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

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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.

ATTACHMENTS

DropRate.zip
1. 3d print all required parts
2. Place a 24mm ideally 110nm PC or nylon membrane filter between blue parts. I used what I had.

   - pragopor
   - 10 pragochema
   - 0.24eur piece

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

   - pragopor 9 Contributed by
   - users
   - 0.24eur piece
4. Install green saliva holder.

5. Attach 2l soda bottle Contributed by users and squeeze until all fluid passes thru both filters.

6. Remove 2l bottle remove red parts including filter. Clean.

7. Fill 2l with clean fluid and reinstall it.

8. Place whole assembly over glass cup Contributed by users with bottle on top. Place mobile phone bellow glass cup and start audio recording to count and record sounds of drops. Mobile phone Contributed by users.

9. Fill sample holder in step 4 with fluidid with 120nm nanoparticles Contributed by users in concentration resembling covid19 as 5.2log10ml and repeat whole process once more.

10. Compare three recordings.

   Expected result

   Drop frequency with 120nm nanoparticle clogged filter should be measurably different.