

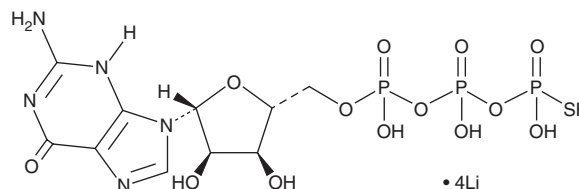
# PRODUCT INFORMATION



## Guanosine 5'-[γ-thio]triphosphate (lithium salt)

Item No. 35098

**CAS Registry No.:** 94825-44-2  
**Formal Name:** guanosine 5'-(trihydrogen diphosphate), P'-anhydride with phosphorothioic acid, tetralithium salt  
**Synonyms:** GTPγS, Guanosine 5'-O-(3-thio)triphosphate, Guanosine 5'-trihydrogen diphosphate monoanhydride, Phosphorothioic Acid  
**MF:** C<sub>10</sub>H<sub>16</sub>N<sub>5</sub>O<sub>13</sub>P<sub>3</sub>S • 4Li  
**FW:** 567.0  
**Purity:** ≥75%  
**UV/Vis.:** λ<sub>max</sub>: 253 nm  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years



**Special Conditions:** Unstable in solution. Use immediately

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

### Laboratory Procedures

Guanosine 5'-[γ-thio]triphosphate (GTPγS) (lithium salt) is supplied as a solid. A stock solution may be made by dissolving the GTPγS (lithium salt) in water. The solubility of GTPγS (lithium salt) in water is approximately 75 mg/ml. We do not recommend storing the aqueous solution.

### Description

GTPγS is a hydrolysis-resistant analog of GTP (Item No. 16060) that binds to and activates G proteins in the presence of magnesium.<sup>1</sup> GTPγS has been used to obtain crystal structures of GTPases in their active states, as well as measure the stability of GTPases in the presence of ligands.<sup>2,3</sup> A radiolabeled form of GTPγS, [<sup>35</sup>S]GTPγS, is commonly used in binding assays to determine agonism or antagonism at G protein-coupled receptors (GPCRs).<sup>1,4</sup>

### References

1. Harrison, C. and Traynor, J.R. The [<sup>35</sup>S]GTPγS binding assay: Approaches and applications in pharmacology. *Life Sci.* **74(4)**, 489-508 (2003).
2. Ihara, K., Muraguchi, S., Kato, M., *et al.* Crystal structure of human RhoA in a dominantly active form complexed with a GTP analogue. *J. Biol. Chem.* **273(16)**, 9656-9666 (1998).
3. Lito, P., Solomon, M., Li, L.-S., *et al.* Allele-specific inhibitors inactivate mutant KRAS G12C by a trapping mechanism. *Science* **351(6273)**, 604-608 (2016).
4. Strange, P.G. Use of the GTPγS ([<sup>35</sup>S]GTPγS and Eu-GTPγS) binding assay for analysis of ligand potency and efficacy at G protein-coupled receptors. *Br. J. Pharmacol.* **161(6)**, 1238-1249 (2010).

#### 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

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