

# A Dried Blood Spot protocol for high-throughput quantitative analysis of SARS-CoV-2 RBD serology based on the Roche Elecsys system

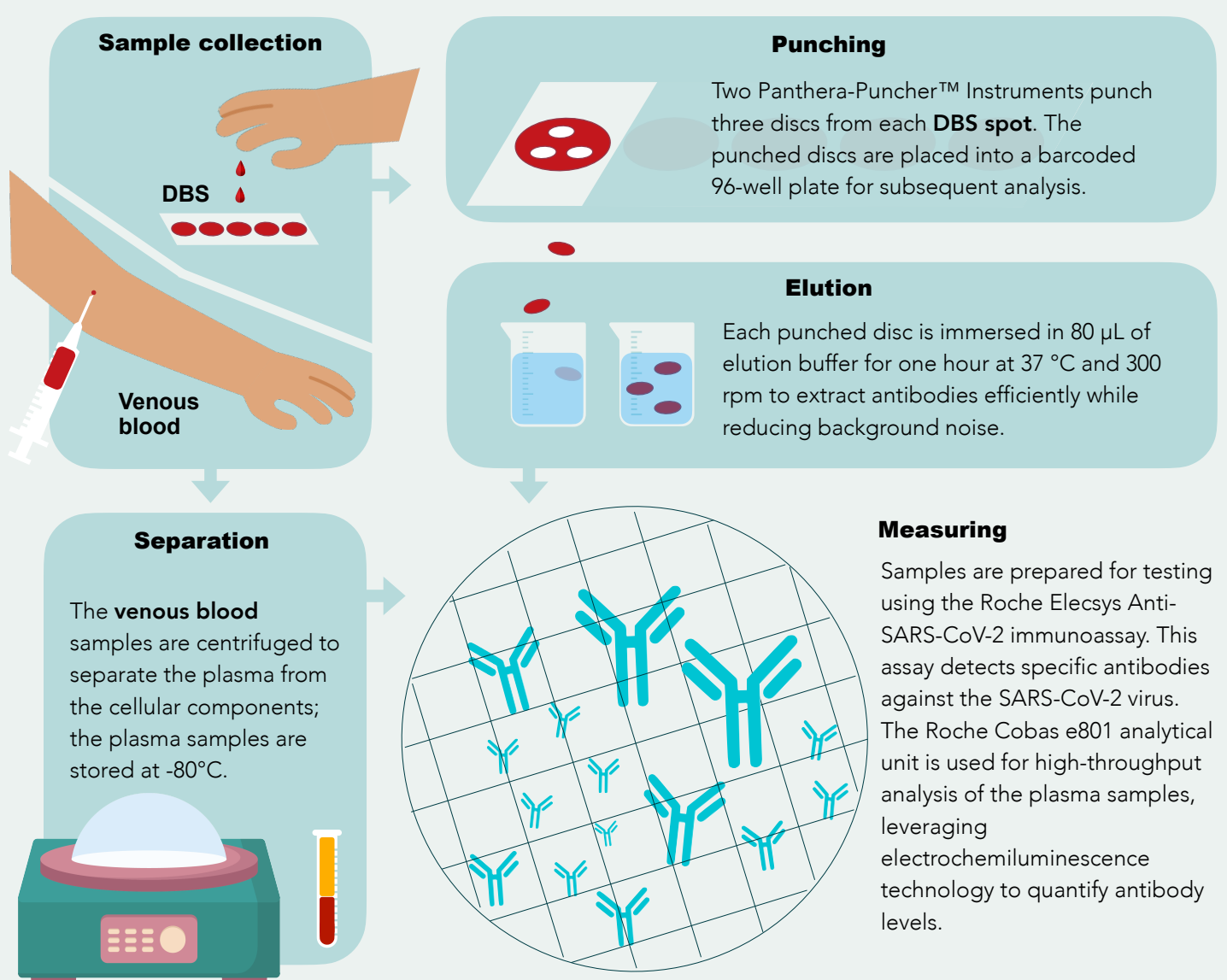
Noemi Castelletti, Ivana Paunovic, Raquel Rubio-Acero, Jessica Beyerl, Michael Plank, Christina Reinkemeyer, Inge Kroidl, Ivan Noreña, Simon Winter, Laura Olbrich, Christian Janke, Michael Hoelscher, Andreas Wieser, KoCo19/ORCHESTRA Working Group. *Microbiol Spectr*, 2024, doi: 10.1128/spectrum.02885-23

Since the onset of the SARS-CoV-2 pandemic in 2020, serological testing – particularly antibody measurement – has been crucial for monitoring infection spread and assessing vaccine efficacy in the population.

