PRODUCT INFORMATION



Thiostrepton

Item No. 19200

CAS Registry No.:	1393-48-2	/S
Formal Name:	N-[(7R,8S)-2-carboxy-7,8-dihydro-8-hydroxy-4-[(1S)-	0
	1-hydroxyethyl]-7-quinolinyl]-L-isoleucyl-L-alanyl-2,3-	
	didehydroalanyl-L-alanyl-2-[(4aR,11S,14Z,18S,21S,28S,32aS)-	
	4a-amino-21-[(1S,2R)-1,2-dihydroxy-1-methylpropyl]-	OH HO N H
	14-ethylidene-3,4,4a,9,10,11,12,13,14,18,19,20,21,27,	
	28,32a-hexadecahydro-11,28-bis[(1R)-1-hydroxyethyl]-	
	9,12,19,26-tetraoxo-17H,26H-8,5:18,15:25,22:32,29-	
	tetranitrilo-5H,15H-pyrido[3,2-m][1,11,17,24,4,7,20,27]	
	tetrathiatetraazacyclotriacontin-2-yl]-4-thiazolecarbonyl-2,3-	
	didehydroalanyl-2,3-didehydro-alaninamide, $(1 \rightarrow 5^{28})$ -lactone	
Synonyms:	Bryamycin, NSC 81722, NSC 170365, Thiactin, Thiostreptin A	
MF:	C ₇₂ H ₈₅ N ₁₉ O ₁₈ S ₅	S N H O U
FW:	1,664.9	
Purity:	≥95%	
Supplied as:	A crystalline solid	· · · · · · · · · · · · · · · · · · ·
Storage:	-20°C	ot N
Stability:	≥4 years	H H
Item Origin:	Bacterium/Streptomyces laurentii	
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.		

Laboratory Procedures

Thiostrepton is supplied as a crystalline solid. A stock solution may be made by dissolving the thiostrepton in the solvent of choice. Thiostrepton is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of thiostrepton in these solvents is approximately 2 and 25 mg/ml, respectively.

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

Description

The mammalian transcription factor forkhead box M1 (FoxM1) is induced during G₁ phase, with expression continuing through S phase and mitosis. Thiostrepton is a natural peptide thiazole antibiotic that inhibits FoxM1 in mammalian cells, preventing the expression of FoxM1-regulated genes, which includes FoxM1 itself.^{1,2} Through this mechanism, thiostrepton prevents proliferation and induces apoptosis in human cancer cells.¹ These effects correlate with the ability of thiostrepton to act as a proteasome inhibitor.³

References

- 1. Bhat, U.G., Halasi, M., and Gartel, A.L. Thiazole antibiotics target FoxM1 and induce apoptosis in human cancer cells. PLoS One 4(5), e5592 (2009).
- 2 Gartel, A.L. Thiazole antibiotics siomycin A and thiostrepton inhibit the transcriptional activity of FOXM1. Front. Oncol. 3, 150 (2013).
- 3. Gartel, AL. Suppression of the oncogenic transcription factor FOXM1 by proteasome inhibitors. Scientifica (Cairo) 2014:596528, (2014).

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

SAFFTY 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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