

Sep 08, 2020

FireLAMP Protocol

DOI

dx.doi.org/10.17504/protocols.io.bkz7kx9n

Daniel Benner¹, Ozlem Yaren¹

¹FireBird Diagnostics



Daniel Benner

Create & collaborate more with a free account

Edit and publish protocols, collaborate in communities, share insights through comments, and track progress with run records.

Create free account

OPEN  ACCESS



DOI: <https://dx.doi.org/10.17504/protocols.io.bkz7kx9n>

Protocol Citation: Daniel Benner, Ozlem Yaren 2020. FireLAMP Protocol. **protocols.io**

<https://dx.doi.org/10.17504/protocols.io.bkz7kx9n>

License: This is an open access protocol distributed under the terms of the **[Creative Commons Attribution License](#)**, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

Protocol status: Working

We use this protocol and it's working

Created: September 08, 2020

Last Modified: September 08, 2020

Protocol Integer ID: 41759

Keywords: firelamp protocol, protocol

Materials

	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
--	-----------	----------	---------	-------------

Troubleshooting



- 1 SETTING UP THE GENIE II 30s
 - 1.1 Plug In 15s

Equipment	
Genie® II	NAME
Heat Block and Reader	TYPE
Genie	BRAND
GEN2-01	SKU
 - 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 **Geen 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 μ L 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 μ L 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



Equipment

Genie® II

NAME

Heat Block and Reader

TYPE

Genie

BRAND

GEN2-01

SKU

. 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