3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Trizma® base
BioPerformance Certified, meets EP, USP testing specifications, cell culture tested

Catalog Number **T6066**
Store at Room Temperature

CAS RN 77-86-1
Synonyms: Tris base, Tris(hydroxyamino)methane, 2-Amino-2-(hydroxymethyl)-1,3-propanediol, Tris(hydroxymethyl)aminomethane, THAM, Trometamol
Note: The "Tris" described in this document is **not** the "Tris" used to flame-proof fabric. That compound, Tris(2,3-dibromopropyl)phosphate, has been reported to be a cancer suspect agent.

Molecular Formula: $C_4H_{11}NO_3$
Molecular Weight: 121.14

Product Description

Trizma® is the registered trademark of Sigma-Aldrich applied to various compounds of Tris(hydroxymethyl)-aminomethane that are prepared by Sigma-Aldrich. For example, Trizma HCl is the completely neutralized crystalline hydrochloride salt of Tris. Trizma Base is the pure Tris itself.

Tris(hydroxyamino)methane, or “Tris” for short, is an established basimetric standard and buffer used in biochemistry and molecular biology.[1] It may be used by itself as a buffer or as a component of mixed buffer formulations.[2] These different buffer formulations include:

- Tris-EDTA (TE) buffer
- Tris magnesium buffer
- Tris-acetate-EDTA (TAE) buffer
- Tris-borate-EDTA (TBE) buffer
- Tris-buffered saline (TBS)
- Tris-buffered saline with dextrose (TBS-D)
- Tris-glycine buffer
- Tris-phosphate EDTA buffer
- Tris-SDS buffer
- Tris-sucrose
- Tris-Tricine-SDS buffer

When preparing Trizma solutions at a given pH and temperature, it is necessary to choose the proper mixture of Trizma free base and a corresponding Trizma salt to give the desired final pH at the desired temperature.

Trizma has a significant temperature coefficient, which affects the pH of the solution. For a given concentration the following changes are observed:

- From 5 °C to 25 °C, the pH decreases an average of 0.03 pH units per °C.
- From 25 °C to 37 °C, the pH decreases an average of 0.025 pH units per °C.

This product is cell culture-tested (1.82 mg/mL) and is designated as BioPerformance Certified. It has been tested for endotoxin levels and analyzed for the absence of nucleases and proteases.

This product has been used in various studies and application fields, including:

- Mass spectrometry analysis of proteins[3]
- Expression of recombinant proteins[4]
- Immunofluorescence[5]
- Asymmetric PCR[6]
- Amyloid β-peptide solubilization[7]

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

This product is soluble in water (666 mg/mL), yielding a clear, colorless solution.

Storage/Stability

Trizma solutions can be autoclaved.

References

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3. Beaty, R.M. *et al*., "Target Discovery and Validation in Pancreatic Cancer", in *Methods in Molecular Biology: Target Discovery and Validation Reviews and Protocols: Volume 1 - Emerging Strategies for Targets and Biomarker Discovery* (M. Sioud, ed.). Humana Press (Totowa, NJ), Vol. 360, pp. 57-89 (2007).
4. Subramanyam, S., and Spies, M., *Methods Enzymol.*, **600**, 157-178 (2018).
5. Okkelman, I.A. et al., "Multi-Parametric Imaging of Hypoxia and Cell Cycle in Intestinal Organoid Culture", in Multi-Parametric Live Cell Microscopy of 3D Tissue Models (R.I. Dmitriev, ed.). Springer (Cham, Switzerland), pp. 85-104 (2017).
6. Bird, I.M., "Generation of High-Sensitivity Antisense cDNA Probes by Asymmetric PCR", in *Methods in Molecular Medicine: Hypertension: Methods and Protocols* (J.P. Fennell and A.H. Baker, eds.). Humana Press (Totowa, NJ), Vol. 108, pp. 199-214 (2005).
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