



Sep 07, 2020

Glass Milk preparation

Martin Codyre¹¹University of Dublin, Trinity College

In Development

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

MC2

Martin Codyre
University of Dublin, Trinity College

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>

LICENSE

————— This is an open access protocol distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

CREATED

Sep 07, 2020

LAST MODIFIED

Sep 07, 2020

PROTOCOL INTEGER ID

41750

MATERIALS

NAME	CATALOG #	VENDOR
Tris, 1 M, pH 8.0	AM9855G	Ambion
Hydrochloric acid	320331-500ML	Sigma – Aldrich
UltraPure™ 0.5 M EDTA pH 8.0	15575020	Thermo Fisher Scientific
Silica 325 Mesh		

STEPS MATERIALS

NAME	CATALOG #	VENDOR
MilliQ water		
Tris, 1 M, pH 8.0	AM9855G	Ambion
UltraPure™ 0.5 M EDTA pH 8.0	15575020	Thermo Fisher Scientific
Silica 325 Mesh		
Hydrochloric acid	320331-500ML	Sigma – Aldrich

MATERIALS TEXT

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

EQUIPMENT

NAME	CATALOG #	VENDOR
Fume hood	Unknown	

SAFETY WARNINGS

dry silica powder should not be inhaled

DISCLAIMER:

DISCLAIMER – FOR INFORMATIONAL PURPOSES ONLY; USE AT YOUR OWN RISK
THIS IS A TEST OF PROTOCOLS.IO

The protocol content here is for informational purposes only and does not constitute legal, medical, clinical, or safety advice, or otherwise; content added to protocols.io is not peer reviewed and may not have undergone a formal approval of any kind. Information presented in this protocol should not substitute for independent professional judgment, advice, diagnosis, or treatment. Any action you take or refrain from taking using or relying upon the information presented here is strictly at your own risk. You agree that neither the Company nor any of the authors, contributors, administrators, or anyone else associated with protocols.io, can be held responsible for your use of the information contained in or linked to this protocol or any of our Sites/Apps and Services.

Glass Milk Preparation

7h

45m

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



Silica 325 Mesh

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



Hydrochloric acid

by Sigma – Aldrich

Catalog #: 320331-500ML

and MilliQ water (Millipore) in a fume hood



MilliQ water



Fume hood

Fume hood

Generic

Unknown



(dry silica powder should not be inhaled).

- 2 After acid washing for ⌚ **04:00:00 Possibly 4 to 8 hours** at room temperature 📍 **Room temperature** , silica^{6h} 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
by Ambion
Catalog #: AM9855G

and 1 mM EDTA (ThermoFisher Scientific 15575020),



UltraPure™ 0.5 M EDTA pH 8.0
by 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^{30m} 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.