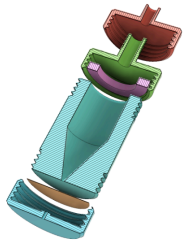
Sep 08, 2020 Version 2

covid 19 indirect detection thru rise of 100nm filter air resistance V.2



DOI
https://dx.doi.org/10.17504/protocols.io.bkznkx5e

Ladislav Nevery

Coronavirus Method De... XPRIZE Rapid Covid Tes... 1 more workspace

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Protocol status: In development
We are still developing and optimizing this protocol

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Last Modified: September 08, 2020

Protocol Integer ID: 41742

Keywords: covid, pressure, test, covid 19 virus particle, filter air resistance, passing saliva sample, saliva of infected person, virus particle, raising filter air resistance, saliva sample, measured filter area, covid, high virus density, filter, filter area, high count of particle, saliva, threshold psi value, infected person, reaching threshold psi value, virus, particle,

Disclaimer

Abstract

By passing saliva sample thru 200nm filter to remove particles larger than 120nm covid 19 virus particles and concentrating resulting fluid to very small 1 mm2 area of 100nm filter. Pores in this small area of100nm filter should be clogged up fast raising filter air resistance. Due to high virus density 5.2 log10 ml saliva of infected person should clogg filter much faster than healthy person. Test is setup in such way that act of compressor automatically turning off after reaching threshold PSI value will indicate high count of particles larger than 100nm of being present in measured filter area.

Attachments

ZIP

PrototypeV8Printable...

5MB

Materials

MATERIALS

- pragopor 10 **pragochema**
- pragopor 8 **pragochema**
- 3d filament
- rubber seal 24×20×2

STEP MATERIALS

- pragopor 10 **pragochema**
- rubber seal 24×20×2
- Target2™ Nylon Syringe Filter, 0.2µm, 30mm **Thermo Fisher Catalog #**F2500-2

Protocol materials

- Target2™ Nylon Syringe Filter, 0.2µm, 30mm **Thermo Fisher Catalog #**F2500-2
- pragopor 10 **pragochema**
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- 3d filament
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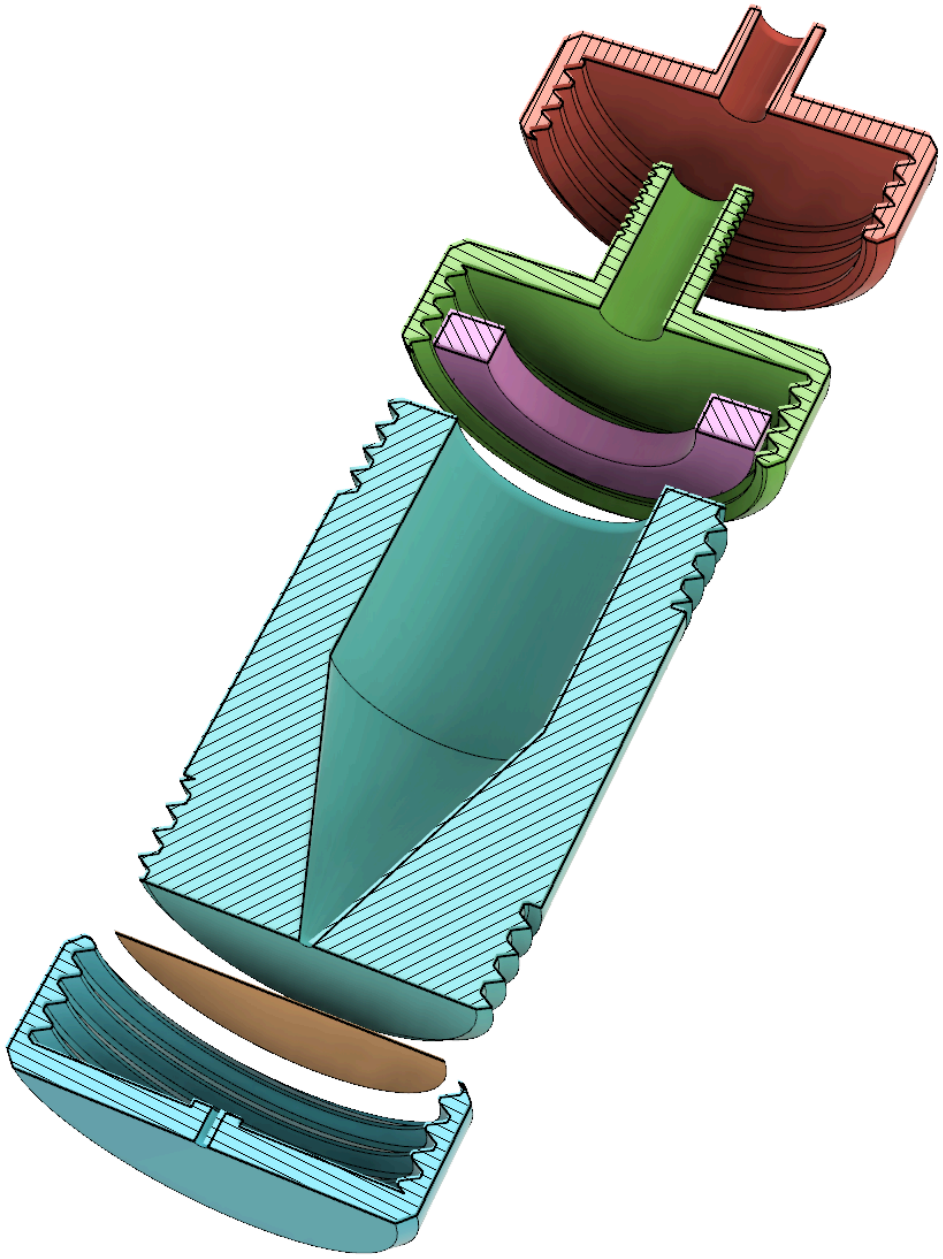
1 3d print all required parts.



2 insert any 100nm 24mm filter like for example

pragopor 10 **pragochema**

between blueparts and close with red cup

5m

rubber seal 24×20×2

.Place any comon commercial 200nm filter between syringe and red syringe input port. colors are on attached image above

Target2™ Nylon Syringe Filter, 0.2µm, 30mm **Thermo Fisher Catalog #**F2500-2

3 pass sample thru both 200nm and 100nm filter by applying manual pressure on syringe. 5m

4 now that 1 mm2 area of 100nm filter has enough pores clogged up with median 120nm sized virus particles. replace red syringe cap with green compressor input cap.Use any compressor wich can turn itself offwhen reaching set pressure. I used 5m

Equipment

Xiaomi Portable Compressor	NAME
Portable Compressor	TYPE
Xiaomi	BRAND
00000000	SKU
https://www.amazon.com/Xiaomi-Portable-Compressor-Detection-Motorcycle/dp/B07XZCLGVQ	LINK

set compressor to turn off after reaching threshold amount of psi and turn the compressor on.

Expected result

On sample without covid 19 virus threshold psi should not be reached

. If no compressor with proper psi sensitivity is available then monitor pressure in concentration chamber by any external sensitive manometer