Product Data Sheet

Product Name: cis-ACCP
Cat. No.: GC10149

Chemical Properties

Cas. No.	777075-44-2		
Chemical Name	P-[[[(1R,2S)-2-aminocyclohexyl]amino]carbonyl]-phosphonic acid		
SMILES	N[C@H]1CCCC[C@H]1NC(P(O)(O)=O)=O		
Formula	$C_7H_{15}N_2O_4P$	M.Wt	222.2
Solubility	≤0.15mg/ml in ethanol;0.3mg/ml in PBS, pH 7.2,	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	cis-ACCP		

Background

IC50: 4 and 20 μM for MMP-2 and MMP-9, respectively

cis-ACCP is a type IV collagen-specific MMP-2 and MMP-9 inhibitor.

Matrix metalloproteinases (MMPs) belong to a family of proteases that play a keyrole in tissue remodeling and repair via degrading extracellular matrix proteins, therefore enabling cell migration.

In vitro: cis-ACCP could preferentially inhibit MMP-2 and MMP-9 with a preference for MMP-2. The trans-ACCP did not inhibit the gelatinases but had moderate activity against MMP-3 and MMP-13. These findings indicated specificity of the compounds regarding binding to the enzymes. Furthermore, addition of cis-ACCP to tumor cells was able to prevent their traversion dose-dependently, about 90% at the highest concentration tested [1].

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In vivo: Aninmal study showd that cis-ACCP could reduce metastasis formation in mice by approximately 90% when administered by a repetitive once daily dosing regimen at 50 mg/kg via oral or i.p. routes and was nontoxic up to 500 mg/kg, following i.p. administration daily for two weeks. In addition, the pharmacokinetic investigation in rats revealed distribution restricted into the extracellular fluid, the site of action for the antimetastatic activity and rapid elimination from blood [1].

Clinical trial: So far, no clinical study has been conducted.

Reference:

[1] Hoffman, A. ,Qadri, B.,Frant, J., et al. Carbamoylphosphonate matrix metalloproteinase inhibitors 6: Cis-2-aminocyclohexylcarbamoylphosphonic acid, a novel orally active antimetastatic matrix metalloproteinase-2 selective inhibitor-synthesis and pharmacodynamic and pharmacokinetic analysis. Journal of Medicinal Chemistry 51, 1406-1414 (2008).

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