

Resource Summary Report

Generated by [dkNET](#) on Sep 16, 2026

Direct wastewater RNA extraction via the "Milk of Silica (MoS)" method - A companion method to "Sewage, Salt, Silica and SARS-CoV-2 (4S)"

DOI:10.17504/protocols.io.biwfkfbn

Type: Protocol

Proper Citation

Oscar Whitney, Basem Al-Shayeb, Alex Crits-Cristoph, Mira Chaplin, Vinson Fan, Hannah Greenwald, Adrian Hinkle, Rose Kantor, Lauren Kennedy, Anna Maurer, Robert Tjian, Kara L. Nelson, UC Berkeley Wastewater-based epidemiology consortium 2020. Direct wastewater RNA extraction via the "Milk of Silica (MoS)" method - A companion method to "Sewage, Salt, Silica and SARS-CoV-2 (4S)". protocols.io
dx.doi.org/10.17504/protocols.io.biwfkfbn

Protocol Information

URL: <https://dx.doi.org/10.17504/protocols.io.biwfkfbn>

Authors: Oscar Whitney, Basem Al-Shayeb, Alex Crits-Cristoph, Mira Chaplin, Vinson Fan, Hannah Greenwald, Adrian Hinkle, Rose Kantor, Lauren Kennedy, Anna Maurer, Robert Tjian, Kara L. Nelson, UC Berkeley Wastewater-based epidemiology consortium

Group: Coronavirus Method Development Community

Summary: The following protocol describes the "4S" (Sewage, Salt, Silica and SARS-CoV-2) workflow applied to using dry silica powder as an RNA-binding matrix instead of silica spin columns. This offers an even more economical alternative, requiring only centrifugation to extract RNA from wastewater. This procedure is intended to be carried out in a BSL2+ laboratory space, with precautions when handling raw wastewater samples.

Affiliations: University of California, Berkeley, Tjian & Darzacq laboratory, University of California, Berkeley, Banfield & Doudna laboratory, University of California, Berkeley, Banfield laboratory, University of California, Berkeley, Nelson laboratory, University of California, Berkeley, Tjian & Darzacq laboratory, University of California, Berkeley, Nelson laboratory, University of California, Berkeley, Nelson laboratory, University of California, Berkeley, Nelson laboratory, University of California, Berkeley, Nelson laboratory, University of California, Berkeley, Tjian & Darzacq laboratory, University of California, Berkeley, HHMI, University of California, Berkeley, University of California, Berkeley

Version: 1

Publication Date: 2020

Proper Citation: Oscar Whitney, Basem Al-Shayeb, Alex Crits-Cristoph, Mira Chaplin, Vinson Fan, Hannah Greenwald, Adrian Hinkle, Rose Kantor, Lauren Kennedy, Anna Maurer, Robert Tjian, Kara L. Nelson, UC Berkeley Wastewater-based epidemiology consortium 2020. Direct wastewater RNA extraction via the "Milk of Silica (MoS)" method - A companion method to "Sewage, Salt, Silica and SARS-CoV-2 (4S)". protocols.io dx.doi.org/10.17504/protocols.io.biwfkfbn

Record Creation Time: 20210329T220517+0000

Record Last Update: 20210329T220836+0000

Data and Source Information

Source: