acetopyrrothin, NSC 3927
MF: C₈H₈N₂O₂S₂
FW: 228.3
Purity: ≥97%
UV/Vis.: λ_{max}: 310, 390 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Bacterium/*Streptomyces luteosporus*



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

Laboratory Procedures

Thiolutin is supplied as a crystalline solid. A stock solution may be made by dissolving the thiolutin in the solvent of choice, which should be purged with an inert gas. Thiolutin is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of thiolutin in DMSO is approximately 1 mg/ml and approximately 0.5 mg/ml in DMF.

Thiolutin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, thiolutin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Thiolutin 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

Thiolutin is a natural dithiol that reversibly inhibits bacterial and yeast RNA polymerases (IC₅₀ = 3 μg/ml).¹⁻³ Because of this, it can be used for the analysis of mRNA stability. Thiolutin also inhibits endothelial cell adhesion (IC₅₀ < 1 μM) and S180 tumor-induced angiogenesis in mice by inhibiting Hsp27 interactions with cytoskeletal elements.^{4,5}

References

1. Jimenez, A., Tipper, D.J., and Davies, J. Mode of action of thiolutin, an inhibitor of macromolecular synthesis in *Saccharomyces cerevisiae*. *Antimicrob. Agents Chemother.* **3(6)**, 729-738 (1973).
2. Tipper, D.J. Inhibition of yeast ribonucleic acid polymerases by thiolutin. *J. Bacteriol.* **116(1)**, 245-256 (1973).
3. Khachatourians, G.G. and Tipper, D.J. Inhibition of messenger ribonucleic acid synthesis in *Escherichia coli* by thiolutin. *J. Bacteriol.* **119(3)**, 795-804 (1974).
4. Dai, S., Jia, Y., Wu, S.-L., et al. Comprehensive characterization of heat shock protein 27 phosphorylation in human endothelial cells stimulated by the microbial dithiole thiolutin. *J. Proteome Res.* **7(10)**, 4384-4395 (2008).
5. Jia, Y., Wu, S.-L., Isenberg, J.S., et al. Thiolutin inhibits endothelial cell adhesion by perturbing Hsp27 interactions with components of the actin and intermediate filament cytoskeleton. *Cell Stress Chaperones* **15(2)**, 165-181 (2010).

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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