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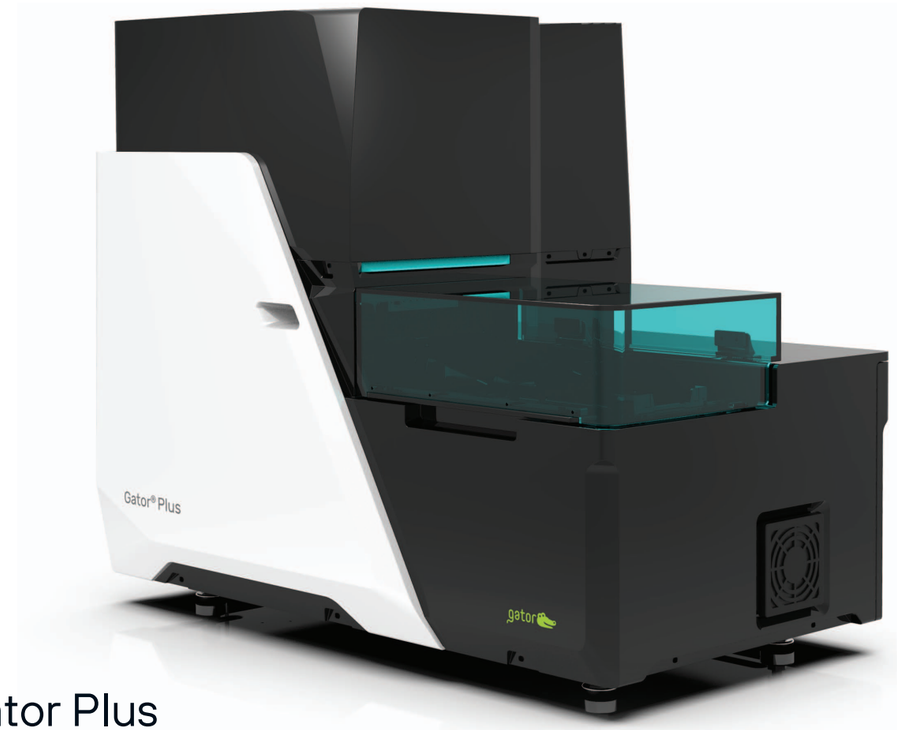
Discover Next-gen Biolayer Interferometry with Gator Plus

