# High Throughput Antibody Characterization Services

Antibody-based therapeutics constitute a major portion of drug discovery research today. However, antibodies as drugs or diagnostic agents present significant analytical challenges because antibodies are large, complex, and heterogeneous molecules.

Surface Plasmon Resonance (SPR) is a powerful analytical technology that is well suited for analyzing and characterizing antibodies. SPR can be used to measure antibody–antigen binding kinetics, perform epitope binning, and epitope mapping. The latter may be used to identify antibody pairs for developing precision ELISA or multiplex assays. Aviva Systems Biology is combining decades of antibody and ELISA research expertise with the innovative Carterra® LSA™ platform to provide high throughput antibody characterization services to advance your discovery programs.

## Expand Your Discovery Throughput

Aviva offers a comprehensive range of antibody characterization services including:
- High Throughput Screening
- MOA Analysis
- Kinetic Analysis
- Affinity Analysis
- Epitope Mapping and Epitope Binning

## Antibody Characterization Workflow

**1000's of Antibodies**　　　　**1 Week of LSA Experiments**　　　　**1000's of KDs and Epitopes**



For more information on antibody characterization or other Aviva Systems Biology custom services, visit: **avivasysbio.com/services**

## High Throughput Kinetic Screening

• Kinetically screen and rank up to 1,152 mABs, 384 clones at one time in parallel.
• Low sample requirements: <200ul of each interactant
• Determine binding kinetics (ka & kd) and affinity (KD)
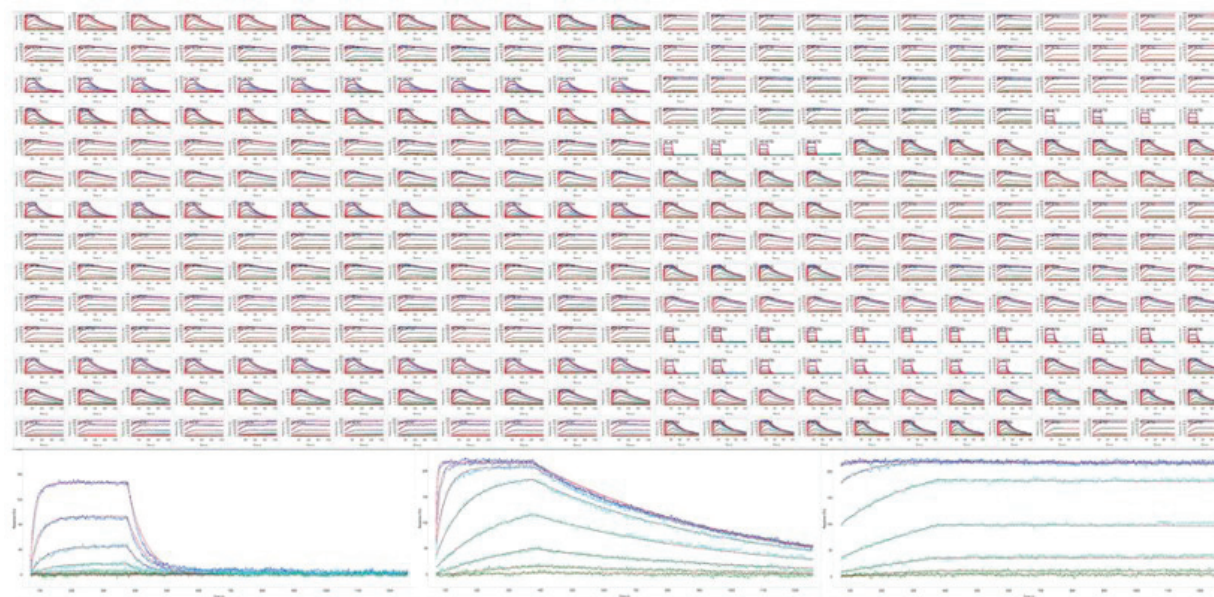


The figure above demonstrates simultaneous kinetic analysis of 384 antigen/antibody binding interactions. The results are from a single capture kinetics assay where a monovalent target (analyte) was titrated over 384 antibodies. Enlarged view of the data from three antibodies showing low, medium and high affinities left to right.

