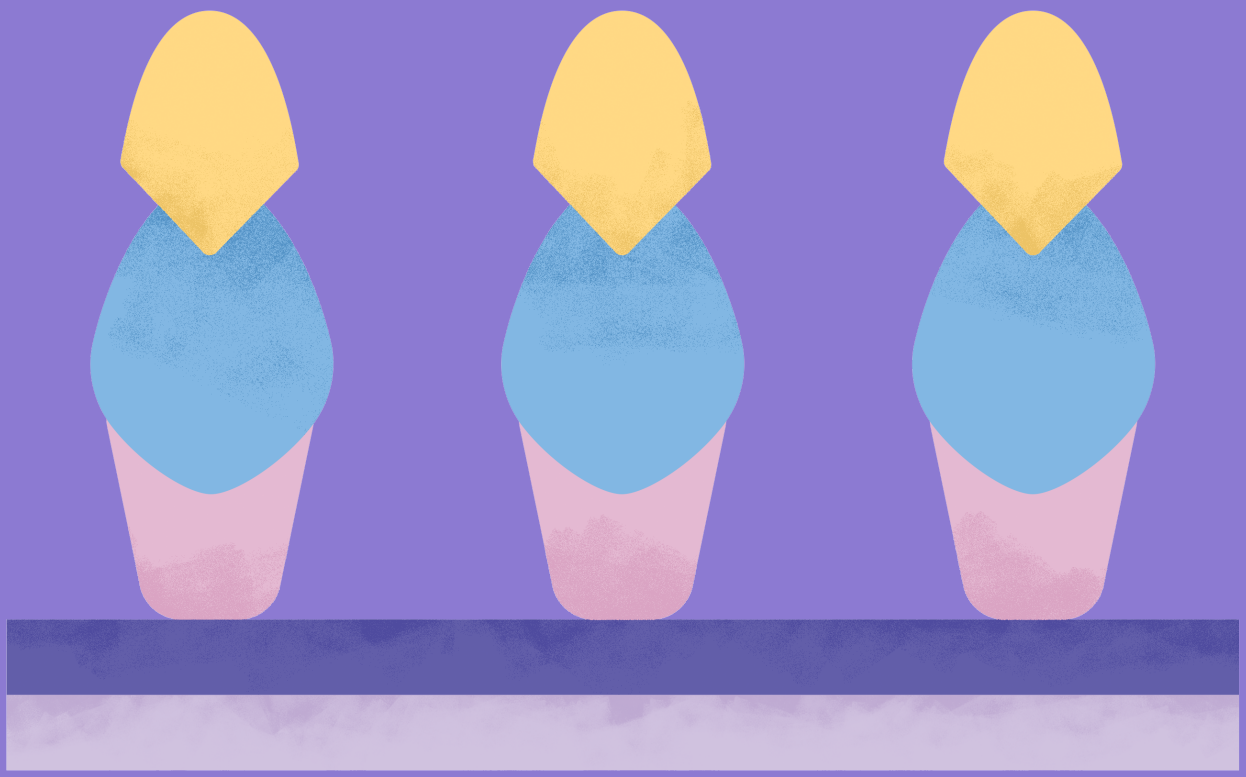
KACTUS

SPR Analysis Services

Expert Solutions for Biomolecule Binding Studies



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Surface Plasmon Resonance Technology

Surface Plasmon Resonance (SPR) is an optical technology that detects and analyzes molecular interactions in real time. It is used to quantify concentration, analyze binding kinetics and affinity, and determine thermodynamic properties without the need for additional detection reagents. This makes it a powerful diagnostic tool in immunodetection and drug development. With its high throughput, flexibility, and sensitivity, SPR offers a true reflection of interaction conditions. KACTUS provides expert SPR technology services, customizing experimental protocols to meet your specific drug discovery and development needs.

SPR Service Features

Various Protein-Analyte Combination

SPR is a versatile tool suitable for analyzing the interaction of various types of biomolecules pairs, such as antigens and antibodies, proteins and proteins, peptides and proteins, small molecules and proteins, etc.

