

# Swabbing the Urban Environment - A Pipeline for Sampling and Detection of SARS-CoV-2 From Environmental Reservoirs

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## Citation

Rojas, M.I., Giles, S.S., Little, M., Baron, R., Livingston, I., Dagenais, T.R.T., Baer, J., Cobián-Güemes, A.G., White, B., Rohwer, F. Swabbing the Urban Environment - A Pipeline for Sampling and Detection of SARS-CoV-2 From Environmental Reservoirs. *J. Vis. Exp.* (170), e62379, doi:10.3791/62379 (2021).

## Date Published

April 9, 2021

## DOI

10.3791/62379

## URL

jove.com/video/62379

## Materials

| Name                                             | Company             | Catalog Number    | Comments                      |
|--------------------------------------------------|---------------------|-------------------|-------------------------------|
| <b>SMP, LIMS, and community outreach:</b>        |                     |                   |                               |
| Authentication Application Programming Interface | Google              | Google Sign-In    |                               |
| Commercial hosting platform                      | GoDaddy             |                   |                               |
| Data Charting Application Programming Interface  | Google              | Google Charts     |                               |
| Database software                                | MySQL               |                   |                               |
| Delivery route planning software                 | Circuit             | Circuit for Teams |                               |
| Free email service                               | Google              | Google Email      |                               |
| Geospatial Application Programming Interface     | Google              | Google Maps API   |                               |
| Multilingual neural machine translation service  | Google              | Google Translate  |                               |
| Online form                                      | Google              | Google Form       |                               |
| Operating system                                 | Linux               |                   |                               |
| Web and database development                     | Big Rose Web Design |                   |                               |
| Web server software                              | Apache              |                   |                               |
| <b>Sampling kit:</b>                             |                     |                   |                               |
| Coolers                                          | Coleman (Amazon)    | B00363X3F2        | Cost (US\$) per 100 rxns: 70  |
| Gallon Ziploc bags                               | Solimo (Amazon)     | B07BJ495GL        | Cost (US\$) per 100 rxns: 18  |
| Glycerol (hand sanitizer)                        | FischerScientific   | G33-4             | Cost (US\$) per 100 rxns: 9   |
| Ice packs                                        | Ice-Brix (Amazon)   | B075GLD3X1        | Cost (US\$) per 100 rxns: 110 |
| Isopropanol (hand sanitizer)                     | FischerScientific   | AA36644K7         | Cost (US\$) per 100 rxns: 43  |
| KN95 masks                                       | Echo-Sigma          | Echo-Sigma        | Cost (US\$) per 100 rxns: 400 |

