

## Technology Offer

Ref.-No. M10/22

### Immuno Thermal Shift Assay (ITSA)

#### Areas of application

diagnostics, antibody reactivity

#### Introduction

A multitude of seroassays has been developed to detect and quantitate the humoral immune response against infectious agents, vaccines and autoantigens. Antibody quantity only partially reflects functional aspects of antibody responses *in vivo*. Determination of antibody avidity or functional affinity gives important additional information concerning the strength and breadth of antibody-antigen interactions that allows conclusions on the affinity maturation of the antibody response and time point of antigen contacts.

#### Keywords

immune response, serological assay, thermal shift assay, antibody avidity

#### Invention

We present a novel, homogenous seroassay termed ITSA, which detects an increase in the thermostability of the test antigen through antibody binding, thereby enabling the measurement of antibody avidity in biological samples. Our results show that ITSA is suited for monitoring the affinity maturation of antibodies in individuals vaccinated against SARS-CoV-2. In addition, the application field may be extended to the serodiagnosis of other pathogens, e.g., EBV, CMV, toxoplasmosis, as well as to patients with autoimmune diseases.

#### Development Status

Proof of concept

#### Advantages of the invention

ITSA differs from conventional solid phase immunoassays as it allows direct, precise and rapid measuring of dissociation properties of antigen-antibody complexes in biological samples. Compared to conventional immunoassays, ITSA is processed according to a much simpler protocol, e.g., does not require elaborate washing steps, has no special requirements for laboratory equipment, and offers the possibility for scaling up, automatization, and miniaturization while comprising comparable sensitivity and specificity.

#### Commercial Opportunity

The technology is offered for in-licensing and co-development

#### Patent Status

Patent application filed in Europe.

#### Contact

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