TCEP 0.5M Solution

Product Label Information

		Catalog Number	**Description**	**Size**
REF	❑	40-5116-01	TCEP 0.5M Solution; 100 µL	100 µL
	❑	40-5116-10	TCEP 0.5M Solution; 1 mL	1 mL
	❑	40-5116-C0010	TCEP 0.5M Solution; 10 mL	10 mL
	❑	40-5116- C0100	TCEP 0.5M Solution; 100 mL	100 mL
	❑	40-5116- C0500	TCEP 0.5M Solution; 500 mL	500 mL

RUO Research Use Only	-10°C -20°C	LOT
Research Use Only	**Storage** Store at -20°C to -10°C	**Lot Number** Stated on product tube and packing slip
Expiry As marked on product	**Instructions** Consult product description	**QR Code** Visit Gene Link website for product details

Certificate of Analysis & Product Specifications

All component reagents have been manufactured using molecular biology grade water and certified to be DNase and RNase Free.

Appropriate nuclease free handling, dispensing and storage conditions required.

Manufacturing lot numbers are stated on the label of each product and accompanying packing slip.

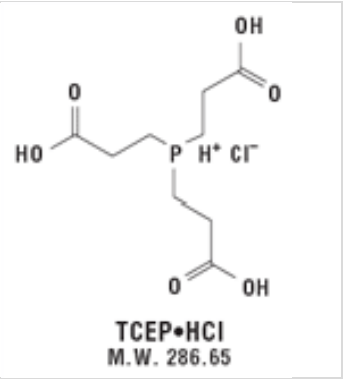
Storage: Shipped on ice. Store at -20°C.

Product Description

TCEP (*tris*(2-carboxyethyl)phosphine) is a potent reducing agent and due to its odorless characteristic is a substitute for DTT and beta- mercaptoethanol use.

Supplied at 0.5M that is 100X concentration. Recommended usage is at a final concentration of 5 mM or Use at 10µL/mL.

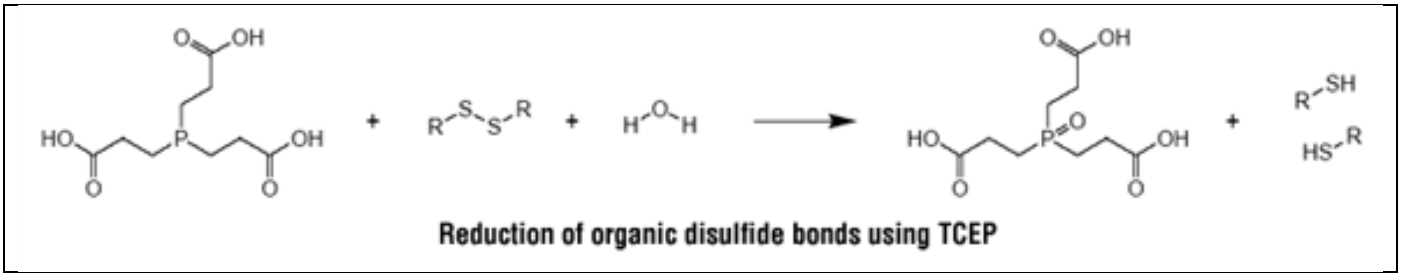
Caution: Use RNase free tubes and reagents for further dilution and use.



Applications and Recommended Product Use:

TCEP (*tris*(2-carboxyethyl)phosphine) is a component in Gene Link Omni-Pure™ RNA purification kits (40-4090-XX and 40-4080-XX). It is used a reducing agent to break disulfide bonds in RNase A and thus ensure high yield of RNA extraction by inhibiting RNase A activity.

TCEP is also recommended for reducing thiol labeled siRNA and other oligonucleotides.



Properties

TCEP selectively and quantitatively reduces even the most water soluble resistive alkyl disulfides over a wide pH range. Reductions typically require less than 5 minutes and are conducted at room temperature. TCEP is odorless and unlike other reducing agents stale to air oxidation. Compared to dithiothreitol (DTT), TCEP is more stable and more effective in reducing disulfides.

TCEP does not contain thiols and does not have to be removed from solutions before performing reactions involving maleimide labeling or other cross linking reagents. TCEP concentrations of <10-20 mM are compatible with most maleimide reaction chemistry.

