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Glass Milk preparation

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Protocol status: In development

We are still developing and optimizing this protocol

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Materials

MATERIALS

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

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

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

☒ Silica 325 Mesh

STEP MATERIALS

☒ 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 **Merck MilliporeSigma (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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☒ UltraPure™ 0.5 M EDTA pH 8.0 **Thermo Fisher Scientific Catalog #15575020**

Troubleshooting

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 30m
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.

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