Surface Plasmon Resonance (SPR) System

Band: Cytiva

Model: Biacore X100

Custodian: Sirapope Wongniam

Description:

     Biacore™ systems are designed to provide valuable information and high- quality interaction data of ions, small molecules, multidomain proteins, or viruses with targets. The systems are used in a range of scientific fields including: basic biological research, drug discovery and development, immunogenicity studies, vaccine development, and quality control. Biacore systems allow you to:

- Understand the relationship between molecular interaction and function or to confirm your results from other techniques
- Screen and characterize for hits and optimize leads based on selectivity, affinity, and kinetics
- Screen and characterize antibodies and proteins based on yes/ no binding, affinity, and kinetics from the fastest on-rates to the slowest off-rates
- Quantitate protein by measuring the concentration of active protein with retained biological function

Application:

- Kinetics/affinity characterization
- Kinetics/affinity screening
- Single cycle kinetics
- Concentration analysis
- Calibration-free concentration analysis
- Built-In knowledge base
- LMW interaction analysis
- Epitope mapping
- Immunogenicity
- Thermodynamics

(Note: ● Application may be performed, but with limitations in software and/or hardware functionality)

Technical Specification:

Specifications*	Biacore X100
Association rate (k_a)	Proteins: up to 10^8 $M^{-1}s^{-1}$ LMW molecules: up to 10^6 $M^{-1}s^{-1}$
Dissociation rate (k_d)	10^{-5} to 0.1 s^{-1}
Affinity range	pM to mM
Concentration limit of detection (LOD)	10 pM
Precision (concentration analysis)	< 5% CV
Molecular weight limit	$M_r > 100$
Baseline noise	< 0.1 RU (RMS)
Baseline drift	< 0.3 RU/min
Sample consumption	Injection volume 2 to 100 µL plus 25 to 30 µL (application dependent)
Immobilized molecule consumption	Typically 1 µg
Analysis temperature	Ambient/4°C to 40°C (Plus)
Sample storage temperature	Ambient
Data collection rate	1 Hz
Sample capacity	15 vials

Specifications*	Biacore X100
Number of flow cells	2
Unattended run time	24 h
Data evaluation time	1 curve set < 0.5 min
Additional software	Biacore X100 Plus Package

*Specifications are representative values, which can vary dependent on experimental conditions and individual properties of ligand and analyte.