



Product Information

Ala-Gln
Cell Culture Tested
Insect Cell Culture Tested

Product Number **A 8185**
Store at Room Temperature

Product Description

Molecular Formula: $C_8H_{15}N_3O_4$
Molecular Weight: 217.2
CAS Number: 39537-23-0
Synonym: alanyl-glutamine, L-alanyl-L-glutamine

This product is cell culture tested (0.5 mg/ml) and insect cell culture tested (0.2 mg/ml). It is appropriate for use in cell culture and insect cell culture applications at 2-10 mM.

Alanyl-glutamine (Ala-Gln) is a dipeptide that is used as a substitute for glutamine in mammalian cell culture media, because of the instability of glutamine in solution and the formation of ammonia as a breakdown product of glutamine in solution, which can have deleterious effects on cells in culture.¹ Ala-Glu is stable to heat sterilization and is less ammoniagenic than glutamine, which contributes to its advantages as a media component.²

Ala-Gln has been used in studies on injury and sepsis, and on the effects of irradiation on leucine and protein metabolism *in vivo*.^{3,4} Ala-Gln has been utilized to investigate polymorphonuclear leucocyte and myeloperoxidase activity *in vitro*.⁵

An ion-pair reversed-phase LC ESI MS method for the analysis of various small peptides, including Ala-Gln, has been published.⁶ The degradation kinetics of Ala-Gln and other glutamine dipeptides have been investigated.⁷

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (50 mg/ml), yielding a clear, colorless solution.

References

1. Hassell, T., et al., Growth inhibition in animal cell culture. The effect of lactate and ammonia. *Appl. Biochem. Biotechnol.*, **30(1)**, 29-41 (1991).
2. Christie, A., and Butler, M., The adaptation of BHK cells to a non-ammoniagenic glutamate-based culture medium. *Biotechnol. Bioeng.*, **64(3)**, 298-309 (1999).
3. Biolo, G., et al., Metabolic response to injury and sepsis: changes in protein metabolism. *Nutrition*, **13(9 Suppl)**, 52S-57S (1997).
4. Holecek, M., et al., Effect of alanyl-glutamine on leucine and protein metabolism in irradiated rats. *Amino Acids*, **22(1)**, 95-108 (2002).
5. Muhling, J., et al., Effects of arginine, L-alanyl-L-glutamine or taurine on neutrophil (PMN) free amino acid profiles and immune functions *in vitro*. *Amino Acids*, **22(1)**, 39-53 (2002).
6. Petritis, K., et al., Ion-pair reversed-phase liquid chromatography-electrospray mass spectrometry for the analysis of underivatized small peptides. *J. Chromatogr. A*, **957(2)**, 173-185 (2002).
7. Arii, K., et al., Degradation kinetics of L-alanyl-L-glutamine and its derivatives in aqueous solution. *Eur. J. Pharm. Sci.*, **7(2)**, 107-112 (1999).

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