## Epitope Mapping

Epitope mapping is the process of identifying the binding site of an antibody on its target antigen and has become one of the key elements of both vaccine and drug development. The FDA and EMEA guidelines recommend molecular analysis of an antibody drug and its target for regulatory filing.

Aviva utilizes the Carterra® LSA™ platform for high throughput epitope mapping. We will create a complete picture of your antibody body library in 96- or 384-well formats.
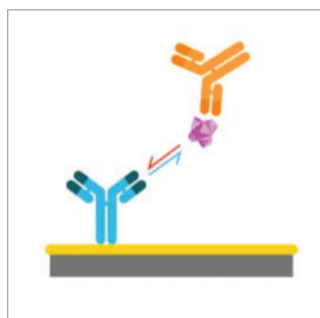
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# Epitope Binning

In epitope binning, antibodies are tested in a pairwise combinatorial manner, and those that compete for the same binding region are grouped together into bins. Aviva utilizes a premix epitope binning strategy where the antigen is saturated with a mAB analyte in solution. This antibody/mAB complex is then tested for binding to an immobilized mAb, its binding response is compared with that for antigen alone. The premix strategy for binning experiments saves significant time and manpower.
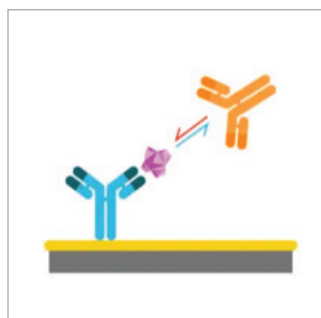


**Classical Epitope Binning**



**Premix Epitope Binning**
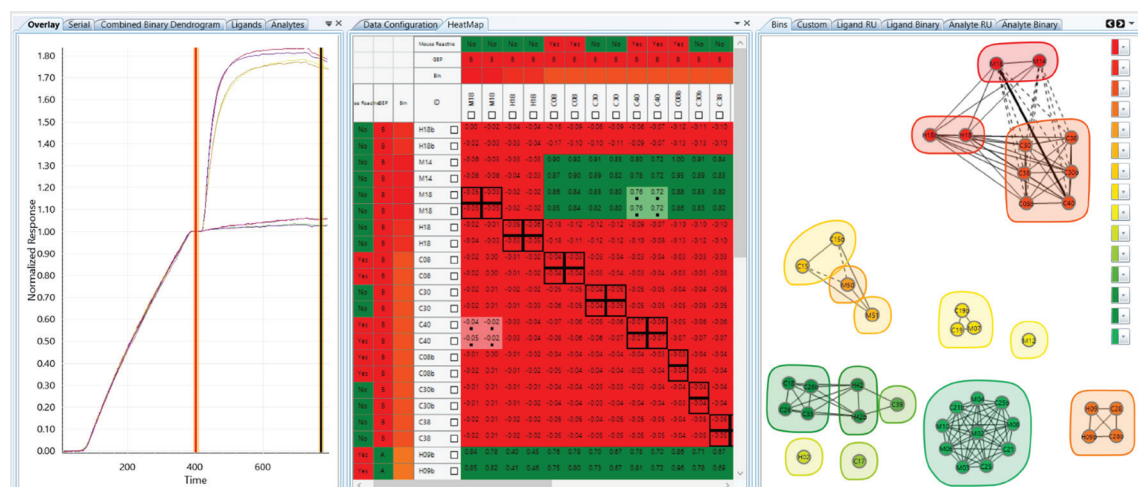


Aviva Systems Biology links data across three visualization panels: sensorgrams, heatmaps, and networks to illustrate and characterize antibody libraries.

Achieve your antibody-based discovery goals with fast, accurate, and cost-effective antibody characterization services from Aviva Systems Biology.

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## Custom Services for Antibody-Based Applications

In addition to high throughput antibody characterization, Aviva Systems Biology offers:

**Recombinant protein development and manufacturing**

- Gram quantities
- Purification
- Selection of tag

**Recombinant antibody development**

- Antigen design
- Immunization
- Purification

**ELISA assay development**

- Start to finish development

**GMP manufacturing services**

**Supply and manufacture of critical reagents**

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