



LKT Laboratories, Inc.

6-Thioguanine

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Product Information

Product ID T2835

CAS No. 154-42-7

Chemical Name

Synonym tioguanine, thioguanine

Formula $C_5H_5N_5S$

Formula Wt. 167.19

Melting Point >360°C

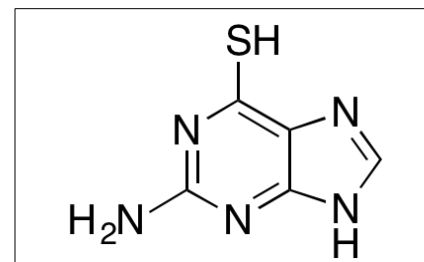
Purity ≥90%

Solubility Soluble in NaOH (50 mg/ml), slightly soluble in ethanol, insoluble in water

Store Temp Ambient

Ship Temp Ambient

Description 6-Thioguanine is a nucleotide analog of guanine that exhibits anticancer chemotherapeutic, immunosuppressive, and anti-parasitic activities. 6-Thioguanine is incorporated into DNA, altering stability of the topoisomerase II-DNA cleavage complex and increasing DNA fragmentation; these actions result in growth arrest and inhibition of proliferation across many cancer cell lines. In acute lymphoblastic leukemia (ALL) cells, 6-thioguanine increases mitochondrial dysfunction and generation of ROS, inducing a cytotoxic effect. In other in vitro models, 6-thioguanine decreases expression of TNF-related apoptosis-inducing ligand (TRAIL). Additionally, this compound inhibits growth of *Toxoplasma gondii*.



Bulk quantities available upon request

Product ID	Size
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T2835	250 mg
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T2835	500 mg
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T2835	1 g
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References Zhang F, Fu L, Wang Y. 6-thioguanine induces mitochondrial dysfunction and oxidative DNA damage in acute lymphoblastic leukemia cells. *Mol Cell Proteomics*. 2013 Dec;12(12):3803-11. PMID: 24043426.

Bohon J, de los Santos CR. Effect of 6-thioguanine on the stability of duplex DNA. *Nucleic Acids Res*. 2005 May 19;33(9):2880-6. PMID: 15905476.

Thomas CW, Myhre GM, Tschumper R, et al. Selective inhibition of inflammatory gene expression in activated T lymphocytes: a mechanism of immune suppression by thiopurines. *J Pharmacol Exp Ther*. 2005 Feb;312(2):537-45. PMID: 15388785.

Pfefferkorn ER, Bzik DJ, Honsinger CP. *Toxoplasma gondii*: mechanism of the parasitostatic action of 6-thioxanthine. *Exp Parasitol*. 2001 Dec;99(4):235-43. PMID: 11888251.

Morgan CJ, Chawdry RN, Smith AR, et al. 6-Thioguanine-induced growth arrest in 6-mercaptopurine-resistant human leukemia cells. *Cancer Res*. 1994 Oct 15;54(20):5387-93. PMID: 7923170.

Caution: This product is intended for laboratory and research use only. It is not for human or drug use.