

Arg-Gly-Asp

Product Number **A 8052**

Storage Temperature -0 °C

Product Description

Molecular Formula: C₁₂H₂₂N₆O₆

Molecular Weight: 346.3

CAS Number: 99896-85-2

Synonym: L-arginyl-glycyl-L-aspartic acid , RGD

The tripeptide Arg-Gly-Asp (RGD) is an important protein sequence in the binding of proteins to cell surfaces. The RGD motif was initially identified in fibronectin as the sequence motif that mediates cell attachment. Subsequent work has identified the RGD motif in other proteins such as vitronectin, osteopontin, collagens, thrombospondin, fibrinogen, and von Willebrand factor. Many adhesive extracellular matrix, blood, and cell surface proteins recognize the RGD sequence for cell attachment. Several integrins recognize the RGD motif in their particular adhesion protein ligands.^{1,2,3}

The RGD motif-containing hexapeptide GRGDSP has been shown to stimulate constriction in rat afferent arteriole.⁴ The RGD peptide has been utilized in a study of cellular outgrowth in cultured porcine inner cell masses.⁵ The coating of tissue culture plates with RGD-containing peptides to study collagenase expression in rheumatoid synovial fibroblasts has been described.⁶

A ¹H-NMR study of the conformation of RGD-containing peptides in aqueous solution has been reported.⁷ The preparation of a RGD-oligolysine peptide for potential application in integrin-mediated gene delivery has been described.⁸

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in 0.1 N acetic acid (20 mg/ml).

References

1. Ruoslahti, E., and Pierschbacher, M. D., New perspectives in cell adhesion: RGD and integrins. *Science*, **238(4826)**, 491-497 (1987).
2. D'Souza, S. E., et al., Arginyl-glycyl-aspartic acid (RGD): a cell adhesion motif. *Trends Biochem. Sci.*, **16(7)**, 246-250 (1991).
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4. Yip, K. P., and Marsh, D. J., An Arg-Gly-Asp peptide stimulates constriction in rat afferent arteriole. *Am. J. Physiol.*, **273(5 Pt 2)**, F768-776 (1997).
5. Schilperoort-Haun, K. R., and Menino, A. R., Jr., Factors affecting cellular outgrowth from porcine inner cell masses *in vitro*. *J. Anim. Sci.*, **80(10)**, 2671-2680 (2002).
6. Sarkissian, M., and Lafyatis, R., Integrin engagement regulates proliferation and collagenase expression of rheumatoid synovial fibroblasts. *J. Immunol.*, **162(3)**, 1772-1779 (1999).
7. Reed, J., et al., Secondary structure of the Arg-Gly-Asp recognition site in proteins involved in cell-surface adhesion. Evidence for the occurrence of nested β -bends in the model hexapeptide GRGDSP. *Eur. J. Biochem.*, **178(1)**, 141-154 (1988).
8. Harbottle, R. P., et al., An RGD-oligolysine peptide: a prototype construct for integrin-mediated gene delivery. *Hum. Gene Ther.*, **9(7)**, 1037-1047 (1998).

GCY/RXR 11/08

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