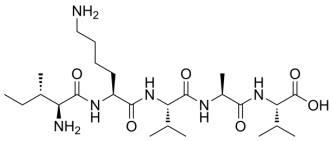
H-Ile-Lys-Val-Ala-Val-OH

Cat. No.:	HY-P4322
CAS No.:	131167-89-0
Molecular Formula:	$C_{25}H_{48}N_6O_6$
Molecular Weight:	528.69
Sequence:	H-Ile-Lys-Val-Ala-Val-OH
Sequence Shortening:	IKVAV
Target:	ERK; Akt
Pathway:	MAPK/ERK Pathway; Stem Cell/Wnt; PI3K/Akt/mTOR
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 (189.15 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.8915 mL	9.4573 mL	18.9147 mL
5 mM	0.3783 mL	1.8915 mL	3.7829 mL
10 mM	0.1891 mL	0.9457 mL	1.8915 mL

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

BIOLOGICAL ACTIVITY

Description

H-Ile-Lys-Val-Ala-Val-OH is one of the most potent active sites of laminin-1. H-Ile-Lys-Val-Ala-Val-OH promotes cell adhesion, neurite outgrowth, and tumor growth. H-Ile-Lys-Val-Ala-Val-OH stimulates BMMSC population growth and proliferation by activating MAPK/ERK1/2 and PI3K/Akt signalling pathways[1][2].

IC_{50} & Target	ERK1	ERK2	Akt

In Vitro

H-Ile-Lys-Val-Ala-Val-OH (0-2.5 mM, 0-48 h) induces proliferation and proliferating cell nuclear antigen (PCNA) synthesis of bone marrow mesenchymal stem cell (BMMSC)[2].

H-Ile-Lys-Val-Ala-Val-OH (5 mM, 24 h) induces the BMMSC cell cycle for cells to enter S phase from G0/G1 and arrests them from entering G2/M phase[2].

H-Ile-Lys-Val-Ala-Val-OH (0-2.5 mM, 0-48 h) activats MAPK/ERK and PI3K/Akt signalling pathways by enhancing phosphorylation levels of ERK1/2 and Akt in the BMMSCs[2].

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

Cell Proliferation Assay[2]

Cell Line:	BMMSC
Concentration:	0, 0.004, 0.02, 0.1, 0.5 and 2.5 mM
Incubation Time:	0, 12, 24, 36, 48 h
Result:	Stimulated proliferating cell nuclear antigen (PCNA) synthesis and induced proliferation of bone marrow mesenchymal stem cell (BMMSC) in a dose- and time-dependent manner.

Cell Cycle Analysis[2]

Cell Line:	BMMSC
Concentration:	5 mM
Incubation Time:	24 h
Result:	Induced the BMMSC cell cycle for cells to enter S phase from G0/G1 and arrested them from entering G2/M phase; the increased proportion of S phase in cell cycle was considered to be a sign of BMMSC proliferation.

Western Blot Analysis[2]

Cell Line:	BMMSC
Concentration:	0, 0.004, 0.02, 0.1, 0.5 and 2.5 mM
Incubation Time:	0, 12, 24, 36, 48 h
Result:	Increased significantly the levels of p-ERK1/2 and p-Akt in a dose- and time-dependent manner.

REFERENCES

[1]. Nomizu M, et al. The all-D-configuration segment containing the IKVAV sequence of laminin A chain has similar activities to the all-L-peptide in vitro and in vivo. J Biol Chem. 1992 Jul 15;267(20):14118-21.

[2]. Li B, et al. IKVAV regulates ERK1/2 and Akt signalling pathways in BMMSC population growth and proliferation. Cell Prolif. 2014 Apr;47(2):133-45.

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

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA