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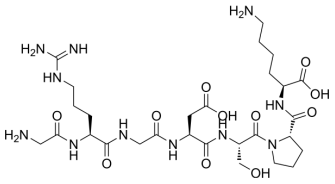
GRGDSPK

Cat. No.:	HY-P0322
CAS No.:	111119-28-9
Molecular Formula:	$C_{28}H_{49}N_{11}O_{11}$
Molecular Weight:	715.76
Sequence:	Gly-Arg-Gly-Asp-Ser-Pro-Lys
Sequence Shortening:	GRGDSPK
Target:	Integrin
Pathway:	Cytoskeleton
Storage:	Sealed storage, away from moisture Powder -80°C 2 years -20°C 1 year * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



BIOLOGICAL ACTIVITY

Description

GRGDSPK (EMD 56574) is a peptide incluing Arg-Gly-Asp (RGD). GRGDSPK (EMD 56574) is an competitive and reversible inhibitory peptide for inhibiting integrin-fibronectin binding. GRGDSPK is used to study the role of integrins in bone formation and resorption[1][2].

In Vitro

GRGDSPK (EMD 56574; RGD; 0.1-50 μM; for 4 days) inhibits mineralization in a dose-dependent manner as determined by measuring calcium content and 70 bonehnit area of tissue in parietal bones 18 days old isolated from pregnant Sprague-Dawley rats[1].

GRGDSPK (10, 50 μM; for 4 days) dramatically alteres bone morphology, with a disruption of osteoblast and mineralized matrix organization[1].

GRGDSPK (RGD; 250 μM), added to the medium, effectively blocks integrin-fibronectin binding and significantly increases the average size of wild-type cell aggregates[2].

When GRGDSPK (250 μM) is added, wild-type mesendodermal progenitors exhibits strongly reduced adhesion forces and work, indicating that the detachment parameters recorded are specific for fibronectin and that integrins expressed in mesendodermal progenitors are involved[2].

GRGDSPK (RGD-containing, 1.5 mM, 1.0 mM, and 0.5 mM) and RGD-mod-ified peptides impair the ability of sperm to fertilizebovine oocytes, illustrated by a reduction in cleavage in a dose-dependent manner[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]

Proliferation assays are carried out in 48-well cell culture dishes coated with OCP or HL. In proliferation assays, 7.25×10^3 cells in 0.5 mL of culture medium are seeded in a 48-well dish. Culture medium is changed every 3 days. After 1, 6, 12, and 18 days of culture, plates are washed thrice with PBS to remove unattached cells, and attached cells are collected by trypsinization. The number of cells is counted using a hemocytometer.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Sessions BR, et al. Effects of amino acid substitutions in and around the arginine-glycine-aspartic acid (RGD) sequence on fertilization and parthenogenetic development in mature bovine oocytes. Mol Reprod Dev. 2006 May;73(5):651-7.

[2]. G A Gronowicz, et al. Synthetic Peptide Containing Arg-Gly-Asp Inhibits Bone Formation and Resorption in a Mineralizing Organ Culture System of Fetal Rat Parietal Bones. J Bone Miner Res. 1994 Feb;9(2):193-201.

[3]. Pierre-Henri Puech, et al. Measuring Cell Adhesion Forces of Primary Gastrulating Cells From Zebrafish Using Atomic Force Microscopy. J Cell Sci. 2005 Sep 15;118(Pt 18):4199-206.

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