RNAlater Recipe

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Abstract

This is a storage solution that stabilizes and protectsRNA while inactivating RNase

Citation: Rex Malmstrom RNAlater Recipe. **protocols.io**
dx.doi.org/10.17504/protocols.io.c56y9d
Published: 12 Oct 2015

Guidelines

Note: If you read the patent application, they refer to an ammonium sulfate concentration of 700g per L. What they really mean is add 700g to 1L (including EDTA and sodium citrate at conc. listed above), so you end up with more than 1L total volume.

Note: The pH should be ~7 using this recipe. The patent states that pH can range from 4-8; the preferred commercial pH is 5.2; I use pH 7 for bacterioplankton samples, but pH can be lowered by adding H_2SO_4.

Note: Since this is a storage solution for RNA, use high quality reagents ("molecular biology" grade) when preparing the buffer.

Protocol

Preparation

Step 1.
Prepare 0.5 M EDTA

PROTOCOL

. 0.5M EDTA

CONTACT: Bonnie Poulos

Step 1.1.
Add 186.1 g EDTA disodium salt dihydrate (Mallinckrodt 4931) to 700 ml MilliQ water

Step 1.2.
Stir to dissolve

Step 1.3.
Bring pH to 8.0 with NaOH (50ml of 10M NaOH or 23g NaOH pellets)

Step 1.4.
Bring volume to 1L with MilliQ water

Step 1.5.

Autoclave

Preparation

Step 2.
Prepare 1 M Sodium citrate

PROTOCOL

. 1M Sodium citrate

CONTACT: Bonnie Poulos

Step 2.1.
Add 294 g Na Citrate dihydrate (Mallinckrodt 0754-12) to 700ml MilliQ water

Step 2.2.
Stir to dissolve

Step 2.3.
Bring volume to 1L with MillQ water

Step 2.4.
Autoclave

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Step 3.
In a 2 or 3 L flask mix 1,400 mL MilliQ water with 60 mL 0.5M EDTA and 37.5 mL 1M sodium citrate with stirring

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Step 4.
While continuing to stir the solution, add 1.05 kg (= 1,050 g) Ammonium sulfate in 100 g amounts.

REAGENTS

- Ammonium sulfate 97061-184 by Contributed by users

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Step 5.
Stir 30 min on hot plate set to low

DURATION
00:30:00

NOTES
Bonnie Poulos 22 Jun 2015
It is possible that a tiny amount ammonium sulfate will not go into solution. This is okay; the most important thing is to have a saturated ammonium sulfate solution. Crystals should dissolve in ~30min.

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Step 6.
Allow solution to cool at room temperature for at least 30min, but overnight on bench is best

DURATION
00:30:00

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Step 7.
Filter solution through 0.2 µm filter to remove particles

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Step 8.
Store at room temp or at 4°C