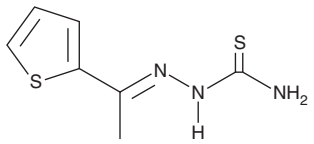
PRODUCT INFORMATION

2-(1-(Thiophen-2-yl)ethylidene)hydrazinecarbothioamide

Item No. 31385

CAS Registry No.: 5351-71-3
Formal Name: 2-[1-(2-thienyl)ethylidene]-hydrazinecarbothioamide
Synonyms: 1-(Thiophen-2-yl)ethanone thiosemicarbazone, NSC 707
MF: $C_7H_9N_3S_2$
FW: 199.3
Purity: ≥95%
UV/Vis.: λ_{max}: 248, 327 nm
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

2-(1-(Thiophen-2-yl)ethylidene)hydrazinecarbothioamide is supplied as a crystalline solid. A stock solution may be made by dissolving the 2-(1-(thiophen-2-yl)ethylidene)hydrazinecarbothioamide in the solvent of choice, which should be purged with an inert gas. 2-(1-(Thiophen-2-yl)ethylidene)hydrazinecarbothioamide is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 2-(1-(thiophen-2-yl)ethylidene)hydrazinecarbothioamide in ethanol is approximately 1 mg/ml and 30 mg/ml in DMSO and DMF.

2-(1-(Thiophen-2-yl)ethylidene)hydrazinecarbothioamide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 2-(1-(thiophen-2-yl)ethylidene)hydrazinecarbothioamide should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 2-(1-(Thiophen-2-yl)ethylidene) hydrazinecarbothioamide has a solubility of approximately 0.20 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

2-(1-(Thiophen-2-yl)ethylidene)hydrazinecarbothioamide is an antimicrobial agent.[1] It is active against the Gram-negative bacteria *E. coli*, *P. aeruginosa*, and *S. marcescens* (MICs = 64, 100, and 70 µg/ml, respectively), the Gram-positive bacteria *S. aureus*, *M. luteus*, and *B. cereus* (MICs = 130, 100, and 50 µg/ml, respectively), and the fungi *C. albicans*, *G. candidum*, *T. rubrum*, *F. oxysporum*, *A. flavus*, and *S. brevicaulis* (MICs = 69-120 µg/ml). 2-(1-(Thiophen-2-yl)ethylidene)hydrazinecarbothioamide is also a precursor in the synthesis of other antimicrobial agents, as well as compounds with anticancer activity.[1,2]

References

1. Youssef, M.S.K. and Abeed, A.A.O. Synthesis and antimicrobial activity of some novel 2-thienyl substituted heterocycles. *Heterocycl. Commun.* **20(1)**, 25-31 (2014).
2. Gomha, S.M., Edrees, M.M., and Altalbawy, F.M.A. Synthesis and characterization of some new bis-pyrazolyl-thiazoles incorporating the thiophene moiety as potent anti-tumor agents. *Int. J. Mol. Sci.* **17(9)**, 1499 (2016).

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