RNA Purification Protocols & RNase Inactivation

TCEP is used as a reducing agent to break disulfide bonds in RNase A and thus ensure high yield of RNA extraction by inhibiting RNase A activity. It is supplied as 100X concentrated for use at 10 µL/mL to reduce RNase A disulfide bonds. Add 10 µL/mL to RNA purification reagent. Add TCEP prior to use of reagent.

Reduction of Thiol Modified oligos

Gene Link synthesized thiol modified oligos (all thiol modified DNA oligos, RNA, siRNA and molecular probes) are shipped lyophilized and as a disulfide protected* form to prevent the formation of dimers. These can be reduced by the end user after reconstitution and prior to use.

The preferred method is to reduce using TCEP [Tris (2-carboxyethyl) phosphine hydrochloride] The oligos can also be reduced by the classical DTT method. Both methods are given below.

TCEP Reduction Protocol

1. Prepare 0.4 mL of 0.1M (~3%) TCEP solution by adding 80 µL of 0.5M TCEP to 320 µL of sterile RNase free water. Prepare more as required. Preparing fresh 0.1M TCEP is recommended.
2. Add 400 µL of 0.1M TCEP directly to lyophilized thiolated oligos. Vortex to completely dissolve. Leave at room temperature (RT) for 1 hr to reduce the thiol groups. Vortex intermittently.
3. Add 50 µL of 3M Sodium Acetate pH 5.2 and vortex.
4. Add 1.5 mL of absolute ethanol, vortex and store at -20°C for 20 minutes.
5. Centrifuge at 12K rpm for 10 minutes. Decant ethanol and air dry pellet.
6. Dissolve in 200 µL of sterile RNase free water or choice of buffer volume as required.
7. Determine sample concentration by obtaining an absorbance at 260 nm

Handling & Storage of RNA Oligos

Follow established stringent RNase free handling conditions. The lyophilized RNA or siRNA duplex should be stored immediately at -20° C. The lyophilized siRNA is stable for ~6 months at -20° C.

References

1. K. C., Dixon, J.E., *Anal. Biochem*, 161, 524-528 (1987).
2. Gray, W. R., Protein Science, 2, 1732-1748, (1993).
3. Fisher, W.H., et al, Mass Spectrometry, 7, 225-228, (1993).
4. Oda, Y. et al, Nature Biotech, 19, 379-382 (2001).

Ordering Information

Product	Catalog No.	Size
TCEP 0.5M solution; 100 µL	40-5116-01	100 µL
TCEP 0.5M solution ; 1mL	40-5116-10	1 mL
RNase A solution, DNase Free. 2 mg/ml;; 1 mL	40-5101-10	2 mg
RNase A solution, DNase Free. 10 mg/ml; 1 mL	40-5101-01	10 mg
DNase I, RNase-free; 2u/µl	40-5111-05	500 units
Proteinase K; 10 mg/ml	40-5203-02	200 µL
Lytic Enzyme; 4000 units/ml	40-5205-02	200 µL
Glycogen Solution; 10 mg/ml	40-5112-02	200 µL

Related Products Ordering Information

Omni-Pure™ RNA Purification Systems		
Product	**Catalog No.**	**Size***
Omni-Pure™ Blood & Bodily fluids RNA Spin Column Purification System	40-4080-05	50
Omni-Pure™ Blood & Bodily fluids RNA Spin Column Purification System	40-4080-10	100
Omni-Pure™ Blood & Bodily fluids RNA Spin Column Purification System	40-4080-50	500
Omni-Pure™ Universal RNA Spin Column Purification System	40-4090-05	50
Omni-Pure™ Universal RNA Spin Column Purification System	40-4090-10	100
Omni-Pure™ Universal RNA Spin Column Purification System	40-4090-50	500
Omni-Pure™ Blood & Bodily fluids RNA Purification System	40-4081-05	50
Omni-Pure™ Blood & Bodily fluids RNA Purification System	40-4081-10	100
Omni-Pure™ Blood & Bodily fluids RNA Purification System	40-4081-50	500
Omni-Pure™ Universal RNA Purification System	40-4091-05	50
Omni-Pure™ Universal RNA Purification System	40-4091-10	100
Omni-Pure™ Universal RNA Purification System	40-4091-50	500
Omni-Pure™ Viral RNA Spin Column Purification System	40-3650-01	100
Omni-Pure™ Viral RNA Spin Column Purification System	40-3650-05	500

**Unit of size is purification performed. Sample volume for each purification system varies. Each purification yields sufficient quantity for desired applications.

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