|                                                                     |                            |              |                               |
|---------------------------------------------------------------------|----------------------------|--------------|-------------------------------|
| Paper for Protocols and Trizol Safety Sheet                         | Office Depot               | 348037       | Cost (US\$) per 100 rxns: 36  |
| 30 mL spray bottles (SDS and hand sanitizer)                        | Anyumocz (Amazon)          | B07T64FHXR   | Cost (US\$) per 100 rxns: 80  |
| RNase, DNase, DNA & PCR inhibitors free Microcentrifuge tubes       | Genesee Scientific         | 22-281       | Cost (US\$) per 100 rxns: 83  |
| Sample ID solvent resistant labels                                  | LABTAG                     | XST-10C1-1WH | Cost (US\$) per 100 rxns: 68  |
| Swiffer WetJet pads (swabs)                                         | Swiffer (Amazon)           | B001F0RBT2   | Cost (US\$) per 100 rxns: 8   |
| Toothpicks                                                          | Kitchen Essential (Amazon) | B00PBK4NG6   | Cost (US\$) per 100 rxns: 8   |
| Trizol Reagent (guanidinium isothiocyanate solution - GITC), not LS | Invitrogen                 | 15596018     | Cost (US\$) per 100 rxns: 40  |
| Tube boxes                                                          | Genesee Scientific         | 21-119       | Cost (US\$) per 100 rxns: 180 |
| Small Ziploc bags                                                   | Ziploc (Amazon)            | B01LRKEI9K   | Cost (US\$) per 100 rxns: 8   |
| Zebra Thermal Transfer Desktop Printer                              | Zebra                      | GK420t       |                               |
| Total Sampling kit Cost (US\$) per 100 rxns: 1,160                  |                            |              |                               |
| <b>Trizol RNA extraction:</b>                                       |                            |              |                               |
| Ammonium Acetate RNase-free                                         | Invitrogen                 | AM9070G      | Cost (US\$) per 100 rxns: 2   |
| Chloroform                                                          | FisherScientific           | C298-500     | Cost (US\$) per 100 rxns: 2   |
| GlycoBlue (glycogen 15 mg/mL)                                       | Invitrogen                 | AM9515       | Cost (US\$) per 100 rxns: 80  |
| Molecular-grade absolute (200 proof) Ethanol                        | FisherScientific           | BP2818500    | Cost (US\$) per 100 rxns: 30  |
| Molecular-grade Isopropanol                                         | FisherScientific           | BP2618500    | Cost (US\$) per 100 rxns: 3   |
| TURBO DNA-free Kit                                                  | Invitrogen                 | AM1907       | Cost (US\$) per 100 rxns: 110 |
| <b>Multiplexed colorimetric RT-LAMP:</b>                            |                            |              |                               |
| Guanidine Hydrochloride                                             | Alfa Aesar                 | AAJ6548522   | Cost (US\$) per 100 rxns: 1   |
| RT-LAMP E1-Primers                                                  | IDT                        | n/a          | Cost (US\$) per 100 rxns: 7   |
| RT-LAMP N2-Primers                                                  | IDT                        | n/a          | Cost (US\$) per 100 rxns: 7   |
| Synthetic SARS-CoV-2 RNA                                            | ATCC                       | VR-3276SD    | Cost (US\$) per 100 rxns: 14  |
| WarmStart Colorimetric LAMP 2X Master Mix with UDG                  | NEB                        | M1800S       | Cost (US\$) per 100 rxns: 210 |
| Eppendorf Mastercycler Pro Thermal Cycler                           | Eppendorf                  | 950030010    |                               |
| Total Trizol RNA extraction + LAMP Cost (US\$) per 100 rxns: 470    |                            |              |                               |
| <b>Kit for RNA extraction:</b>                                      |                            |              |                               |
| QIAamp DSP Viral RNA Mini Kit                                       | Qiagen                     | 61904        | Cost (US\$) per 100 rxns: 570 |
| <b>RT-qPCR:</b>                                                     |                            |              |                               |
| Synthetic SARS-CoV-2 RNA                                            | ATCC                       | VR-3276SD    | Cost (US\$) per 100 rxns: 14  |
| TaqMan Fast Virus 1-Step Master Mix                                 | Applied Biosystems         | 4444432      | Cost (US\$) per 100 rxns: 180 |
| SARS-CoV-2 (2019-nCoV) N1,N2 Primers and Probes                     | IDT                        | 10006713     | Cost (US\$) per 100 rxns: 20  |
| qScript XLT 1-Step RT-qPCR ToughMix                                 | Quantabio                  | 95132-100    |                               |
| QuantiNova Pathogen                                                 | Qiagen                     | 208652       |                               |
| QuantiNova Probe                                                    | Qiagen                     | 208352       |                               |
| UltraPlex 1-Step ToughMix                                           | Quantabio                  | 95166-100    |                               |
| CFX96 Touch Real-Time PCR Detection System                          | BioRad                     | 1855196      |                               |
| Kit for RNA extraction + RT-qPCR Cost (US\$) per 100 rxns: 790      |                            |              |                               |
| <b>RT-PCR:</b>                                                      |                            |              |                               |

|                                |            |          |  |
|--------------------------------|------------|----------|--|
| SuperScript IV One-Step RT-PCR | Invitrogen | 12594025 |  |
| <b>Lab cleanup:</b>            |            |          |  |
| DNAZap                         | Invitrogen | AM9890   |  |
| RNAZap                         | Invitrogen | AM9780   |  |