StockOptions™

Bis-Tris Buffer Kit (pH 5.5 - 7.5)

HAMPTON RESEARCH
Solutions for Crystal Growth

User Guide **HR2-106**

StockOptions™ Bis-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 Bis-Tris buffer reagent is carefully titrated using Hydrochloric acid. StockOptions Bis-Tris is comprised of 21 unique reagents covering the pH range of 5.5 to 7.5 in 0.1 pH unit increments.

Suggested Use

StockOptions Bis-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 Index™. StockOptions Bis-Tris reagents can also be used to create solutions for the refinement and optimization of preliminary crystallization conditions. Finally, StockOptions Bis-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 Bis-Tris buffer kit it is possible to formulate and screen 21 unique pH levels.

During crystallization experiments the Bis-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 Bis-Tris buffer solution 1:10 to achieve a final concentration of 0.1 M. For example, dilute 1 milliliter of StockOptions Bis-Tris to a final volume of 10 milliliters to achieve a final concentration of 0.1 M Bis-Tris.

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

Example 1

Index reagent 3: 0.1 M BIS-TRIS pH 5.5 (Stock), 2.0 M Ammonium sulfate

Suggested Stock Solutions: 1.0 M BIS-TRIS pH 5.5 (StockOptions Bis-Tris), 3.5 M Ammonium sulfate.

To make 1 milliliter of this reagent:

1.) Pipet 328 µl of sterile filtered deionized water into the plate reservoir.
2.) Pipet 100 µl of 1.0 M BIS-TRIS pH 5.5 into the plate reservoir.
3.) Pipet 572 µl of 3.5 M Ammonium sulfate into the plate reservoir.
4.) Aspirate and dispense the solution until homogenous.

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 10 milliliters of a custom screen reagent:
30% PEG MME 550, 0.1 M BIS-TRIS pH 6.5

Suggested Stock Solutions: 50% w/v PEG MME 550, 1.0 M BIS-TRIS pH 6.5 (StockOptions Bis-Tris).

1.) Pipet 3 milliliter of deionized, sterile filtered water into the tube.
2.) Pipet 1 milliliter of 1.0 M BIS-TRIS pH 6.5 into the tube.
3.) Pipet 6 milliliters of 50% w/v PEG MME 550 into the tube.

Seal the tube and mix until the solution is homogenous.

For Best Results

Use Hampton Research Optimize™ together with StockOptions reagents for best results.

Specifications

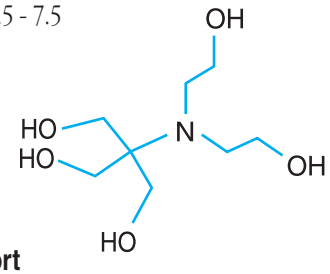
Buffer Reagent: BIS-TRIS

$C_8H_{19}NO_5$	Mr 209.24	CAS No [6976-37-0]	EC No 230-237-7

Titrated with: Hydrochloric acid

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

Useful pH Range: 5.5 - 7.5



Technical Support

Inquiries regarding StockOptions Bis-Tris buffer 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.

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