

WHITE PAPER: CORONA Testing possibilities

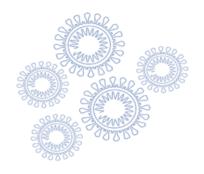




CORONA VIRUS

The Coronaviridae are a large family of viruses that cause illness in both humans and animals. Symptoms may vary from a common cold and the flu to more severe ones such as the Middle East Respiratory Syndrome (MERS) and the Severe Acute Respiratory Syndrome (SARS). The recent pandemic outbreak originates from a new type of Corona virus, called SARS-CoV-2 causing the disease 'Corona Virus Disease' (COVID-19).

SARS-CoV-2 and COVID-19



Preceding the recent outbreak in Wuhan, China, in December of last year, SARS-CoV-2 virus and COVID-19 were unknown. Apart from flulike symptoms, such as coughing, fever and tiredness, infection with SARS-CoV-2 can also lead to relatively mild conditions such as a running nose and a sore throat. A significant amount of patients seems to develop more severe complications and needs to be hospitalised with difficulty in breathing or heart problems. It often concerns elderly people or patients with an already existing medical condition, whereby the already weakened immune system can't get a proper hold on the viral infection. Moreover, some people who came in contact with the virus, remain asymptomatic, however they are still capable in spreading it to others.

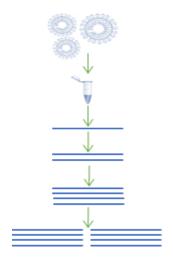
Spreading of SARS-CoV-2

Spread and transfer of coronavirus takes place by means of small droplets from mouth or throat when people cough or sneeze. These tiny droplets, containing the viral particles, can be inhaled by other people or can land on nearby surfaces. When people touch these surfaces by hand and then reach for their mouth or nose, transfer of the virus can occur.

SARS-CoV-2 on surfaces

At this moment, research is still inconclusive on the survival time of the virus on surfaces. Depending on the conditions, such as the type of surface (rough, smooth), the ambient temperature and relative humidity of the surroundings, it might range from a few hours to several days. Therefore, intensive cleaning of potentially infected surfaces is of utmost importance to prevent contamination

Analyses on SARS-CoV-2



By means of surface swabs, it is possible to sample viral particles of SARS-CoV-2. Testing on surface samples is challenging. Infected human tissue from e.g. nose and throat contains a large amount of virus particles. This implies that by sneezing or coughing the virus particles are dispersed over a wide area. By using special buffer solution and cooled transport and special concentration steps there is an optimal situation to detect the virus.

The analytical testing technique we use is called PCR (Polymerase Chain Reaction). It enables us to extract the viral RNA from the swab and to purify it from interfering substances such as human cells and enzymes. The purified RNA is than multiplied and after some other intermediate processing with special markers, ready for detection.

What is TLR offering

TLR offers you a sampling test kit, containing a comprehensive instruction, sterile swabs and test tubes containing buffer solution that will inactivate the virus after swabbing took place. These test tubes should be stored in a cool place and sent as soon as possible to TLR for analysis.

For more information please contact us





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