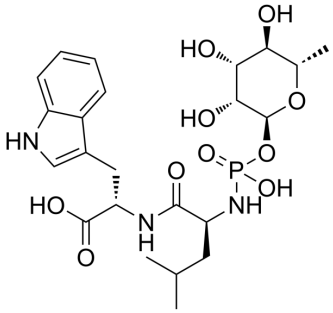
Phosphoramidon

Cat. No.:	HY-N2021
CAS No.:	36357-77-4
Molecular Formula:	$C_{23}H_{34}N_3O_{10}P$
Molecular Weight:	543.5
Target:	MMP; Angiotensin-converting Enzyme (ACE); Neprilysin; Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Phosphoramidon, a microbial metabolite, is a specific metalloprotease thermolysin inhibitor with an IC_{50} of 0.4 μg/mL. Phosphoramidon also inhibits endothelin-converting enzyme (ECE), neutral endopeptidase (NEP), and angiotensin-converting enzyme (ACE) with IC_{50} values of 3.5, 0.034, and 78 μM, respectively[1][2][3].
IC_{50} & Target	Microbial Metabolite
In Vitro	Phosphoramidon (1-500 μM; 30 min) inhibits ET-converting enzyme (ECE) activity in a dose-dependent manner in solubilized rabbit lung membranes[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Phosphoramidon (0.25 mg/kg per min; i.v.) suppresses the hypertensive effect of big endothelin-1 in rats[4]. Phosphoramidon (1-30 mg/kg; i.v.; once) blocks the pressor activity of porcine big endothelin-1-(1-39) in rats[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Sprague-Dawley rats[4]
Dosage:	0.25 mg/kg per min
Administration:	Intravenous injection
Result:	Markedly suppressed the hypertensive effect of big endothelin-1.

REFERENCES

[1]. Umezawa S, , et al. A new microbial metabolite phosphoramidon (isolation and structure). Tetrahedron Letters, 1972, 13(1): 97-100.

[2]. Suda H, et al. A thermolysin inhibitor produced by actinomycetes: phosphoramidon. The Journal of antibiotics, 1973, 26(10): 621-623.

[3]. Kukkola PJ, et al. Differential structure-activity relationships of phosphoramidon analogues for inhibition of three metalloproteases: endothelin-converting enzyme, neutral endopeptidase, and angiotensin-converting enzyme.J CardiovascPharmacol. 1995;26Suppl 3:S65-8.

[4]. Matsumura Y, et al. Phosphoramidon, a metalloproteinase inhibitor, suppresses the hypertensive effect of big endothelin-1. Eur J Pharmacol. 1990 Aug 21;185(1):103-6.

[5]. McMahon EG, et al. Phosphoramidon blocks the pressor activity of porcine big endothelin-1-(1-39) in vivo and conversion of big endothelin-1-(1-39) to endothelin-1-(1-21) in vitro. Proc Natl Acad Sci U S A. 1991 Feb 1;88(3):703-7.

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