

StockOptions™

Bicine Buffer Kit (pH 7.4 - 9.3)

User Guide

HR2-101

StockOptions™ Bicine 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 Bicine buffer reagent is carefully titrated using Sodium hydroxide. StockOptions Bicine is comprised of 20 unique reagents covering the pH range of 7.4 to 9.3 in 0.1 pH unit increments.

Suggested Use

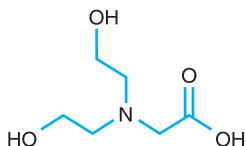
StockOptions Bicine is designed to help researchers improve the speed, accuracy, precision, and quality of the formulation of crystallization screen solutions and crystallization optimization solutions. Researchers can use the individual StockOptions reagents to conveniently formulate custom screen solutions or standard screen solutions from Hampton Research kits such as Crystal Screen™, Crystal Screen Cryo™, Crystal Screen Lite™, Crystal Screen 2™, PEGRx™ 1, PEGRx™ 2 and the Grid Screens™. StockOptions Bicine reagents can also be used to create solutions for the refinement and optimization of preliminary crystallization conditions. Finally, StockOptions Bicine reagents can be used to create accurate, precise, reproducible, high quality solutions for the production of single crystals. Utilizing the reagents in the StockOptions Bicine buffer kit it is possible to formulate and screen 20 unique pH levels.

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

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

Specifications

Useful pH Range: 7.4 - 9.3



Buffer Reagent: BICINE

C₆H₁₃NO₄ M_r 163.17 CAS No [150-25-4] EC No 205-755-1

Titrated with: Sodium hydroxide

NaOH M_r 40.00 CAS No [1310-73-2] EC No 215-185-5

Example 1

Crystal Screen 2 Reagent 46 (1 ml volume in a plate reservoir):

Solution Composition: 0.1 M Sodium chloride, 0.1 M BICINE pH 9.0, 20% v/v Polyethylene glycol monomethyl ether 550

Suggested Stock Solutions: 5.0 M Sodium chloride (HR2-637), 1.0 M BICINE pH 9.0 (StockOptions Bicine), 100% Polyethylene glycol monomethyl ether 550 (HR2-611)

- 1.) Pipet 680 µl of sterile filtered deionized water into the plate reservoir.
- 2.) Pipet 100 µl of 1.0 M BICINE pH 9.0 into the plate reservoir.
- 3.) Pipet 20 µl of 5.0 M Sodium chloride into the plate reservoir.
- 4.) Pipet 200 µl of 100% Polyethylene glycol monomethyl ether 550 into the plate reservoir.
- 5.) 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 ml screen reagent of:

Solution Composition: 30% w/v Polyethylene glycol 8,000, 0.1 M BICINE pH 7.6

Suggested Stock Solutions: 50% w/v Polyethylene glycol 8,000 (HR2-535), 1.0 M BICINE pH 7.6 (StockOptions Bicine).

- 1.) Pipet 3 ml of deionized, sterile filtered water into the tube.
- 2.) Pipet 1 ml of 1.0 M BICINE pH 7.6 into the tube.
- 3.) Pipet 6 ml of 50% w/v Polyethylene glycol 8,000 into a sterile screw top tube.
- 4.) Seal the tube, and mix until the solution is homogeneous.

For Best Results

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

Technical Support

Inquiries regarding StockOptions Bicine 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
7.4	1.0 M BICINE	Sodium hydroxide
7.5	1.0 M BICINE	Sodium hydroxide
7.6	1.0 M BICINE	Sodium hydroxide
7.7	1.0 M BICINE	Sodium hydroxide
7.8	1.0 M BICINE	Sodium hydroxide
7.9	1.0 M BICINE	Sodium hydroxide
8.0	1.0 M BICINE	Sodium hydroxide
8.1	1.0 M BICINE	Sodium hydroxide
8.2	1.0 M BICINE	Sodium hydroxide
8.3	1.0 M BICINE	Sodium hydroxide
8.4	1.0 M BICINE	Sodium hydroxide
8.5	1.0 M BICINE	Sodium hydroxide
8.6	1.0 M BICINE	Sodium hydroxide
8.7	1.0 M BICINE	Sodium hydroxide
8.8	1.0 M BICINE	Sodium hydroxide
8.9	1.0 M BICINE	Sodium hydroxide
9.0	1.0 M BICINE	Sodium hydroxide
9.1	1.0 M BICINE	Sodium hydroxide
9.2	1.0 M BICINE	Sodium hydroxide
9.3	1.0 M BICINE	Sodium hydroxide