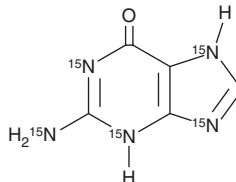


# PRODUCT INFORMATION



## Guanine-<sup>15</sup>N<sub>5</sub> Item No. 41180

**CAS Registry No.:** 168566-53-8  
**Formal Name:** 2-(amino-<sup>15</sup>N)-1,7-dihydro-6H-purin-6-one-1,3,7,9-<sup>15</sup>N<sub>4</sub>  
**MF:** C<sub>5</sub>H<sub>5</sub>[<sup>15</sup>N]<sub>5</sub>O  
**FW:** 156.1  
**Purity:** ≥98%  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

Guanine-<sup>15</sup>N<sub>5</sub> is supplied as a solid. A stock solution may be made by dissolving the guanine-<sup>15</sup>N<sub>5</sub> in the solvent of choice, which should be purged with an inert gas. Guanine-<sup>15</sup>N<sub>5</sub> is slightly soluble (0.1-1 mg/ml) in acetonitrile.

Guanine-<sup>15</sup>N<sub>5</sub> is sparingly soluble (1-10 mg/ml) in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

### Description

Guanine-<sup>15</sup>N<sub>5</sub> is intended for use as an internal standard for the quantification of guanine (Item No. 34248) by GC- or LC-MS. Guanine is a purine base.<sup>1</sup> It forms complementary base pairs with the pyrimidine cytosine in DNA and RNA. Guanine can be linked to ribose via a β-N<sub>9</sub>-glycosidic bond to form the purine nucleoside guanosine (Item No. 27702), which can be phosphorylated to guanine-based purines that have numerous roles in intracellular signal transduction.<sup>2,3</sup>

### References

1. Berg, J.M., Tymoczko, J.L., and Stryer, L. *Biochemistry*. 5<sup>th</sup> ed., W.H. Freeman, New York (2002).
2. Devereaux, Z.J., He, C.C., Zhu, Y., *et al.* Structures and relative glycosidic bond stabilities of protonated 2'-fluoro-substituted purine nucleosides. *J. Am. Soc. Mass Spectrom.* **30(8)**, 1521-1536 (2019).
3. Di Liberto, V., Mudò, G., Garozzo, R., *et al.* The guanine-based purinergic system: The tale of an orphan neuromodulation. *Front. Pharmacol.* **7**, 158 (2016).

#### 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.

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