

Resource Summary Report

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Extraction of RNA from Wastewater Primary Solids Using a Direct Extraction Method for Downstream SARS-CoV-2 RNA Quantification

DOI:10.17504/protocols.io.bi6skhee

Type: Protocol

Proper Citation

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Protocol Information

URL: <https://dx.doi.org/10.17504/protocols.io.bi6skhee>

Authors: Stephanie Loeb, Katy Graham, Marlene Wolfe, Krista Wigginton, Alexandria Boehm

Group: Coronavirus Method Development Community, Wastewater-based epidemiology working group

Summary: Overview This SOP describes pre-analytical procedures to be followed for the isolation and identification of SARS-CoV-2 RNA in primary settled solids samples from wastewater treatment plants. This protocol should be paired with our digital PCR protocol. The protocol follows the approximate workflow: Separate and aliquot sample (~4 hrs) Spike with BCoV (~1 hr) Extract RNA (~ 12 hours total, may be split into 2-3 steps/days) Inhibitor removal (~1 hr) Biosafety Concerns Concentration and extraction procedures that utilize raw samples must adhere to strict Biosafety Level 2+ procedures. These procedures should be performed in a dedicated room. Downstream products may be handled using standard laboratory safety guidelines. This protocol was developed by Stephanie Loeb, Katy Graham, Marlene Wolfe, Krista Wigginton, and Alexandria Boehm at Stanford University and University of Michigan.

Affiliations: Stanford University, Stanford University, Stanford University, University of Michigan, Stanford University

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