biomolecular interaction analysis

Label-free multi-parameter screening for diagnostics

Antibody-antigen binding plays an important role in many diseases from pathogen infections to autoimmune reactions. Identifying relevant antibodies in patients' blood and characterising them according to their binding behaviour gives insight into the disease status. With Biametrics label-free technology multiple parameters can be assessed in a fast, multiplexed assay with full access to kinetic data. Measurements are performed directly in patient's serum samples, eliminating the need for complex sample pre-treatment or resource intensive labelling steps.

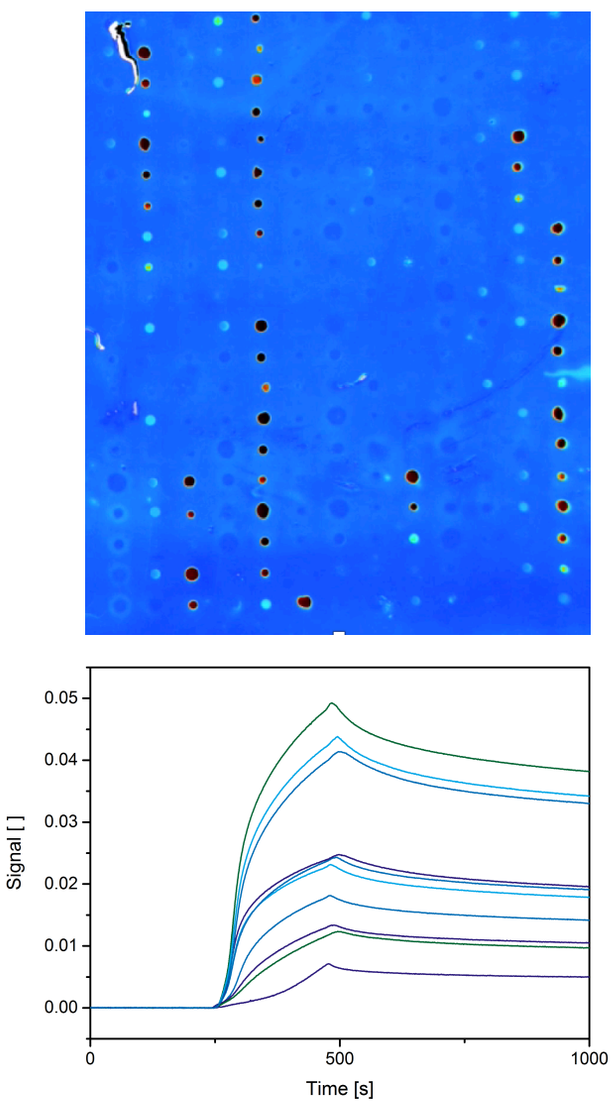

Figure 1: Characterisation of EBV infection in patient's serum sample. Serum from an Epstein-Barr virus (EBV) positive patient was screened against a multi-peptide array using Biametrics label-free SCORE technology (top). Heterophile infection antibodies and antibodies against specific EBV antigens were identified in parallel and characterised according to their binding kinetics (bottom).

Acknowledgements: Arrays were printed by JPT Peptide Technologies, Berlin, Germany.

- Serum and blood samples
- No extraction or purification
- Automated sample handling
- Concentration & kinetic data

Multi-parameter screening of viral infections in serum samples

Infection with Epstein-Barr virus (EBV) in adults can result in severe follow up diseases depending on severity and type of the infection. In order to improve the information content for diagnostic predictions a multi-parameter label-free assay was used. Patient serum was screened for EBV specific antibodies and in the same assay the binding characteristics of each antibody were obtained.

A multi-peptide array was incubated with serum of a EBV positive patient (dilution 1:5) and binding was measured label-free and in real-time using the b-screen (Figure 1). By this method EBV antibodies and infection markers were identified in the sample and characterised according to their binding kinetics to specific antigens.

The used 2D NHS surfaces showed only minimal non-specific binding to the background by other serum components. The highly robust fluidics of the b-screen guaranty stable flow conditions and can be used even in full serum samples.

Contact

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