

Sep 07, 2020

Glass Milk preparation

DOI

dx.doi.org/10.17504/protocols.io.bkzwx7e

Martin Codyre¹

¹University of Dublin, Trinity College

MC2



Martin Codyre

University of Dublin, Trinity College

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DOI: dx.doi.org/10.17504/protocols.io.bkzwx7e

Protocol Citation: Martin Codyre 2020. Glass Milk preparation. **protocols.io**
<https://dx.doi.org/10.17504/protocols.io.bkzwx7e>

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Protocol status: In development

We are still developing and optimizing this protocol

Created: September 07, 2020

Last Modified: September 07, 2020

Protocol Integer ID: 41750

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Materials

MATERIALS

 Tris, 1 M, pH 8.0 **Ambion Catalog #AM9855G**

 Hydrochloric acid **Sigma – Aldrich Catalog #320331-500ML**

 UltraPure™ 0.5 M EDTA pH 8.0 **Thermo Fisher Scientific Catalog #15575020**

 Silica 325 Mesh

STEP MATERIALS

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 Tris, 1 M, pH 8.0 **Ambion Catalog #AM9855G**

 UltraPure™ 0.5 M EDTA pH 8.0 **Thermo Fisher Scientific Catalog #15575020**

 Silica 325 Mesh

 Hydrochloric acid **Sigma – Aldrich Catalog #320331-500ML**

 MilliQ water

325 mesh silicon dioxide (Spectrum Chemicals - SI108) Silica 325 mesh is a flint glass powder available from ceramic shops https://www.spectrumchemical.com/OA_HTML/chemical-products_Silicon-Dioxide-325-Mesh-Crystalline_SI108.jsp?section=16930

Millipore Sigma 320331 HCl


Protocol materials


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 MilliQ water


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Safety warnings

 dry silica powder should not be inhaled

Glass Milk Preparation


7h

1 To prepare glass milk, 325 mesh silicon dioxide (Spectrum Chemicals - SI108)


45m

 Silica 325 Mesh

was combined with an excess volume of 10% HCl (~3 N HCl) made from combining 37%

 Hydrochloric acid **Merck MilliporeSigma (Sigma-Aldrich) Catalog #320331-500ML**

and MilliQ water (Millipore) in a fume hood

 MilliQ water

Equipment

Fume hood

NAME

Fume hood

TYPE

Generic

BRAND


Unknown


SKU


Safety information


Note

(dry silica powder should not be inhaled).

- 2 After acid washing for  04:00:00 Possibly 4 to 8 hours at room temperature 6h

 Room temperature , silica was pelleted by spinning two minutes at


 5000 rpm, 00:02:00 5,000 xg and the supernatant was poured off.
- 3 The pellet was resuspended in four pellet volumes of 1h

 MilliQ water


and then pelleted again.

This wash step was repeated for a total of six washes.
- 4 30m

The pellet was then washed with four pellet volumes of 10 mM Tris HCl, pH = 8 (ThermoFisher Scientific AM9855G)

 Tris, 1 M, pH 8.0 **Ambion Catalog #AM9855G**

and 1 mM EDTA (ThermoFisher Scientific 15575020),

 UltraPure™ 0.5 M EDTA pH 8.0 **Thermo Fisher Scientific Catalog #15575020**

and pelleted.
- 5 Finally, the pellet was resuspended in 1 pellet volume of 10 mM Tris HCl and 1 mM EDTA and autoclaved. This autoclave step is likely superfluous, however, as acid washes should render the beads free of contaminants. The resulting 50% glass milk slurry can be stored at room temperature. 30m

Before use, care must be taken to vigorously resuspend the particles as they begin to settle quickly.