

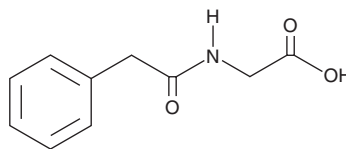
# PRODUCT INFORMATION



## Phenylacetylglutamine

Item No. 36368

CAS Registry No.: 500-98-1  
Formal Name: N-(2-phenylacetyl)-glycine  
Synonyms: NSC 408424, NSC 92778, PAG, PAGly, Phenaceturic Acid, N-Phenylacetylglutamine  
MF:  $C_{10}H_{11}NO_3$   
FW: 193.2  
Purity:  $\geq 98\%$   
Supplied as: A solid  
Storage:  $-20^{\circ}\text{C}$   
Stability:  $\geq 4$  years



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

### Laboratory Procedures

Phenylacetylglutamine is supplied as a solid. A stock solution may be made by dissolving the phenylacetylglutamine in the solvent of choice, which should be purged with an inert gas. Phenylacetylglutamine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of phenylacetylglutamine in these solvents is approximately 1, 10, and 25 mg/ml, respectively.

### Description

Phenylacetylglutamine is a glycine conjugate of phenylacetate.<sup>1-4</sup> It is formed via the conversion of phenylalanine by gut microbiota to phenylacetic acid followed by glycine conjugation in the liver.<sup>4,5</sup> Phenylacetylglutamine (100  $\mu\text{M}$ ) decreases hypoxia-induced apoptosis in neonatal mouse cardiomyocytes.<sup>3</sup> Levels of phenylacetylglutamine in urine and plasma are increased in a rat model of phospholipidosis induced by the antiarrhythmic agent amiodarone (Item No. 15213).<sup>1</sup> Phenylacetylglutamine reduces myocardial infarct size in a mouse model of ischemia-reperfusion injury.<sup>3</sup>

### References

1. Kamiguchi, H., Murabayashi, M., Mori, I., *et al.* Biomarker discovery for drug-induced phospholipidosis: Phenylacetylglutamine to hippuric acid ratio in urine and plasma as potential markers. *Biomarkers* **22**(2), 178-188 (2016).
2. Jones, A.R. Some observations on the urinary excretion of glycine conjugates by laboratory animals. *Xenobiotica* **12**(6), 387-395 (1982).
3. Xu, X., Lu, W.-J., Shi, J.-Y., *et al.* The gut microbial metabolite phenylacetylglutamine protects against cardiac injury caused by ischemia/reperfusion through activating  $\beta 2\text{AR}$ . *Arch. Biochem. Biophys.* **697**, 108720 (2021).
4. Nemet, I., Saha, P.P., Gupta, N., *et al.* A cardiovascular disease-linked gut microbial metabolite acts via adrenergic receptors. *Cell* **180**(5), 862-877.e22 (2020).
5. Zhu, Y., Dwidar, M., Nemet, I., *et al.* Two distinct gut microbial pathways contribute to meta-organismal production of phenylacetylglutamine with links to cardiovascular disease. *Cell Host Microbe* **31**(1), 18-32.e9 (31(1)).

#### 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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