

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

Maria I. Rojas<sup>1,2</sup>, Steven S. Giles<sup>3</sup>, Mark Little<sup>1,2</sup>, Rafael Baron<sup>1,2</sup>, Isabella Livingston<sup>1,2</sup>, Taylor R. T. Dagenais<sup>3</sup>, Jason Baer<sup>1,2</sup>, Ana G. Cobián-Güemes<sup>1,2</sup>, Brandie White<sup>1,2</sup>, Forest Rohwer<sup>1,2</sup>

<sup>1</sup>Department of Biology, San Diego State University <sup>2</sup>Viral Information Institute, San Diego State University <sup>3</sup>Big Rose Web Design, LLC

## Corresponding Author

Maria I. Rojas  
mariaisabelrm@gmail.com

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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	