Antibody-Antigen

Protein-Protein

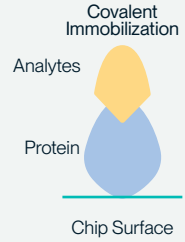
Protein-Peptide

Protein-Small Molecule

Flexible Immobilization Methods

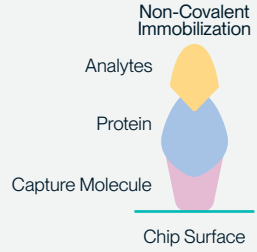
Covalent Immobilization

Proteins are covalently immobilized on the chip surface through Amine coupling. This coupling method involves a reaction with the amino groups of the ligand protein. Generally, amino coupling is used when there are label conflicts with the substances being analyzed.



Non-covalent Immobilization

Non-covalent methods rely on specific, high-affinity interactions between the protein and a capture molecule on the chip. This approach is excellent for maintaining the correct orientation of the immobilized protein and for recycling the chip surface (except SA-biotin)



Service Workflow & Timeline

Workscope Discussion → Contract Sign-off → Method Development → Sample Testing → Report Delivery

Standard Protein / Antibody Sample

2-3 Days

For up to 5 Sample Pairs

Complex Samples

VLP, small molecules or peptides

3-5 Days

For up to 5 Sample Pairs

Procedure Standardization Compliant with Regulatory Applications

Reagents & Consumables
Strict Material Supply Management

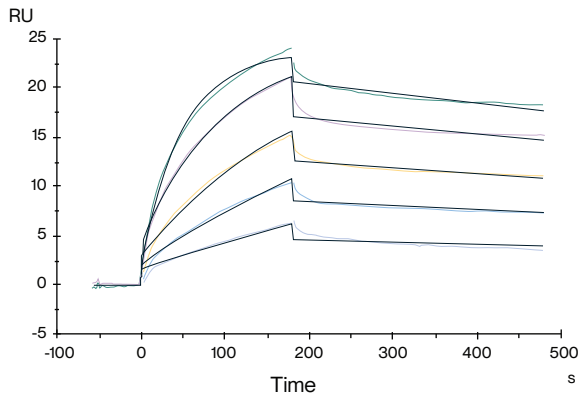
Equipment
Usage Records, Calibration Reports, & Regular Maintenance

Raw Data Storage
Dual Backup Systems for Enhancedd Reliability

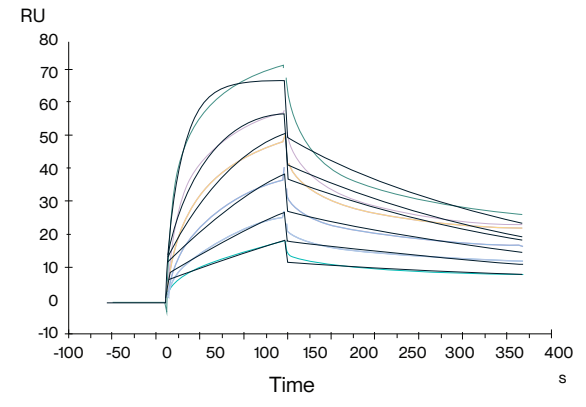
Experimental Records
Documented in Both Paper and Electronic Formats

Case Studies

SPR Detection with Transmembrane Proteins



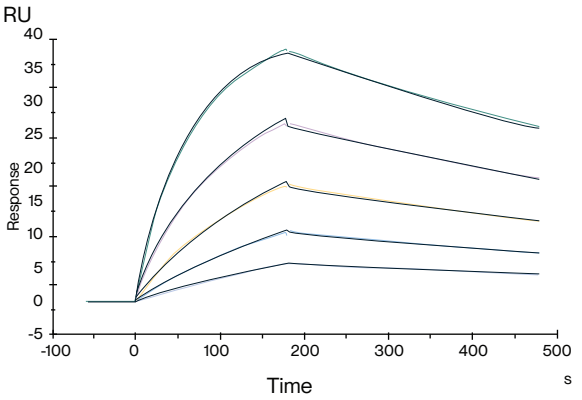
Biotinylated Human Claudin 18.2 VLP captured on CM5 Chip via Streptavidin can bind Anti-Claudin 18.2 Antibody with an affinity constant of 1.28 nM as determined in SPR assay.



