



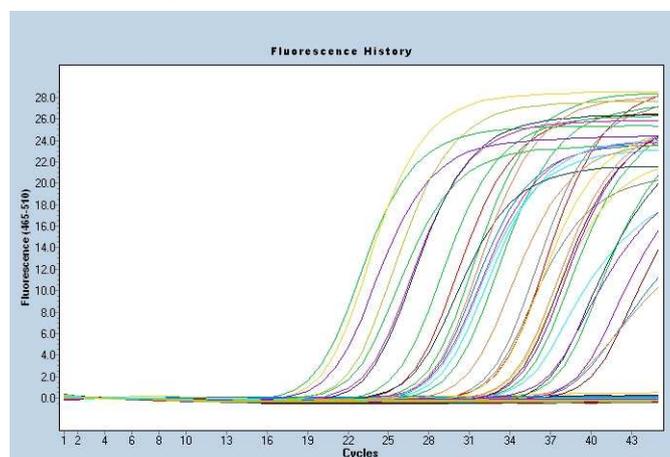
## SARS-CoV-2 (COVID-19) factsheet

There are seven known coronaviruses that infect humans, named for the crown-like spikes on their surface. The current coronavirus outbreak (COVID-19) started in Wuhan, China in December 2019 and rapidly spread across the world. The causal agent is a novel coronavirus which was given the name SARS-CoV-2 (originally named 2019-nCoV). As of 11<sup>th</sup> April 2020, 1,610,909 cases have been confirmed globally (99,690 deaths) including 70,276 in the UK (8958 deaths). Preliminary data suggests a very recent shift into humans with the closest related coronaviruses found in bats and pangolins. There are now more than 100 publicly available whole genome sequences for SARS-CoV-2 and this has allowed researchers to design specific RT-PCR assays for the virus.

The main symptoms of infection are fever, dry cough, dyspnea, headache and pneumonia. Loss of sense of smell and/or taste are also increasingly common symptoms being associated with SARS-CoV-2 infection. These symptoms can progress to respiratory failure and death, especially in elderly people or those with underlying health conditions. The disease is transmitted by human-to-human contact although some studies have suggested that the virus will survive on surfaces for up to 3 days.

In the UK, the government has set out the aim of performing 100,000 tests for SARS-CoV-2 a day. Since the 20<sup>th</sup> February 2020, Micropathology Ltd. have been testing for SARS-CoV-2 in respiratory samples (received from both NHS and private clinics) and we are currently processing 500-1000 samples a day with same-day results. As of 12<sup>th</sup> April 2020, we have tested 9198 samples with 2862 positive detections (31%). Testing utilises a specific probe-based RT-PCR assay, targeting the N gene (see Figure 1 for an example of the results), based on primers published by the American CDC. This assay has been fully validated (awaiting UKAS accreditation) and has proven to be both highly specific to SARS-CoV-2 and very sensitive, allowing effective detection in samples with low viral loads.

The recommended sample type for this assay is a throat swab which must be taken by a medical professional. Self-taken swabs are not acceptable. Nasopharyngeal swabs and combined throat and nose swabs are acceptable but nose swabs alone are not recommended. NPA, BAL and sputum are also acceptable sample types.



**Figure 1:** Detection of SARS-CoV-2 by RT-PCR. Samples with an amplification curve are all positive for SARS-CoV-2.