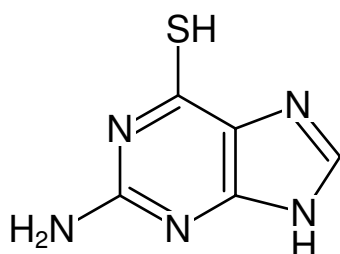




## 6-Thioguanine

Inhibitor of Methyltransferases  
 2-Amino-6-purinethiol, 6-Mercaptoguanine  
 2-Amino-6-mercaptopurine  
 2-Amino-6-purinethiol, 6-Mercaptoguanine

Cat. No.	Amount
NU-962	10 mg



Structural formula of 6-Thioguanine

### For research use only!

**Shipping:** shipped on blue ice

**Storage Conditions:** store at -20 °C

**Shelf Life:** 12 months after date of delivery

**Molecular Formula:** C<sub>5</sub>H<sub>5</sub>N<sub>5</sub>S

**Molecular Weight:** 167.19 g/mol

**CAS#:** 154-42-7

**EC number:** 205-827-2

**Purity:** ≥ 95 % (HPLC)

**Form:** white to slightly yellow solid

### Applications:

**For research use only!**

### Description:

Thiopurines are substrates for thiopurine-methyltransferases (TPMT), which forms S-adenosyl-homocysteine and thiopurine-S-methylester from S-adenosylmethionine and thiopurines. This reaction is involved in biotransformation of xenobiotics and reduces simultaneously the concentration of S-adenosylmethionine. Both DNA-methyltransferases and histone-methyltransferases use S-adenosylmethionine as methyl donor and are therefore inhibited by thiopurines. Inhibition of DNA-methyltransferases causes DNA-demethylation or hemi-demethylation, thus regulating gene activation and silencing by creating openings that allow transcription factors to bind to DNA and thus to reactivate genes.

Typical concentration: 0.8-2.7 μM in TPMT cells

### Related Products:

Jena Bioscience offers additional inhibitors for DNA-methyltransferases: 5-Aza-2'dCTP (#NU-1118), 5-Azacytidine (#NU-961), 6-Thioguanine (#NU-962) and 6-Mercaptopurine (#NU-963). See also 5-Methyl-CTP and derivatives: #NU-1138, #N-1070, #NU-932, #NU-1125, #NU-1069 and #NU-1067.

### Selected References:

Chrzanowska *et al.* (2012) Thiopurine S-methyltransferase phenotype-genotype correlation in children with acute lymphoblastic leukemia. *Acta Poloniae Pharmaceutica* **69** (3):405.

Misdaq *et al.* (2012) Establishment of thiopurine S-methyltransferase gene knockdown in Jurkat T-lymphocytes: An in vitro model of TPMT polymorphism. *Therapeutic Drug Monitoring* **34** (5):584.

Tack *et al.* (2012) Thioguanine in the treatment of refractory coeliac disease – a single centre experience. *Alimentary Pharmacology and Therapeutics* **36** (3):274.

Niehirs (2009) Active DNA demethylation and DNA repair. *Differentiation* **77**:1.

Steele *et al.* (2009) Combined inhibition of DNA methylation and histone acetylation enhances gene re-expression and drug sensitivity in vivo. *British J. Cancer* **100**:758.

Szyf (2009). Epigenetics, DNA methylation and chromatin: Modifying drugs. *Ann. Rev. Pharmacol. Toxicol.* **49**:243.

Holliday *et al.* (2002) DNA methylation and epigenetic inheritance. *Methods* **27**:179.