

Coronavirus: a rapid test for professional users provides clarity in ten minutes

RT-PCR still is the gold standard in testing for the novel SARS-CoV-2 virus, which causes COVID-19 (colloquially known as 'coronavirus') infection. However, there will soon be limits to laboratory capacity and test components. In-vitro diagnostics can help. The NADAL® COVID-19 IgG/IgM rapid test from nal von minden GmbH delivers results within 10 minutes. Medium-term, the antibody test can also be used to determine the so-called "herd immunity". The expert for in-vitro diagnostics is currently also working at full speed on the provision of an antigen test. It will be available in the near future. Both tests are urgently needed and can contribute significantly to the management of the pandemic.

Overburdened laboratories, long waits for results, untraceable chains of infection – until now, doctors have had to resort to expensive PCR tests, leaving them dependent on laboratory results in the diagnosis of COVID-19. Until results are available, patients have to be quarantined to reduce the risk of infection to others. Moreover, errors in swabbing or transport can distort PCR results. If there is any doubt, a second test is then recommended. The same applies to follow-up care.

Testing for coronavirus is also a massive problem in economic terms. Companies are closing their doors prophylactically as soon as an employee is suspected of infection with COVID-19. This has been followed by the closure of schools and nursery schools, the cancellation of major events and the sealing off of entire cities. The highest priority is breaking the chain of infection.

In the current situation, an in-vitro diagnostic rapid test can be a great help, and nal von minden GmbH – a specialist in the field of in-vitro diagnostics for almost 40 years – has managed to bring a rapid test for the SARS-CoV-2 coronavirus to market in record time. This test can be carried out quickly and easily, on site in the GP's surgery. Within ten minutes, the chromatographic lateral flow immunoassay provides qualitative detection of antibodies against SARS-CoV-2 (IgG and IgM) from fingertip blood, plasma or serum samples. After the appearance of symptoms, the body takes three to seven days to produce these specific antibodies in the fight against the virus. If the NADAL® COVID-19 IgG/IgM rapid test for said antibodies is positive, this means that the body is clearly dealing with the virus and the treating physician can take appropriate measures. If the result is negative, appropriate precautions must be taken and the test must be repeated or re-tested after the incubation period. This is because a primary infection is characterized by the presence of detectable IgM three to seven days after the onset of symptoms. These antibodies remain detectable for many days and subsequent IgG for many months – even if the virus is no longer detectable in PCR tests. The presence of IgG antibodies can also indicate an already healed infection with COVID-19, indicating the presence of immunity.

The rapid test is simple and robust and requires no special training or qualification. All that is needed is a small finger prick. The resulting drop of blood is collected with a pipette and applied to the test cassette. After adding two drops of a washing solution and waiting for ten minutes, easily readable coloured lines become visible, indicating whether antibodies against SARS-CoV-2 are present. The NADAL® COVID-19 IgG/IgM rapid test from nal von minden GmbH has a diagnostic sensitivity of 91.8% and a diagnostic specificity of 99.2%. The test has been evaluated with clinical samples in comparison to a leading commercially available PCR. It is recommended to perform another test two weeks after an infection is first suspected. In this way, even asymptomatic individuals from high-risk areas can be tested to determine with a high probability whether they are infected with SARS-CoV-2. In addition, the simplicity of the test allows for much broader testing of all those possibly affected and thus faster and more targeted action, taking pressure off laboratories.

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