



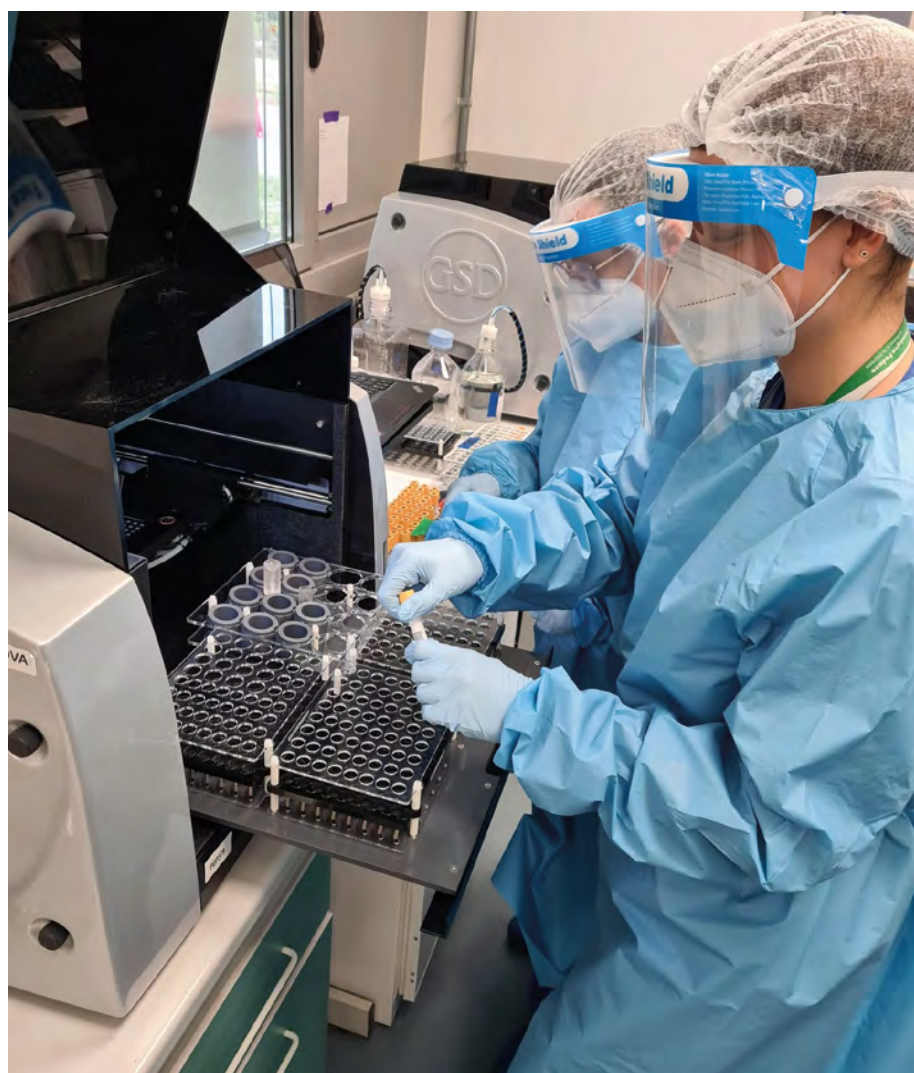
Bolstering the assay arsenal to investigate COVID-19

The COVID-19 pandemic has highlighted the importance of biosurveillance to understand, control and limit the spread of human diseases. In response to the pandemic, the laboratories at PTP Science Park in Lodi, Italy, quickly enhanced their set-up, introducing various assays to gain a deeper understanding of the virus. Researchers now not only diagnose COVID-19, but also measure anti-SARS-CoV-2 antibody levels after infection and vaccination to learn about the pathogenesis of the disease and how our immune systems respond to infection.

PTP SCIENCE PARK

PTP Science Park is a business consortium that operates in a wide range of sectors, including agri-food, life sciences and bioeconomics. The company's position at the forefront of scientific research allowed it to ramp up its diagnostic and research capabilities in response to the COVID-19 pandemic. The science hub is still engaged in various projects, but its extensive research facilities, staff and resources have been focused towards the battle against COVID-19

on multiple fronts. Stefano di Giovine, COO of PTP Science Park, explained: "At the beginning of the COVID-19 pandemic in March 2020, PTP Science Park already had the facilities and the ability to analyze the virus. We started with a small number of samples but, thanks to Tecan's state-of-the-art automation solutions – such as the Freedom EVO® workstation – we already had the capacity to evaluate up to 2,000 samples per day. More recently, in March this year, we started



