StockOptions™

Tris Buffer Kit (pH 7.0 - 9.0)

HAMPTON RESEARCH
Solutions for Crystal Growth

User Guide **HR2-100**

StockOptions™ Tris buffer kit is a preformulated, sterile filtered set of titrated buffer stocks. The StockOptions buffer stock reagents are supplied as 1.0 M stock solutions in 10 milliliter volumes. Each StockOptions Tris buffer reagent is carefully titrated using hydrochloric acid. StockOptions Tris is comprised of 21 unique reagents covering the pH range of 7.0 to 9.0 in 0.1 pH unit increments.

Suggested Use

StockOptions Tris is designed to help researchers improve the speed, accuracy, precision, and quality of the formulation of crystallization screen solutions and crystallization optimization solutions. Researchers can use the individual StockOptions reagents to conveniently formulate custom screen solutions or standard screen solutions from Hampton Research kits such as Crystal Screen 2™ and Index™. StockOptions Tris reagents can also be used to create solutions for the refinement and optimization of preliminary crystallization conditions. Finally, StockOptions Tris reagents can be used to create accurate, precise, reproducible, high quality solutions for the production of single crystals. Utilizing the reagents in the StockOptions Tris buffer kit it is possible to formulate and screen 21 unique pH levels.

During crystallization experiments the Tris buffer system is typically utilized at a 0.1 M final concentration during the screening, optimization, and production of biological macromolecular crystals. It is therefore recommended that one dilute the StockOptions Tris buffer solution 1:10 to achieve a final concentration of 0.1 M. For example, dilute 1 milliliter of StockOptions Tris to a final volume of 10 milliliters to achieve a final concentration of 0.1 M Tris.

Please note the final pH of the solution created using StockOptions may vary based upon what other reagents are added to the StockOptions Tris buffer.

Example 1

Index Reagent 45 (1 ml volume in a plate reservoir)
Solution Composition: 0.1 M Tris pH 8.5
25% w/v Polyethylene glycol 3,350

Suggested Stock Solutions: 50% w/v Polyethylene glycol 3,350, (StockOptions Tris) 1.0 M Tris pH 8.5.

1. Pipet 400 microliters of sterile filtered deionized water into the plate reservoir.
2. Pipet 100 microliters of 1.0 M Tris pH 8.5 into the plate reservoir.
3. Pipet 500 microliters of 50% Polyethylene glycol 3,350 into the plate reservoir.
4. Aspirate and dispense the solution ten times or until homogeneous.

Note: Water has been added first to enhance subsequent reagent solubility. Also note that one of the larger volumes has been added last so the pipet is already set at a large volume to enhance mixing during aspiration and dispensing.

Example 2

Make a custom 10 milliliter screen reagent of 30% w/v Polyethylene glycol 8,000, 0.1 M Tris pH 8.0

Suggested Stock Solutions: 50% w/v PEG 8,000, (StockOptions Tris) 1.0 M Tris pH 8.0.

1. Pipet 3 milliliters of deionized, sterile filtered water into the tube.
2. Pipet 1 milliliter of 1.0 M Tris pH 8.0 into the tube.
3. Pipet 6 milliliters of 50% w/v PEG 8,000 into a sterile screw top tube.

Seal the tube, and mix until the solution is homogeneous.

For Best Results

Use Hampton Research Optimize™ together with StockOptions reagents for best results. StockOptions reagents are stable at room temperature and are best if used within 12 months of receipt.

Specifications

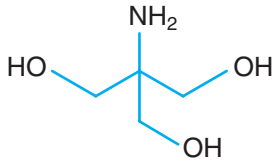
Buffer Reagent: Tris

$C_4H_{11}NO_3$	M_r 121.14	CAS No [77-86-1]	EC No 201-064-4

Titrated with: Hydrochloric acid

HCl	M_r 36.46	CAS No [7647-01-0]	EC No 231-595-7

Useful pH Range: 7.0 - 9.0



Technical Support

Inquiries regarding StockOptions Tris Buffer Kit reagent formulation, interpretation of screen results, optimization strategies and general inquiries regarding crystallization are welcome. Please e-mail, fax, or telephone your request to Hampton Research. Fax and e-mail Technical Support are available 24 hours a day. Telephone technical support is available 8:00 a.m. to 4:30 p.m. USA Pacific Standard Time.

pH	Buffer	Titrant
7.0	1.0 M Tris	Hydrochloric acid
7.1	1.0 M Tris	Hydrochloric acid
7.2	1.0 M Tris	Hydrochloric acid
7.3	1.0 M Tris	Hydrochloric acid
7.4	1.0 M Tris	Hydrochloric acid
7.5	1.0 M Tris	Hydrochloric acid
7.6	1.0 M Tris	Hydrochloric acid
7.7	1.0 M Tris	Hydrochloric acid
7.8	1.0 M Tris	Hydrochloric acid
7.9	1.0 M Tris	Hydrochloric acid
8.0	1.0 M Tris	Hydrochloric acid
8.1	1.0 M Tris	Hydrochloric acid
8.2	1.0 M Tris	Hydrochloric acid
8.3	1.0 M Tris	Hydrochloric acid
8.4	1.0 M Tris	Hydrochloric acid
8.5	1.0 M Tris	Hydrochloric acid
8.6	1.0 M Tris	Hydrochloric acid
8.7	1.0 M Tris	Hydrochloric acid
8.8	1.0 M Tris	Hydrochloric acid
8.9	1.0 M Tris	Hydrochloric acid
9.0	1.0 M Tris	Hydrochloric acid

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