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ProductInformation

DL-Glutamic acid monohydrate

Product Number **G1126**
Store at Room Temperature

Product Description

Molecular Formula: $C_5H_9NO_4 \cdot H_2O$
Molecular Weight: 165.1
CAS Number: 19285-83-7
Melting Point: 225-227 °C (with decomposition)
Synonyms: DL-glutaminic acid, DL-α-aminoglutaric acid; DL-1-aminopropane-1,3-dicarboxylic acid[1]

Glutamic acid is a non-essential amino acid that is also an excitatory amino acid (EAA) because of its role in neurotransmission.[1] Its name derives from its historical isolation from wheat gluten. A detailed review of the chemistry of glutamic acid has been published.[2]

DL-Glutamic acid has been used as an energy source in the isolation of cultured *Thiobacillus acidophilus*.[3] It has been utilized as a supplement in the diet of chicks and been shown to lead to grown depression.[4] DL-Glutamic acid has been utilized as a nitrogen source for the culture of nematode eggs from Arkansas Fungus 18 (ARF18) and *Pochonia chlamydospora var. chlamydospora*.[5]

A method for the analysis of DL-glutamic acid and other amino acids via copper(II) ion, hydrogen peroxide, and pyrocathechol violet has been published.[6] The resolution of DL-glutamic acid as its acetyl derivative through the use of porcine renal acylase I has been reported.[2]

DLGlutamic acid has been used as a starting material for the synthesis of imidazo[1,5-a]quinoxaline amides and carbamates that bind with high affinity to the $GABA_A$/benzodiazepine receptor in cultured *Sf* 9 cells.[7]

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in 1 M HCl (100 mg/ml), yielding a clear, colorless solution.

References

1. The Merck Index, 12th ed., Entry# 4477.
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3. Guay, R., and Silver, M., *Thiobacillus acidophilus* sp. nov.; isolation and some physiological characteristics. Can. J. Microbiol., **21(3)**, 281-288 (1975).
4. Maruyama, K., et al., Effects of D-, DL and L-glutamic acid on chicks. J. Nutr., **105(8)**, 1012-1019 (1975).
5. Liu, X. Z., and Chen, S. Y., Nutritional requirements of *Pochonia chlamydospora* and ARF18, fungal parasites of nematode eggs. J. Invertebr. Pathol., **83(1)**, 10-15 (2003).
6. Janjic, T. J., and Milovanovic, G. A., New kinetic method for determination of ultramicro quantities of organic substances. Determination of amino acids (glycine, DL-serine, DL-phenylalanine, DL-glutamic acid, and L-arginine). Anal. Chem., **45(2)**, 390-393 (1973).
7. TenBrink, R. E., et al., Antagonist, partial agonist, and full agonist imidazo[1,5-a]quinoxaline amides and carbamates acting through the $GABA_A$/benzodiazepine receptor. J. Med. Chem., **37(6)**, 758-768 (1994).

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