RGD peptide (GRGDNP) (TFA)

Cat. No.: HY-P1740A

Molecular Formula: $C_{25}H_{39}F_3N_{10}O_{12}$

Molecular Weight: 728.63

Sequence: Gly-Arg-Gly-Asp-Asn-Pro

Sequence Shortening: GRGDNP

Target: Integrin; Apoptosis

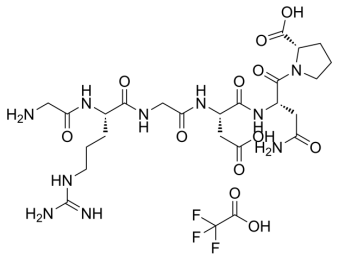
Pathway: Cytoskeleton; Apoptosis

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)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 50 mg/mL (68.62 mM)

H_2O : ≥ 50 mg/mL (68.62 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.3724 mL	6.8622 mL	13.7244 mL
	5 mM	0.2745 mL	1.3724 mL	2.7449 mL
	10 mM	0.1372 mL	0.6862 mL	1.3724 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (137.24 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

RGD peptide (GRGDNP) TFA is an inhibitor of integrin-ligand interactions. RGD peptide (GRGDNP) TFA competitively inhibits α5β1 binding with extracellular matrice (ECM). RGD peptide (GRGDNP) TFA promotes apoptosis through activation of conformation changes that enhance pro-caspase-3 activation and autoprocessing. RGD peptide (GRGDNP) TFA plays an important role in cell adhesion, migration, growth, and differentiation[1][2][3].

IC_{50} & Target

α5β1

In Vitro

RGD peptide (GRGDNP) TFA (50 μM ; preincubation for 3 hours before stretch) abolishes stretch-induced IKK activation and IL-6 mRNA expression. It shows little effect on the IKK activity and IL-6 mRNA expression in unstretched HUVECs[2].

RGD peptide (GRGDNP) TFA (300 μg/mL; for 6 hours) completely reverses enhanced FN1 expression in oxygen glucose deprivation(OGD) treated primary hippocampal neurons, HT22 cell lines and in its sEVs[3].

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

CUSTOMER VALIDATION

- Cell Death Dis. 2022 Jul 1;13(7):577.
- Biofabrication. 2021 Apr 9.
- Biomacromolecules. 2023 Mar 21.

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REFERENCES

[1]. C D Buckley, et al. RGD peptides induce apoptosis by direct caspase-3 activation. Nature. 1999 Feb 11;397(6719):534-9.

[2]. Wei Xia, et al. Damaged brain accelerates bone healing by releasing small extracellular vesicles that target osteoprogenitors. Nat Commun. 2021 Oct 15;12(1):6043.

[3]. Akitoshi Sasamoto, et al. Mechanotransduction by integrin is essential for IL-6 secretion from endothelial cells in response to uniaxial continuous stretch. Am J Physiol Cell Physiol. 2005 May;288(5):C1012-22.

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