Laboratory automation has been essential to scale up testing at PTP Science Park

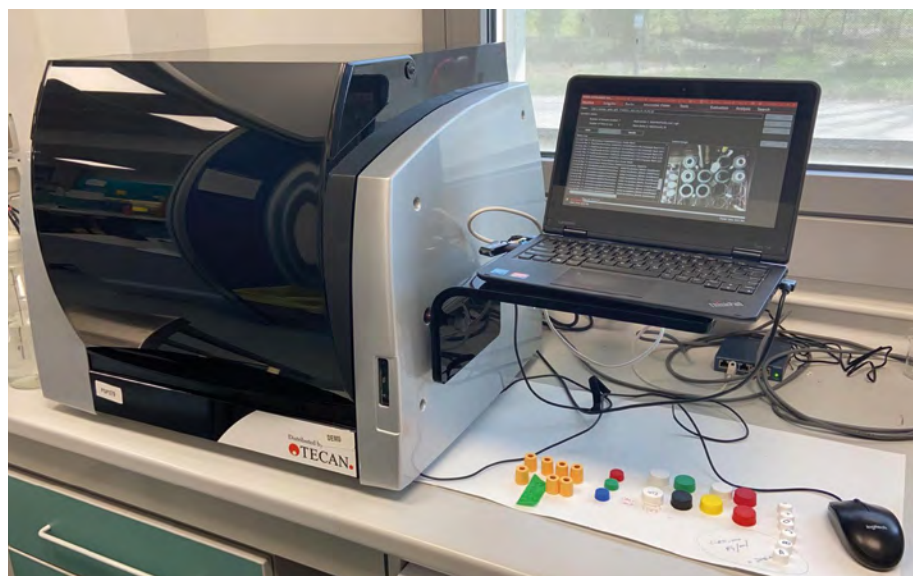
“ Tecan’s instruments and assay kits have allowed us to act swiftly in response to the pandemic and really make an impact. ”

a drive-in facility to enable us to take in even more samples. To date, we have processed about 160,000 samples, and are the primary laboratory in the Lodi area – supporting care homes and hospitals.”

Located within PTP Science Park is the SMEL laboratory, which was added to the regional crisis unit in response to the pandemic. It is authorized to operate as a specialized medical laboratory, and carries out various tests using a biosurveillance toolkit that includes qPCR for diagnostic testing of oropharyngeal swabs, and quantitative serological assays for SARS-CoV-2 IgG, IgM and IgA antibodies, to evaluate the immune response post-infection or post-vaccination.

Stefano continued: “Our activity with SARS-CoV-2 is not limited to diagnostics. We are one of the few laboratories in the region authorized to sequence and report new variants, partly thanks to Tecan’s assays and the DreamPrep™ NAP workstation. We also have a program funded by the Lombardy Region and the Cariplo Foundation called ‘COVID in pets’, to investigate whether animals can catch and transmit the virus.”

“The demand for serological testing to check for antibodies in response to the vaccine has increased dramatically. Using Tecan’s SARS-CoV-2 S1/RBD IgG Ab ELISA, we can detect antibodies against the virus spike protein’s receptor binding domain, which allows us to examine variations in the immune response to the virus. For example, we have found that some people gain immunity after contracting COVID-19, while others have been infected up to three times as they fail to generate



The Thunderbolt® analyzer provides fully automated, benchtop ELISA testing

immunizing antibodies. We expect a real boom in testing requests in the coming months with all of the clinical studies underway.”

“The scope of our research continues to expand as the pandemic progresses. Recently we started a small, local research project to evaluate the levels of IgG antibodies against the virus before and after vaccination. Again, using Tecan’s SARS-CoV-2 S1/RBD IgG Ab ELISA we can accurately gather this data and find variations in peak antibody levels following vaccination.”

“Tecan’s instruments and assay kits have allowed us to act swiftly in response to the pandemic and really make an impact, especially in the region. Ongoing viral surveillance with PCR testing and ELISA kits will help us discover new variants and continue building our knowledge on how our immune systems respond to infection,” concluded Stefano.

To find out more about Tecan’s SARS-CoV-2 S1/RBD IgG Ab ELISA kits, visit

www.tecan.com/interrogate-covid-19-with-tecan-sars-cov-2-igg-elisa

To learn more about PTP Science Park, go to www.ptp.it