

GRGDSPC

Chemical Properties

CAS No.:	91575-26-7
Formula:	C ₂₅ H ₄₂ N ₁₀ O ₁₁ S
Molecular Weight:	690.73
Appearance:	N/A
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).

Biological Description

Description	GRGDSPC, a 7-amino acid peptide, is a thiolated cell adhesion peptide. This peptide is an ideal novel targeted non-viral gene delivery vector, which was easy to be synthesized, high efficient and low cytotoxicity.
In vitro	GRGDSPC is conjugated to acrylated dextran via thiol-acrylate reaction to regulate the interactions of human mesenchymal stem cells (hMSCs) with the photocrosslinkable hydrogels. To determine the conjugation kinetics and efficiency of GRGDSPC peptide to DEX-MAES16, various GRGDSPC concentrations (i.e., 5, 10 and 20 mg/1 g DEX-MAES16) are conjugated to the acrylated Dextran (DEX) macromer over time (0.25, 0.5, 1 and 3h) in PBS at pH 7.8 and the free thiol groups of unreacted peptides are quantified using Ellman's assay. In addition, the reaction kinetics of the thiol-peptide to acrylated (DEX-MAES16) and methacrylated (DEX-HEMA16) macromers are compared. As early as 15 min conjugation, with 5, 10 and 20 mg of GRGDSPC peptide/1 g modified DEX, the peptide conjugation efficiencies with DEX-MAES are 105.40, 94.10 and 87.45%, respectively, while for the reaction with the DEX-HEMA they are 0.73, 15.78 and 18.42%, respectively. After 1h, the GRGDSPC conjugation with DEX-MAES is completed with the peptide concentration of 10 mg, but only 35.66% of the thiol groups of the peptide react with DEX-HEMA. The reaction kinetics are also monitored at 3 h of conjugation, and all of the 20 mg GRGDSPC peptide reacts with acrylated DEX compared to only 32.53% for the methacrylated DEX at this time point[1].

Solubility Information

Solubility	H ₂ O: Soluble (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.448 mL	7.239 mL	14.477 mL
5 mM	0.29 mL	1.448 mL	2.895 mL
10 mM	0.145 mL	0.724 mL	1.448 mL
50 mM	0.029 mL	0.145 mL	0.29 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

Reference

1. Nguyen MK, et al. Photocrosslinkable, biodegradable hydrogels with controlled cell adhesivity for prolonged siRNA delivery to hMSCs to enhance their osteogenic differentiation. J Mater Chem B. 2017 Jan 21;5(3):485-495.

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