StockOptions™

Succinic Acid Buffer Kit (pH 4.3 - 6.6)

HAMPTON RESEARCH
Solutions for Crystal Growth

User Guide **HR2-249**

StockOptions™ Succinic Acid 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 Succinic Acid buffer reagent is carefully titrated using Sodium hydroxide. StockOptions Succinic Acid is comprised of 24 unique reagents covering the pH range of 4.3 to 6.6 in 0.1 pH unit increments.

Suggested Use

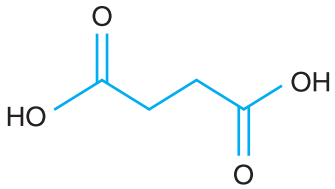
StockOptions Succinic Acid is designed to help researchers improve the speed, accuracy, precision, and quality of the formulation of crystallization screen solutions and crystallization optimization solutions. Researchers can use the individual StockOptions reagents to conveniently formulate custom screen solutions or standard screen solutions from Hampton Research kits such as Slice pH™. StockOptions Succinic Acid reagents can also be used to create solutions for the refinement and optimization of preliminary crystallization conditions. Finally, StockOptions Succinic Acid reagents can be used to create accurate, precise, reproducible, high quality solutions for the production of single crystals. Utilizing the reagents in the StockOptions Succinic Acid buffer kit it is possible to formulate and screen 24 unique pH levels.

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

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

Specifications

Useful pH Range: 4.3 - 6.6



Buffer Reagent: Succinic acid

$C_4H_6O_4$	M_r 118.09	CAS No [110-15-6]	EC No 203-740-4

Titrated with: Sodium hydroxide

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

Example

Make a custom 10 ml screen reagent of:

Solution Composition:
30% w/v Polyethylene glycol 8,000,
0.1 M Succinic acid pH 6.0

Suggested Stock Solutions:
50% w/v Polyethylene glycol 8,000 (HR2-535),
1.0 M Succinic acid pH 6.0 (StockOptions Succinic Acid)

1. Pipet 3 ml of deionized, sterile filtered water into the tube.
2. Pipet 1 ml of 1.0 M Succinic acid pH 6.0 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

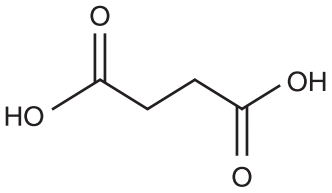
Inquiries regarding StockOptions Succinic Acid Buffer Kit reagent formulation, interpretation of screen results, optimization strategies and general inquiries regarding crystallization are welcome. Please e-mail, fax, or telephone your request to Hampton Research. Fax and e-mail Technical Support are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

Hampton Research
34 Journey
Aliso Viejo, CA 92656-3317 U.S.A.
Tel: (949) 425-1321 • Fax: (949) 425-1611
Technical Support e-mail: tech@hrmail.com
Website: www.hamptonresearch.com

Tube #	pH ◊	Buffer	Titrant
1.	4.3	1.0 M Succinic acid	Sodium hydroxide
2.	4.4	1.0 M Succinic acid	Sodium hydroxide
3.	4.5	1.0 M Succinic acid	Sodium hydroxide
4.	4.6	1.0 M Succinic acid	Sodium hydroxide
5.	4.7	1.0 M Succinic acid	Sodium hydroxide
6.	4.8	1.0 M Succinic acid	Sodium hydroxide
7.	4.9	1.0 M Succinic acid	Sodium hydroxide
8.	5.0	1.0 M Succinic acid	Sodium hydroxide
9.	5.1	1.0 M Succinic acid	Sodium hydroxide
10.	5.2	1.0 M Succinic acid	Sodium hydroxide
11.	5.3	1.0 M Succinic acid	Sodium hydroxide
12.	5.4	1.0 M Succinic acid	Sodium hydroxide
13.	5.5	1.0 M Succinic acid	Sodium hydroxide
14.	5.6	1.0 M Succinic acid	Sodium hydroxide
15.	5.7	1.0 M Succinic acid	Sodium hydroxide
16.	5.8	1.0 M Succinic acid	Sodium hydroxide
17.	5.9	1.0 M Succinic acid	Sodium hydroxide
18.	6.0	1.0 M Succinic acid	Sodium hydroxide
19.	6.1	1.0 M Succinic acid	Sodium hydroxide
20.	6.2	1.0 M Succinic acid	Sodium hydroxide
21.	6.3	1.0 M Succinic acid	Sodium hydroxide
22.	6.4	1.0 M Succinic acid	Sodium hydroxide
23.	6.5	1.0 M Succinic acid	Sodium hydroxide
24.	6.6	1.0 M Succinic acid	Sodium hydroxide

◊ pH is the measured pH at 25.0 degrees Celsius of the 1.0 M Succinic acid solution.
pH adjustment performed using Sodium hydroxide.

Buffer Reagent: Succinic acid



$C_4H_6O_4$ M_r 118.09 CAS No [110-15-6] EC No 203-740-4 $pKa_1 = 4.20$, $pKa_2 = 5.60$

Titrated with: Sodium hydroxide

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

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Aliso Viejo, CA 92656-3317 U.S.A.
Tel: (949) 425-1321 • Fax: (949) 425-1611
e-mail: tech@hrmail.com
Website: www.hamptonresearch.com

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