
Product Data Sheet

Product Name: GRGDSPC TFA

Cat. No.: GC69189

Chemical Properties

Cas. No.

Formula $C_{27}H_{43}F_3N_{10}O_{13}S$ M.Wt 804.75

Solubility H₂O : ≥ 100 mg/mL (124.26 mM) Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure

Background

GRGDSPC TFA, a 7-amino acid peptide, is a thiolated cell adhesion peptide^[1].

GRGDSPC is conjugated to acrylated dextran via thiol-acrylate reaction to regulate the interactions of human mesenchymal stem cells (hMSCs) with the photocrosslinkable drogels. 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].

Caution: Product has not been fully validated for medical applications. For research use only.

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[1]. Nguyen MK, et al. Photocrosslinkable, biodegradable drogels 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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