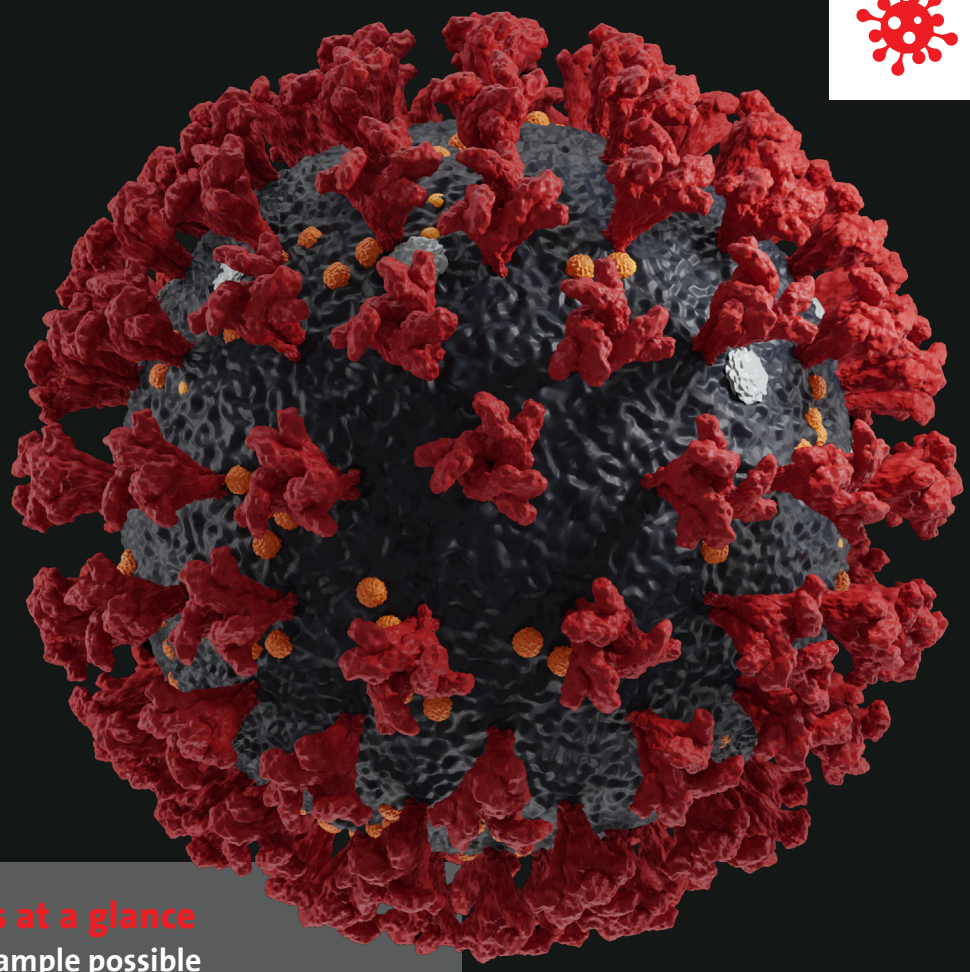
SARS-CoV-2 LAMP Solution

Easy and fast molecular detection

Molecular DX

COVID-19
Coronavirus



Your advantages at a glance

- Use of saliva as sample possible
- Simple and fast RNA extraction in < 5 min
- Easy workflow with results in < 45 min
- No dry ice shipment required
- Application in remote settings possible

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Human
Diagnostics Worldwide

SARS-CoV-2 LAMP Solution

"The SARS-CoV-2 dry LAMP method is a reliable method for rapid diagnosis of COVID-19. The dry LAMP method overcomes the requirement for strict cold-chain transportation and storage of reagents. Therefore, this method is expected to be a useful POC test in developing countries where COVID-19 is spreading."[1]

Patient-friendly – Saliva as a sample possible in addition to the usual swabs

1. Painless sample collection
2. High sensitivity with saliva[2]
3. Easy to perform
4. Reduced risk of infection[2]

LAMP – Simple, rapid and specific

- Loop-mediated isothermal amplification (LAMP) enables the amplification at one temperature
- Very high specifity, due to the use of four primers recognizing six distinct regions on the target gene
- Its robustness, high sensitivity and the ease of use make LAMP an excellent and nearly failsafe solution to improve the diagnostic even in remote areas
- By targeting the N gene and the RNA-dependent RNA polymerase (RdRp) gene of the virus, even the current SARS-CoV-2 mutations can be detected

COVID-19
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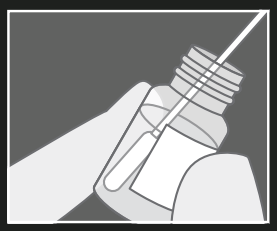
Clinical performance

Source	Sample number	Sample type	Reference Method	Sensitivity	Specificity
In-House study[3]	10	Saliva	RT-PCR	90.0 %	100.0 %
Kitagawa Y. et al. (2020)[1]	76	Nasopharyngeal swabs	RT-PCR	97.4 %	100.0 %
Higashimoto Y. et al. (2020)[4]	24	Nasopharyngeal swabs	RT-PCR	94.0 %	96.0 %

