

Certificate of Analysis

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Product Name: 6-Thioguanine

Catalog No.: 4061

Batch No.: 1

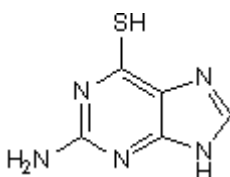
CAS Number: 154-42-7

EC Number: 205-827-2

IUPAC Name: 2-Amino-6-mercaptopurine

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₅H₅N₅S
Batch Molecular Weight: 167.19
Physical Appearance: Pale yellow solid
Solubility: DMSO to 100 mM
Storage: Store at RT
Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 100% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	35.92	3.01	41.88
Found	36.15	3.06	41.72

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Product Name: 6-Thioguanine

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CAS Number: 154-42-7

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IUPAC Name: 2-Amino-6-mercaptapurine

Description:

Anticancer and immunosuppressive agent often used to treat immune disorders and leukemia. Displays cytotoxic and antineoplastic properties; disrupts cytosine methylation by DNA methyltransferases after incorporation into DNA. Selectively kills BRCA2-defective tumors in a xenograft model. Also facilitates proteasome-mediated degradation of DNA (cytosine-5)-methyltransferase 1 (DNMT1).

Physical and Chemical Properties:

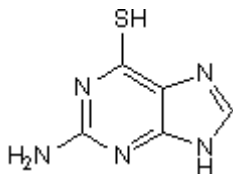
Batch Molecular Formula: C₅H₅N₅S

Batch Molecular Weight: 167.19

Physical Appearance: Pale yellow solid

Minimum Purity: >99%

Batch Molecular Structure:



References:

Wang and Wang (2009) 6-Thioguanine perturbs cytosine methylation at CpG dinucleotide site by DNA methyltransferases *in vitro* and acts as a DNA demethylating agent *in vivo*. *Biochemistry* **48** 2290. PMID: 19236003.

Issaeva et al (2010) 6-Thioguanine selectively kills BRCA2-defective tumors and overcomes PARP inhibitor resistance. *Cancer Res.* **70** 6268. PMID: 20631063.

Yuan et al (2011) 6-thioguanine reactivates epigenetically silenced genes in acute lymphoblastic leukemia cells by facilitating proteasome-mediated degradation of DNMT1. *Cancer Res.* **71** 1904. PMID: 21239472.

Storage: Store at RT

Solubility & Usage Info:

DMSO to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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