

For Research Use Only. Not For Use In Diagnostic Procedures

Version 2.0

三-(2-甲酰乙基)膦盐酸盐

TCEP, hydrochloride



Cat.No. MG2365

Size : 1g

Purity \geq 99.5%(TLC)

CAS : 51805-45-9

MDL number : MFCD00145469

Molecular weight : 286.70

Molecular formula : C₉H₁₅O₆P·HCl

Synonyms : tris(2-Carboxyethyl)phosphine, HCl

Technical literature is available at: www.mesgenbio.com.E-mail MesGen Technical Services if you have questions on use of this system: tech@mesgenbio.com

Background

A water-soluble and odorless disulfide-reducing agent that is more stable and effective than DTT. TCEP is also capable of functioning as a reducing agent even in the pH range of 1.5-8.5. It is more resistant to air-oxidation as compared to DTT.

Description

Tris(2-carboxyethyl)phosphine hydrochloride (TCEP HCL) is a water soluble strong reducing agent that cleave disulfide bonds. It is a non-thiol and non-volatile solid. It can be utilized as catalyst for the reduction of sulfonyl chlorides, N-oxides, sulfoxides and azides. In measuring DHA (Dehydroascorbic acid) content in multiple tissues and plasma of 6-weeks-old mice, 35mM TCEP HCL fully reduced DHA to AA (Ascorbic acid) after 2 hours on ice in a 5% solution of metaphosphoric acid containing 1mM ethylenediaminetetraacetic acid (EDTA) at pH 1.5. In Aspergillus saitoi protease type XIII and porcine pepsin, TCEP can also be used in proteolysis and hydrogen/deuterium exchange.

Solubility \geq 28.7mg/mL in H₂O

Store at +2 to +8° C & in the dark.

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产品描述

三(2-羧乙基)膦盐酸盐 (TCEP hydrochloride, TCEPHCl) 是一种不含硫醇基且无臭的化合物, 广泛应用于生物化学和分子生物学中, 用作多肽或蛋白质的二硫键还原剂。与其他类似的还原剂如二硫苏糖醇 (DTT), β -巯基乙醇 (β -ME) 相比, TCEPHCl 具有多种优点:

- 1) 无异味—实验台上使用即可, 无需通风橱;
- 2) 稳定性高—化合物本身结构的稳定性使得在操作、使用以及保存的过程中不需要做任何预防措施来避免氧化发生。不会挥发, 室温反应即可。室温稳定, 抗空气氧化。水溶性缓冲液, 酸液以及碱液中稳定。不会与蛋白中的其他功能基反应;
- 3) pH 工作范围广—几乎溶于任何 pH 值的水溶性缓冲液, pH 有效工作范围为 1.5-8.5;
- 4) 还原性强—对于大部分实验, 5-50 mM TCEPHCl 即可提供足够的摩尔力, 于室温条件作用几分钟来充分还原二硫键;
- 5) 兼容性广—不含有硫醇基, 进行下游的巯基修饰实验如马来酰亚胺偶联不需要提前去除此还原剂。

本品适用于凝胶电泳以及固相金属离子亲和层析 (IMAC) 的准备步骤, 用作还原剂来破坏蛋白内或蛋白间的二硫键。也特别适用于马来酰亚胺偶联半胱氨酸残基反应, 它能够预防半胱氨酸残基形成二硫键, 也不会像 DTT 或 β -ME, 本身易与马来酰亚胺反应。RNA 分离实验也常用于组织匀浆步骤。

保存条件

常温运输。2-8° C 保存, 避光和避潮。

产品仅供科学研究 禁止用于临床诊断、治疗