Diprotin A

Cat. No.: HY-111174

CAS No.: 90614-48-5

Molecular Formula: $C_{17}H_{31}N_3O_4$

Molecular Weight: 341.45

Target: Dipeptidyl Peptidase

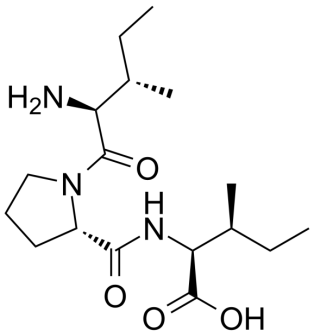
Pathway: Metabolic Enzyme/Protease

Storage: Sealed storage, away from moisture and light, under nitrogen

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (292.87 mM; Need ultrasonic)

H_2O : ≥ 100 mg/mL (292.87 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9287 mL	14.6434 mL	29.2869 mL
	5 mM	0.5857 mL	2.9287 mL	5.8574 mL
	10 mM	0.2929 mL	1.4643 mL	2.9287 mL

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

BIOLOGICAL ACTIVITY

Description

Diprotin A (Ile-Pro-Ile) is an inhibitor of dipeptidyl peptidase IV (DPP-IV)[1].

IC_{50} & Target

IC50: DPP-IV[1]

In Vitro

Diprotin A (100 μM; 30 minutes after CXCR4-blocker or Src-inhibitor treatment) induces the phosphorylation of Src [Tyr 416] and VE-cadherin [Tyr731] in hECs in both normoxia and H/R conditions in human endothelial cells and disrupts endothelial cell-to-cell junctions, which are attenuated by CXCR4 (receptor of SDF-1α)-blocker or Src-inhibitor[1].

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

Western Blot Analysis[1]

Cell Line:	Human endothelial cells[1]

Concentration:	100 μM
Incubation Time:	30 minutes after CXCR4-blocker or Src-inhibitor treatment
Result:	Induced the phosphorylation of Src [Tyr 416] and VE-cadherin [Tyr731] in hECs.

In Vivo

Diprotin A (intraperitoneal injection; 70 μg/kg; twice daily; 7 days) increases the phosphorylation of Src and VE-cadherin and aggravates vascular leakage in the retinas. Collectively, Diprotin A induces vascular leakage by augmenting the SDF-1α/CXCR4/Src/VE-cadherin signaling pathway[1].

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

Animal Model:	Streptozotocin-induced diabetic retinopathy model in wild-type C57/BL6 mice[1]
Dosage:	70 μg/kg
Administration:	Intraperitoneal injection; twice daily; 7 days
Result:	Induced vascular leakage by augmenting the SDF-1α/CXCR4/Src/VE-cadherin signaling pathway.

REFERENCES

[1]. Lee CS, et al. Dipeptidyl Peptidase-4 Inhibitor Increases Vascular Leakage in Retina through VE-cadherin Phosphorylation. Sci Rep. 2016 Jul 6;6:29393.

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