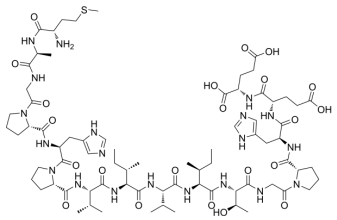
NFAT Inhibitor-1



Cat. No.:	HY-P1026
CAS No.:	249537-73-3
Molecular Formula:	$C_{75}H_{118}N_{20}O_{22}S$
Molecular Weight:	1683.93
Sequence:	Met-Ala-Gly-Pro-His-Pro-Val-Ile-Val-Ile-Thr-Gly-Pro-His-Glu-Glu
Sequence Shortening:	MAGPHPVIVITGPHEE
Target:	Nuclear Factor of activated T Cells (NFAT)
Pathway:	Immunology/Inflammation
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

H_2O : 100 mg/mL (59.38 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.5938 mL	2.9692 mL	5.9385 mL
	5 mM	0.1188 mL	0.5938 mL	1.1877 mL
	10 mM	0.0594 mL	0.2969 mL	0.5938 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 50 mg/mL (29.69 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

NFAT Inhibitor (VIVIT peptide) is a cell-permeable peptide inhibitor of nuclear factor of activated Tcells (NFAT) that selectively inhibits calcineurin-mediated dephosphorylation of NFAT[1][2].

IC_{50} & Target

Nuclear factor of activated Tcells (NFAT)[1][2]

In Vitro

NFAT Inhibitor-1 treatment significantly inhibits nuclear translocation of NFATc1 for 24 hours. Long-term treatment with VIVIT significantly inhibits the cytoplasmic levels of cathepsin K, TRAP, and MMP-9[2].

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

Western Blot Analysis[2]

Cell Line:	Human peripheral blood $CD14^+$ monocytes
Concentration:	10 μM
Incubation Time:	24 hours or 21 days
Result:	Short-term treatment with 10 μM, significantly inhibited nuclear translocation of NFATc1. Long-term treatment, significantly inhibited the cytoplasmic levels of cathepsin K, TRAP, and MMP-9.

CUSTOMER VALIDATION

- Arthritis Rheumatol. 2019 Aug;71(8):1252-1264.
- J Immunother Cancer. 2021 Jul;9(7):e002840.
- Cell Rep. 2021 Apr 6;35(1):108959.
- Cell Prolif. 2023 Mar 27;e13460.
- Biomed Pharmacother. 2023 May.

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REFERENCES

[1]. Aramburu J, et al. Affinity-driven peptide selection of an NFAT inhibitor more selective than cyclosporin A. Science. 1999 Sep 24;285(5436):2129-33.

[2]. Ma JD, et al. Activation of the Peroxisome Proliferator-Activated Receptor γ Coactivator 1β/NFATc1 Pathway in Circulating Osteoclast Precursors Associated With Bone Destruction in Rheumatoid Arthritis. Arthritis Rheumatol. 2019 Aug;71(8):1252-1264.

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