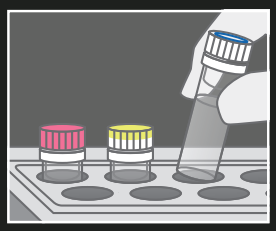
User-friendly – Simple and fast workflow

1. RNA extraction*

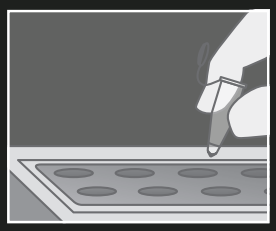


Stir the swab with sample in the Loopamp extraction reagent about 10 times.

2. Reagent preparation

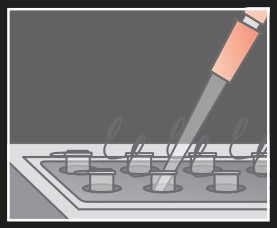


Bring the amplification reagent to room temperature. Place the primer mixture, positive and negative control on a cooled aluminum rack.

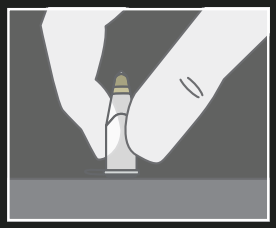


Place the reaction tubes into the precooled aluminium rack.

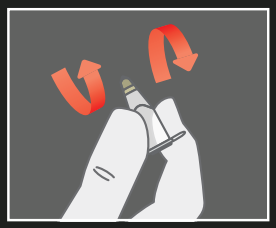
3. Reagent dispensing and sample addition



Dispense 15 µl of primer mix to all reaction tubes. Add 10 µl of sample solution and control and close the cap.

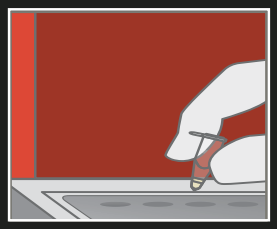


Invert the reaction tubes and incubate them for 2 min on the aluminum rack or use HuMax ITA for incubation.

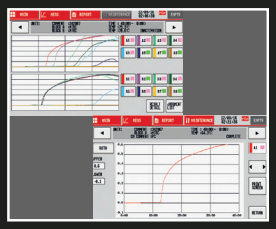


Mix the solution by inverting the reaction tubes 5 times.

4. Amplification and detection



Insert the reaction tubes into the HumaTurb A**



After 35 min at 62.5°C, assess the reaction result. A rising curve on the HumaTurb C or a green fluorescence with a UV lamp indicate positive results.

* As an alternative extraction method the Qiagen QIAamp Viral RNA Mini Kit can be used
** As an alternative a PCR thermal cycler or a heating block can be used

SARS-CoV-2 LAMP product overview

Requires minimum equipment and reagents

Loopamp™ SARS-CoV-2 Detection Kit — REF: LMC403

Nucleic acid amplification method by Loop-mediated Isothermal amplification (LAMP) for the qualitative in vitro detection of nucleic acids from SARS-CoV-2

> 1 x 48 tests
> Storage: 2...8°C
> Shelf life: 12 months

Loopamp™ Viral RNA Extraction Kit — REF: LMC801

A designated extraction reagent for easy extraction of SARS-CoV-2 virus from throat, nasopharyngeal swab and saliva

> 1 x 48 tests
> Storage: 2...30°C
> Shelf life: 18 months

HumaTurb C + A — REF: 963200

Real-time detection of turbidity
HumaTurb C = Control unit displaying real-time turbidity measurements
HumaTurb A = Amplification unit

> Up to 96 tests/run
> Flexible data transfer via USB and LIS connectivity; built-in printer

HuMax ITA — REF: 980000

Bench-top centrifuge with preinstalled program for the incubation and mixing of Loopamp™ reaction tubes

> Up to 16 tubes/run

Solar Panel (100W) — REF: 18965/100

Foldable solar panel for charging the battery system

Portable Battery System (220V, 300W) — REF: 18965/220

Sufficient to perform up to three complete runs

Find more information about COVID-19 related products at
www.human.de/covid-19

1. Kitagawa Y. et al. 2020 Evaluation of rapid diagnosis of novel coronavirus disease (COVID-19) using loop-mediated isothermal amplification. J Clin Virol. 2020 Aug; 129: 104446
2. Wyllie AL. et al. (2020) Saliva or Nasopharyngeal Swab Specimens for Detection of SARS-CoV-2. N Engl J Med 2020; 383:1283-1286
3. Loopamp™ SARS-CoV-2 Detection Kit. Package insert; article number LMC403
4. Higashimoto Y. et al. 2020 Dry loop–mediated isothermal amplification assay for detection of SARS-CoV-2 from clinical specimens. medRxiv 2020.09.29.20204297; doi: https://doi.org/10.1101/2020.09.29.20204297

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