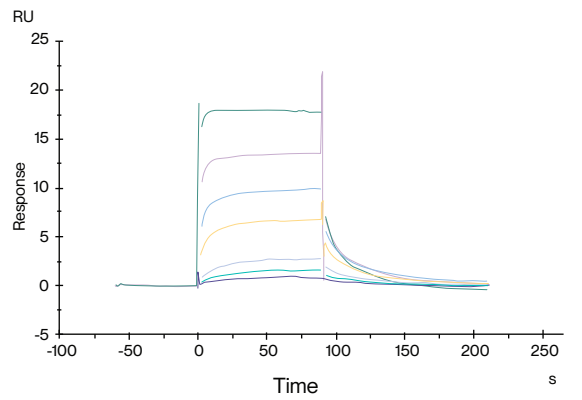
Biotinylated Human Claudin 18.2 Nanodisc, His Tag captured on CM5 Chip via Streptavidin can bind Anti-Claudin18.2 Antibody with an affinity constant of 5.72 nM as determined in SPR assay (Biacore T200)

Case Studies

Affinity Detection of Fc Receptor Proteins and Antibodies

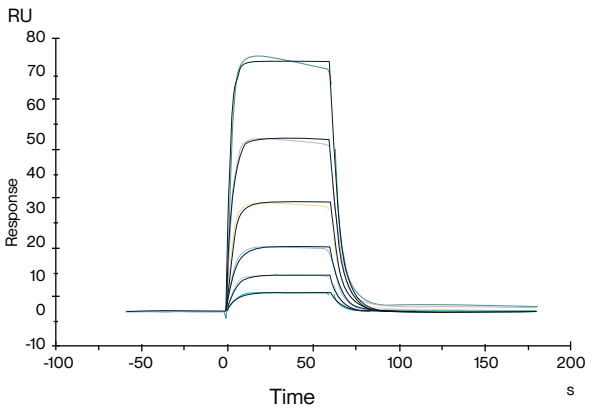


Human Fc gamma RI, His Tag captured on CM5 Chip via anti-his antibody can bind Trastuzumab with an affinity constant of 1.94 nM as determined in SPR assay.

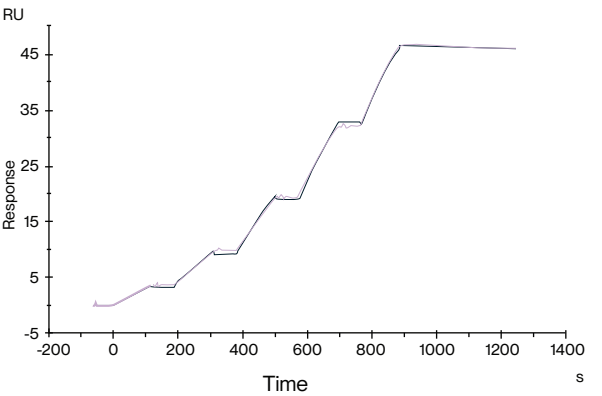


Human FcRn, His Tag captured on CM5 Chip via anti-his antibody can bind Human IgG1 Fc, No Tag with an affinity constant of 0.28 μM as determined in SPR assay.

Affinity Detection of TCR and MHC Peptide Complexes



Human HLA-A*02:01&B2M&AFP (FMNKFIYEI) Monomer, His Tag captured on CM5 Chip via Anti-His Antibody can bind HLA-A*02:01&B2M&AFP (FMNKFIYEI) TCR with an affinity constant of 0.923 μM as determined in SPR assay.



Human HLA-A*02:01&B2M&GP100 (YLEPGPVTA) Tetramer, His Tag immobilized on CM5 Chip can bind gp100 TCR&Anti-CD3 bispecific fusion protein with an affinity constant of 0.196 nM as determined in SPR assay.

Learn More