Data Sheet (Cat.No.T7087)

TargetMol

TCEP hydrochloride

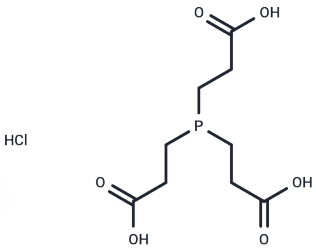
Chemical Properties

CAS No. : 51805-45-9

Formula: C9H16ClO6P

Molecular Weight: 286.65

Storage: Store under nitrogen
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.



Biological Description

Description	TCEP hydrochloride (Tris(2-carboxyethyl)phosphine hydrochloride) is a trialkylphosphine that selectively reduces proteolysis. TCEP hydrochloride is a non-thiol-reducing agent that promotes the binding of NF-κB-DNA.
Targets(IC50)	Others
In vitro	The growth inhibitory activity (GI_{50}) of TCEP hydrochloride in A549, MCF-7 tumor cells and WI-38 normal cells was all greater than 50 μM.[1]
In vivo	TCEP hydrochloride can dose-dependently promote NF-κB-DNA binding within the concentration range of 0.25-6 mM, and can replace DTT for in vitro NF-κB binding experiments. Compared with DTT, TCEP hydrochloride does not significantly weaken the inhibitory effect of Hg^2+ on NF-κB-DNA binding. When 6 mM TCEP hydrochloride is present, 20 μM Hg^2+ can effectively block NF-κB-DNA binding, while at 0.25 mM DTT conditions, more than 100 μM Hg^2+ is required to achieve a similar effect. [2] TCEP hydrochloride can be used to reduce the disulfide bonds in hLF peptides. At a peptide concentration of 0.1 mM, adding 30-fold molar excess of TCEP hydrochloride and incubating at 37 ℃ for 2 hours can achieve effective reduction. [3]

Solubility Information

Solubility	H2O: 50 mg/mL (174.43 mM),Sonication is recommended. DMSO: 252.5 mg/mL (880.87 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 2.75 mg/mL (9.59 mM),Solution. 5% DMSO+95% Saline: 1.45 mg/mL (5.06 mM),Solution. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.4886 mL	17.4429 mL	34.8857 mL
5 mM	0.6977 mL	3.4886 mL	6.9771 mL
10 mM	0.3489 mL	1.7443 mL	3.4886 mL
50 mM	0.0698 mL	0.3489 mL	0.6977 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

1. Matthias G J Baud 1, et al. Defining the mechanism of action and enzymatic selectivity of psammaplin A against its epigenetic targets. Journal of medicinal chemistry, 2012, 55(4): 1731-1750.
Dieguez-Acuña FJ, et al. Inhibition of NF-kappaB-DNA binding by mercuric ion: utility of the non-thiol reductant, tris(2-carboxyethyl)phosphine hydrochloride (TCEP), on detection of impaired NF-kappaB-DNA binding by thiol-directed agents. Toxicol In Vitro. 2000 Feb;14(1):7-16.
Duchardt F, et al. A cell-penetrating peptide derived from human lactoferrin with conformation-dependent uptake efficiency. J Biol Chem. 2009 Dec 25;284(52):36099-108.