

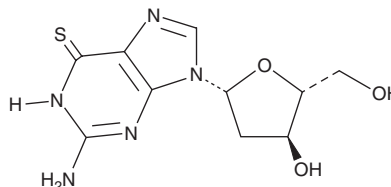
# PRODUCT INFORMATION



## 6-thio-2'-Deoxyguanosine

Item No. 19154

**CAS Registry No.:** 789-61-7  
**Formal Name:** 2'-deoxy-6-thio-guanosine  
**Synonyms:** 6-thio-dG, NSC 71261,  $\beta$ -Thioguanine deoxyriboside  
**MF:**  $C_{10}H_{13}N_5O_3S$   
**FW:** 283.3  
**Purity:**  $\geq 95\%$   
**UV/Vis.:**  $\lambda_{max}$ : 209, 259, 346 nm  
**Supplied as:** A crystalline solid  
**Storage:**  $-20^{\circ}C$   
**Stability:**  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

6-thio-2'-Deoxyguanosine (6-thio-dG) is supplied as a crystalline solid. A stock solution may be made by dissolving the 6-thio-dG in the solvent of choice, which should be purged with an inert gas. 6-thio-dG is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of 6-thio-dG in these solvents is approximately 20 mg/ml.

6-thio-dG is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 6-thio-dG should first be dissolved in DMF and then diluted with the aqueous buffer of choice. 6-thio-dG 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

6-thio-2'-Deoxyguanosine (6-thio-dG) is a purine nucleoside analog. It reduces infection of Calu-3 cells by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2;  $EC_{50} = 0.04 \mu M$ ) but is also toxic to Calu-3 cells with a 50% cytotoxic concentration ( $CC_{50}$ ) value of  $1.14 \mu M$ .<sup>1</sup> 6-Thio-dG (2 mg/kg) decreases tumor volume and increases the number of tumor cells with telomere dysfunction-induced foci in an A549 non-small cell lung cancer (NSCLC) mouse xenograft model.<sup>2</sup> It increases the number of programmed cell death protein 1 (PD-1) positive  $CD8^+$  T cells, as well as induces tumor regression when administered in combination with an antibody against PD-1 ligand (PD-L1) in MC-38 murine colon carcinoma models.<sup>3</sup>

### References

- Schultz, D.C., Johnson, R.M., Ayyanathan, K., *et al.* Pyrimidine inhibitors synergize with nucleoside analogues to block SARS-CoV-2. *Nature* **604(7904)**, 134-140 (2022).
- Mender, I., Gryaznov, S., Dikmen, Z.G., *et al.* Induction of telomere dysfunction mediated by the telomerase substrate precursor 6-thio-2'-deoxyguanosine. *Cancer Discov.* **5(1)**, 82-95 (2015).
- Mender, I., Zhang, A., Ren, Z., *et al.* Telomere stress potentiates STING-dependent anti-tumor immunity. *Cancer Cell* **38(3)**, 400-411 (2020).

#### WARNING

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

#### SAFETY 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 04/17/2024

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM