



Version 3

Sep 11, 2020

covid 19 indirect detection thru rise of 100nm filter fluid resistance V.3

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In Development

dx.doi.org/10.17504/protocols.io.bmaqk2dw

Coronavirus Method Development Community

XPRIZE Rapid Covid Testing

1 more workspace



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ABSTRACT

By passing saliva sample thru 150nm filter to remove particles larger than avg 125nm sized covid 19 virus particles and concentrating resulting fluid to very small 1 mm² area of 110nm filter. Pores in this small area should be clogged up fast raising filter air/fluid 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 we let gravity pass 2l of fluid thru clogged filter and record rate of drops from its bottom as audio on mobile phone placed bellow glass cup. rate of drops thru clogged filter should be measurably slower than clean filter.

THIS PROTOCOL ACCOMPANIES THE FOLLOWING PUBLICATION

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ATTACHMENTS

[DropRate.zip](#)

DOI

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PROTOCOL CITATION

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42032

MATERIALS

NAME

CATALOG #

VENDOR

| NAME | CATALOG # | VENDOR |
|-------------------------------------|-----------|--------|
| pragopor 9 | | |
| pragopor 10 | | |
| 120nm nanoparticles | | |

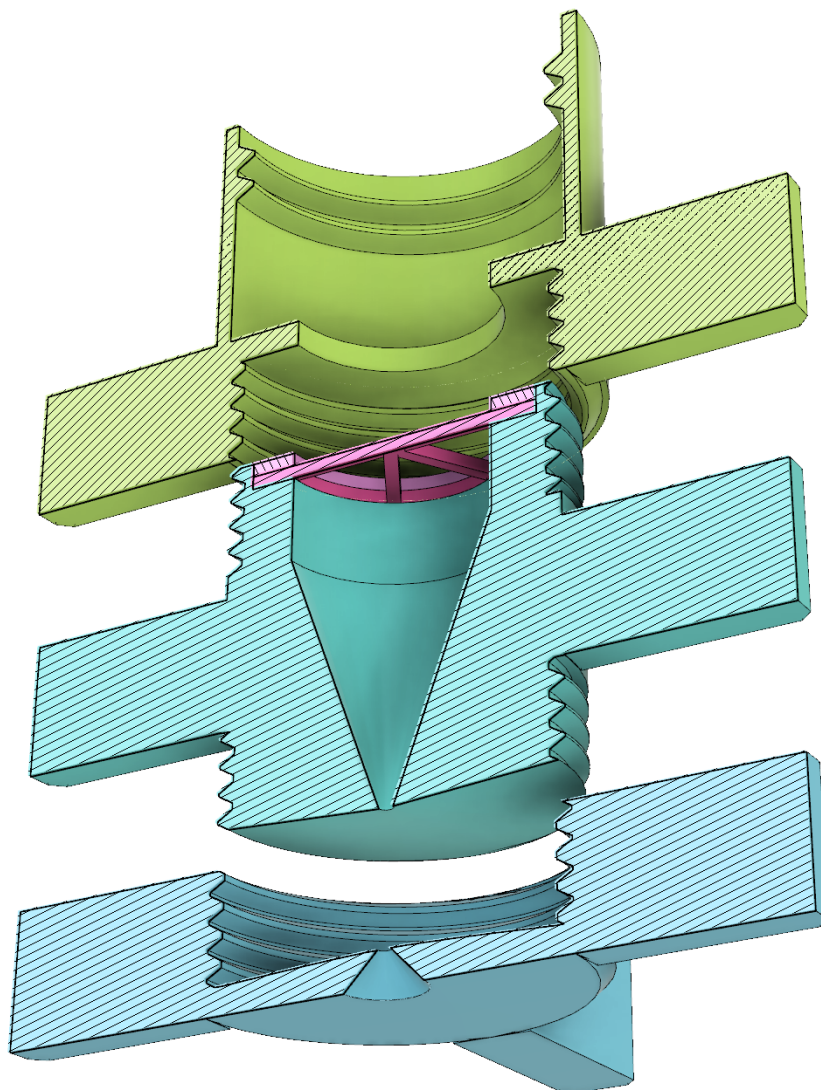
STEPS MATERIALS

| NAME | CATALOG # | VENDOR |
|--------------------------------------|-----------|----------------------------|
| 3d print filament 8m | | |
| pragopor 10 | | pragochema |
| pragopor 9 | | |
| glass cup | | |
| mobile phone | | |
| 2l soda bottle | | |
| 120nm nanoparticles | | |

DISCLAIMER:

DISCLAIMER – FOR INFORMATIONAL PURPOSES ONLY; USE AT YOUR OWN RISK

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3d print all required parts



3d print filament 8m

2 place 24mm ideally 110nm pc or nylon membrane filter between blue parts. I used what I had



pragopor 10

by pragochema

[View](#)



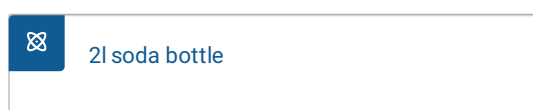
0.24eur piece

- 3 place 34mm ideally 150nm membrane filter between red parts. I used what I had



- 4 install green saliva holder

- 5 .attach empty



and squeeze until all saliva passes thru both filters

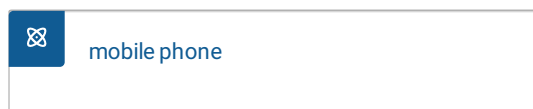
- 6 remove 2l bottle remove red parts including filter. clean

- 7 fill 2l with clean fluid and reinstal it.

- 8 place whole assembly over glass cup



with bottle on top. place mobile phone bellow glass cup and start audio recording to count and record sounds of drops.



- 9 stop audio recording. fill sample holder in step 4 with fluid with



in concentration resembling covid19 as

5.2log10ml and repeat whole process once more with new filters [go to step #2](#)

10 compare distance between drop sounds in all recordings.



drop frequency with 120nm nanoparticle clogged filter should be measurably different