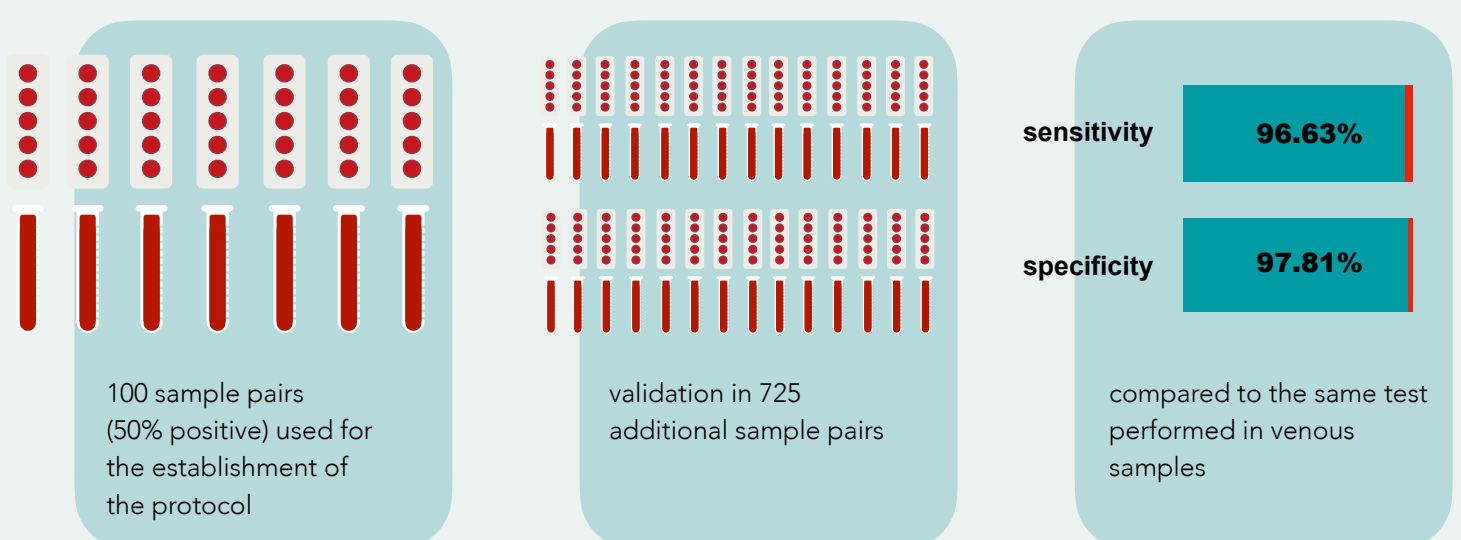
Traditional venous blood collection poses logistical challenges, particularly for large-scale studies. To overcome this, we developed a high-throughput protocol for quantifying SARS-CoV-2 anti-spike antibodies using capillary blood samples (Dried Blood Spot, DBS).

This semi-automated process, validated in 825 matched DBS and venous samples, complements the anti-nucleocapsid serosurveys already established in our laboratory. This approach enables quantitative tracking of antibody titers following SARS-CoV-2 infection and vaccination in large populations.

## The process



## The validation



“ We demonstrated relative changes in titers over time in several individuals and in a longitudinal cohort over four follow-ups.

Quantitative measurements are accurate enough to follow titer dynamics in populations following SARS-CoV-2 infection and vaccination.

Illustrations: sentavio, freepik

Read more at [orchestra-cohort.eu](https://orchestra-cohort.eu)



The project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 101016167. The whole project was supported by the Bavarian State Ministry of Science and the Arts, by the University Hospital of the LMU (KUM), the Helmholtz Center Munich, the Universities of Bonn and Bielefeld, the German Ministry for Education and Research, the Medical Biodefense Research Program of the Bundeswehr Medical Service, and Roche Diagnostics.