

GET AHEAD IN THE RACE TO UNDERSTAND THE CORONAVIRUS

Creoptix™ WAVEsystem

Robust and disposable microfluidics for interaction analysis on viruses: from recombinant proteins to whole particles in pure blood plasma



Coronavirus outbreak is posing a threat to our health, economy and mobility. The Creoptix WAVEsystem offers a platform for studying the binding kinetics of antibodies to viral proteins based on the sensitive Grating-Coupled Interferometry (GCI) technology. With no-clog and disposable sensor chips, the WAVEsystem enables the robust characterization of kinetics on both small molecules and biologics. You can work safely and avoid cross-contamination between experiments, as well as be confident about your kinetic data and accelerate your vaccine research and development.

UNDERSTANDING CORONAVIRUS

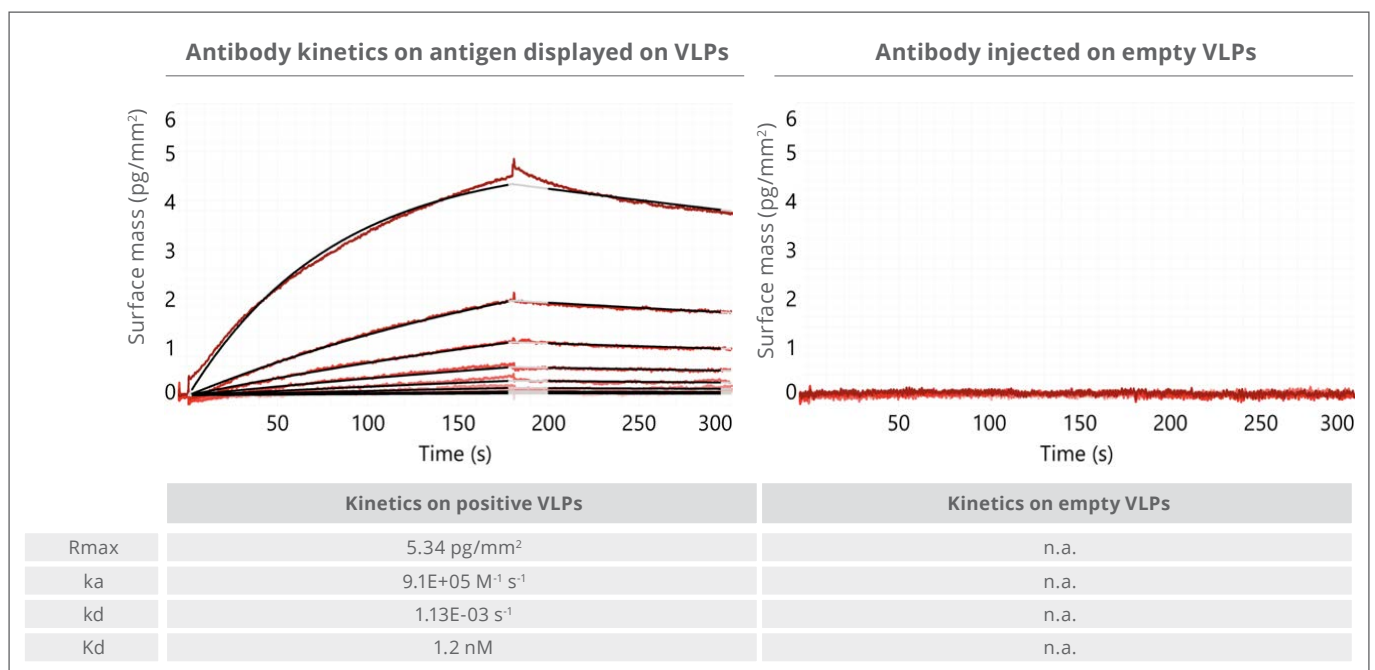
The threat posed by the current COVID-19 epidemic demands immediate research and the rapid development of vaccines and novel antiviral treatments. The processes of viral entry into cells as well as recognition by the immune system are based on biomolecular interactions, and thorough characterization of these interactions is key in the race to understand and contain the current COVID-19 outbreak, as well as preventing future ones. With its proprietary Grating-Coupled Interferometry (GCI) technology and disposable no-clog microfluidics, the WAVEsystem provides a solution to measure kinetic data for a wide range of biomolecular interactions, including:

- ✔ Binding studies of neutralizing antibodies to viral proteins
- ✔ Characterization of viral epitopes
- ✔ Quantification of neutralizing antibody titers in serum
- ✔ Batch monitoring of recombinant vaccine production

WAVESYSTEM

The WAVEsystem combines superior resolution in response and time with a crude sample robustness normally only possible with plate-based assays (ELISA). This provides dynamic, label-free analysis of molecular interactions in a wide range of biofluids, with full kinetic data that includes both affinity evaluation and highly accurate measurement of association and dissociation constants. With the entire microfluidics being contained in the disposable sensor chip, [the WAVEchip](#), the risk of cross-contamination of potentially hazardous* material between experiments is minimized.

The WAVEsystem has been successfully used to characterize kinetics on virus-like particles (VLPs), which represent an effective vaccine platform with potential to induce immune responses. An example of a monoclonal antibody binding onto proteins embedded in VLPs is shown in the figure below.



Full kinetic characterization of an antibody binding to its antigen (protein) displayed on VLPs

VLPs have gained popularity in the field of recombinant vaccine development, as native virus particles can be better mimicked by the display of multiple viral epitopes. In this example, full kinetics of an antibody binding to its antigen displayed on VLPs are shown. VLPs displaying the antigen as well as negative empty VLPs (both from crude VLP preparations) were captured via wheat germ agglutinin (WGA) onto the WAVEchip sensor surface. The antibody was injected at multiple concentrations and the adjusted binding curves were globally fit with a 1:1 Langmuir model. The VLPs and the antibody were provided by an undisclosed collaborator.

*Hazardous material should always be handled according to biosafety rules in a properly ranked BSL lab/facility.

The Creoptix WAVE system is for research use only.



WAVECHIPS

With proprietary microfluidics design in a single disposable sensor chip, the WAVEsystem allows researchers to avoid cross-contamination of potentially hazardous* materials between experiments. Thanks to a no-clog microfluidic design, binding kinetics can now be studied in biofluids – including serum and plasma. WAVEchips can be exchanged within minutes for fresh, clean microfluidics without the need for special technical support, surpassing traditional Surface Plasmon Resonance (SPR) systems.



WAVEchips can be exchanged within minutes

READ WHAT OUR CUSTOMERS ARE SAYING ON [SELECTSCIENCE](#)



“Robust with multiple applications. Dependable results with high sensitivity.”

James Schouten
Mologic

KEY TAKEAWAYS

Understand biomolecular interactions and accelerate your vaccine research and development with the Creoptix WAVEsystem:

Closer to real life conditions: full binding kinetics in serum, plasma and other biofluids.

Reduce maintenance costs: no-clog and robust microfluidics.

Maximize instrument time: fresh microfluidics within minutes.

GREAT FOR

- ✓ Vaccine development and characterization
- ✓ Virus titer quantification in serum
- ✓ Batch monitoring of recombinant vaccine production

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ONE STEP AHEAD IN THE RACE TO UNDERSTAND CORONAVIRUS WITH ROBUST MICROFLUIDICS

To stay up-to-date with our latest developments, [visit www.creoptix.com](http://www.creoptix.com)

For inquiries, contact us through sales@creoptix.com



LABEL-FREE DATA
LIKE YOU'VE NEVER SEEN BEFORE



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