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FireLAMP Protocol

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1 *Works for me* dx.doi.org/10.17504/protocols.io.bkz7kx9n

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41759

MATERIALS TEXT

Reagent or Consumable	Supplier	Catalog #	Cost per item (e.g., cost of a tube of enzyme)
Text	Text	Numeric	Numeric
SARS-CoV-2 Primers	IDT	Custom	\$100.00
SARS-CoV-2 Probes	IDT	Custom	\$280.00
Internal Control Primers	IDT	Custom	\$100.00
Internal Control Probes	IDT	Custom	\$280.00
WarmStart® LAMP Kit (DNA & RNA)	NEB	E1700L	\$844.00
Antarctic thermolabile UDG	NEB	M0372L	\$310.00
RNase Inhibitor, Murine	NEB	M0314L	\$286.00
dUTP	NEB	N0459S	\$60.00
Elution solution	Firebird Biomolecular Sciences, LLC	Custom	\$0.50

1.5 mL microcentrifuge tubes	Genesee Scientific	24-281	\$25.90
Genie® Strips	Optigene	OP-0008-500	\$528.15

Genie® II	Optigene	GEN2-01	\$10,000.00
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EQUIPMENT

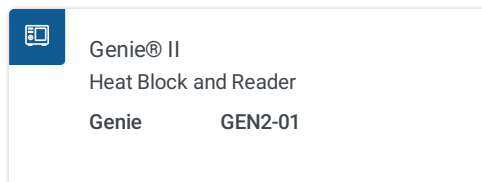
NAME	CATALOG #	VENDOR
Genie® II	GEN2-01	

1 SETTING UP THE GENIE II

30s

1.1 Plug In

15s



- 1.2 Set the block temperature to **65 °C**. Make sure temperatures are reached to set temperature before placing the assay tubes into heat-block for amplification.

15s

2 Setting up Workplace with Reagents

4m

- 2.1 Take **Red Strips** and **Green Strips** out of freezer and thaw for 1-2 min at room temperature

2m

- 2.2 Set **Blue Tubes** in work area

10s

- 2.3 Set up biohazard disposal

10s

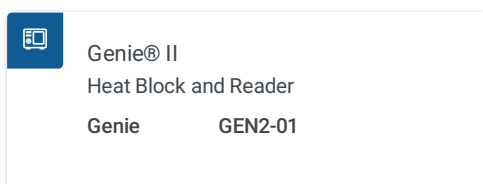
3 Take a swab

2m

- 3.1 Hand testee a sterile swab, packaged in 15 mL falcon tube, and instruct patient on use

30s

- 3.2 Testee to remove swab from 15 mL falcon tube 10s
- 3.3 Testee inserts swab into each nasal cavity, rotating for 10 seconds 30s
- 3.4 Testee returns swab to 15 mL falcon tube 30s
- 3.5 Testee hands tube to supervisor 10s
- 4 Preparing a **sample batch** (up to 8 samples different testees) 5m
- 4.1 Open sample swab with caution and transfer swab to a **blue tube**, which contains elution solution and mix/swirl the swab 4-5 times. 30s
- 4.2 Discard the swab in a biohazardous waste container 5s
- 4.3 Pipette **5 µl** of eluted swab sample from the **blue tube** into a tube on the **red strip**, which contains SARS-CoV-2 master mix. Pipette up and down 2 times to mix assay components, then close the lid 20s
- 4.4 Pipette **5 µl** of eluted swab sample from **blue tube** into a tube on the **green strip**, which contains the internal control master mix. **NOTE: samples from each patient should be put in the same tube number on the red strip and green strip** 20s
- 4.5 Repeat steps 4.1 through 4.4 for all samples in the batch
- 4.6 Open the 10s



. Place the red batch into Block A and the green batch into Block B. Close the Genie II.

- | | | |
|-----|---|-----|
| 5 | Running a sample | 30m |
| | | |
| 5.1 | On the Genie II touch screen, select blocks A and B | 10s |
| | | |
| 5.2 | Run program called "FireLAMP" | 10s |
| | | |
| 5.3 | Wait for incubation to complete (~30 minutes for negative samples) | 30m |
| | | |
| 6 | Interpretation of results | 1m |
| | | |
| 6.1 | Touch results tab. | 10s |
| | | |
| 6.2 | Record results based on the "results column" column for block A and block B. Positive result in the block with the red strip (typically block A) indicate a positive result for COVID19 . Positive results in the block with the green strip (typically block B) indicate that the sample was taken correctly . | 10s |
| | | |
| 6.3 | Record results | 20s |
| | | |
| 7 | Preparing for Next Block | 5m |
| | | |
| 7.1 | Discard all used blue tubes , red strips , and green strips in biohazard container | 20s |
| | | |
| 7.2 | Wait 5 minutes for Genie II to cool before starting analysis of a new batch. | 5m |