PRODUCT INFORMATION

RGDS Peptide

Item No. 15359

CAS Registry No.: 91037-65-9
Formal Name: L-arginylglycyl-L-α-aspartyl-L-serine
Synonyms: Fibronectin Inhibitor, H-Arg-Gly-Asp-Ser-OH
MF: $C_{15}H_{27}N_7O_8$
FW: 433.4
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years

H—Arg—Gly—Asp—Ser—OH

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

Laboratory Procedures

RGDS peptide is supplied as a crystalline solid. A stock solution may be made by dissolving the RGDS peptide in the solvent of choice, which should be purged with an inert gas. RGDS peptide is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of RGDS peptide in these solvents is approximately 30, 25, and 50 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of RGDS peptide can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of RGDS peptide in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Fibronectin is an extracellular matrix protein which binds other proteins and interacts with cells, serving roles in cell adhesion, migration, and signaling.[1] Like vitronectin and collagen, fibronectin contains a conserved tripeptide sequence, Arg-Gly-Asp (RGD) to associate with integrins on the cell surface.[2] RGDS peptide is a tetrapeptide found on fibronectin, fibrinogen α, and von Willebrand factor, but not vitronectin or collagen.[3,4] RGDS interacts with α5β1 and αVβ3 integrins.[5] This tetrapeptide interferes with the attachment of cells to fibronectin-coated surfaces (K_i = 0.6 mM).[3,4] It also blocks the attachment of certain pathogens to cells.[6,7] RGDS peptide inhibits thrombin-induced binding of platelets to fibronectin, fibrinogen α, and von Willebrand factor (IC_{50} = ~10 µM).[3,8,9] The interaction of RGDS peptide with cell surface integrins alters intracellular signaling in ways that are cell- and stimulus-specific.[10,11]

References

1. Ruoslahti, E. and Öbrink, B. *Exp. Cell Res.* **227(1)**, 1-11 (1996).
2. Stömblad, S. and Cheresh, D.A. *Chem. Biol.* **3(11)**, 881-885 (1996).
3. Haverstick, D.M., Cowan, J.F., Yamada, K.M., *et al. Blood* **66(4)**, 946-952 (1985).
4. Pierschbacher, M.D. and Ruoslahti, E. *Nature* **309(5963)**, 30-33 (1984).
5. Basani, R.B., D'Andrea, G., Mitra, N., *et al. J. Biol. Chem.* **276(17)**, 13975-13981 (2014).
6. Pottratz, S.T. and Martin, W.J., II *J. Clin. Invest.* **86(5)**, 1678-1683 (1990).
7. Thomas, D.D., Baseman, J.B., and Alderete, J.F. *J. Exp. Med.* **162(5)**, 1715-1719 (1985).
8. Gartner, T.K. and Bennett, J.S. *J. Biol. Chem.* **260(22)**, 11891-11894 (1985).
9. Ginsberg, M., Pierschbacher, M.D., Ruoslahti, E., *et al. J. Biol. Chem.* **260(7)**, 3931-3936 (1985).
10. Dekkers, B.G.J., Bos, I.S.T., Gosens, R., *et al. Am. J. Respir. Crit. Care Med.* **181(6)**, 556-565 (2010).
11. Moon, C., Han, J.R., Park, H.-J., *et al. Respir. Res.* **10(1)**, 18 (2009).

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