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ProductInformation

Gly-Gly

Product Number **G 1002**
Store at Room Temperature

Product Description

Molecular Formula: $C_4H_8N_2O_3$
Molecular Weight: 132.1
CAS Number: 556-50-3
pK_a: 3.14, 8.17[1]
Melting Point: 262 - 264 °C[1]
Synonym: diglycine, N-glycylglycine

Gly-Gly is the simplest of all dipeptides and is used as a starting template for the preparation of more complex peptides.[1] It is also a substrate for the enzyme glycylglycine dipeptidase.[2] Gly-Gly is also utilized as a buffer in biochemistry, in the buffering range of 7.5 - 8.9 at 25 °C and 7.2 - 8.6 at 37 °C.

Gly-Gly has been utilized in the purification and characterization of a fructose-6-phosphate aldolase from *Escherichia coli*, and in the characterization of a PMA hydrolase from a strain of *Comamonas acidovorans*.[3,4] The use of Gly-Gly in a [^{35}S]GTPγ S binding assay for measuring functional coupling of G proteins with receptors has been reported.[5]

The cis-trans isomerization at the secondary amide peptide bond of Gly-Gly has been investigated by direct UV/vis spectrophotometry.[6] A theoretical study of the fragmentation of protonated Gly-Gly, using quantum chemical and RRKM calculations, has been published.[7] The crystal structure of a complex of glycylglycine with monoperoxovanadate has been determined.[8]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (176 mg/ml), yielding a clear, colorless solution.

References

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3. Schurmann, M., and Sprenger, G. A., Fructose-6-phosphate aldolase is a novel class I aldolase from *Escherichia coli* and is related to a novel group of bacterial transaldolases. J. Biol. Chem., **276(14)**, 11055-11061 (2001).
4. Godde, C., et al., Isolation of poly(beta-L-malic acid)-degrading bacteria and purification and characterization of the PMA hydrolase from *Comamonas acidovorans* strain 7789. FEMS Microbiol. Lett., **173(2)**, 365-372 (1999).
5. Happe, H. K., et al., Agonist-stimulated [^{35}S]GTPγS autoradiography: optimization for high sensitivity. Eur. J. Pharmacol., **422(1-3)**, 1-13 (2001).
6. Schiene-Fischer, C., and Fischer, G., Direct measurement indicates a slow cis/trans isomerization at the secondary amide peptide bond of glycylglycine. J. Am. Chem. Soc., **123(26)**, 6227-6231 (2001).
7. Paizs, B., and Suhai, S., Theoretical study of the main fragmentation pathways for protonated glycylglycine. Rapid Commun. Mass Spectrom., **15(8)**, 651-663 (2001).
8. Einstein, F. W., et al., A product formed from glycylglycine in the presence of vanadate and hydrogen peroxide: the (glycylde-*N*-ydroglycinato-κ^3N^2,N^N,O^1)oxoperoxovanadate(V) anion. Inorg. Chem., **35(6)**, 1680-1684 (1996).

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