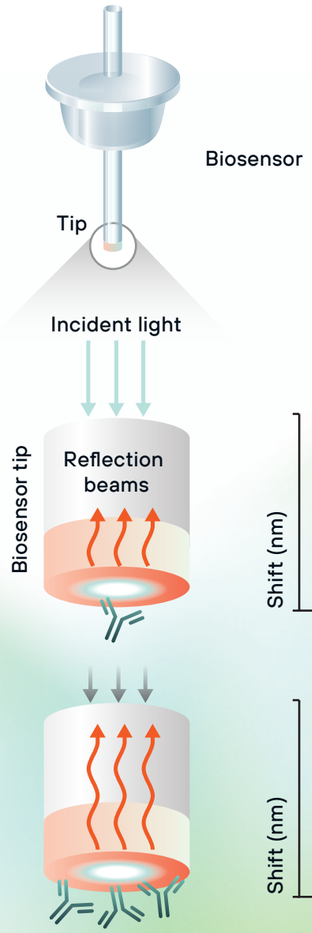


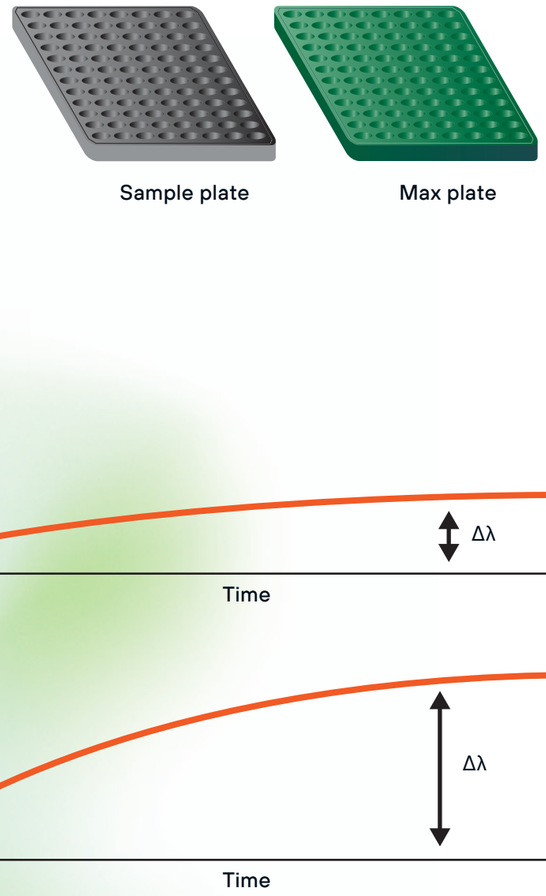
Gator Plus

What is BLI?

Biolayer interferometry (BLI) is a label-free detection method based on reflection of white light from the surface of a biosensor tip.

It analyzes the changes in interference pattern of white light reflected from the tip when biomolecules bind to it. This change is recorded in real time and is expressed as nanometer shift. It is proportional to the number and size of biomolecules bound to the tip.





One Tool. Many Answers.

The Gator biolayer interferometry system is ideally suited for studying biomolecular interactions in academic research and to support multiple stages of therapeutic development in biopharma.

The Gator® Plus system is designed for real-time analysis of biomolecules and can be widely applied in antibody screening, quantitation and epitope binning. It also enables AAV and other viral particle analytics.

Early discovery

- Antibody titer determination
- Yes/no binding to target antigen
- Isotyping
- Epitope binning
- Cross-reactivity testing
- Assay development
- Off-rate ranking
- Binding constant determination

Early development

- Lead optimization
- Lead characterization
- Detailed kinetic characterization
- Epitope binning
- Affinity maturation

Lead antibody

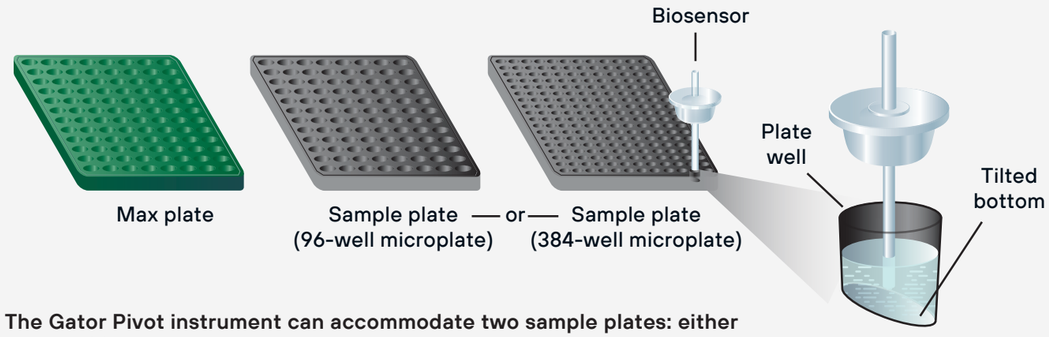
- Binding kinetics
- Activity assay
- Stability study

Main Features

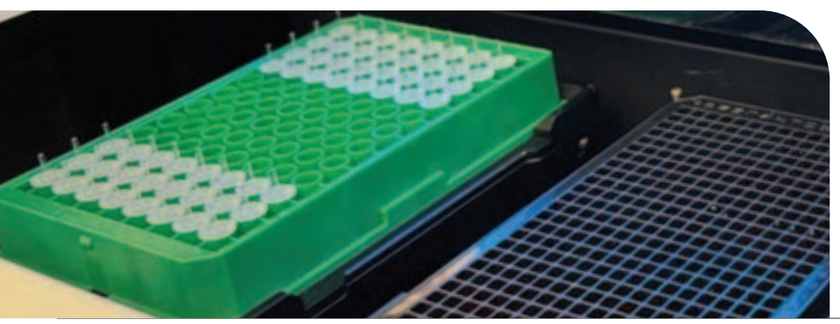
Gator® Plus is an Advanced Biolayer Interferometry (BLI) System. Superior system stability, combined with greater flexibility in assay setup, expanding the capabilities of BLI applications.

Highlights

- 8 Spectrometers enable high frequency parallel measurement of up to 8 samples.
- Single sample plate enables automated data acquisition for 456 samples per batch.
- With Gator Bio next-gen biosensors, the Gator Pilot system provides accurate, high sensitivity data

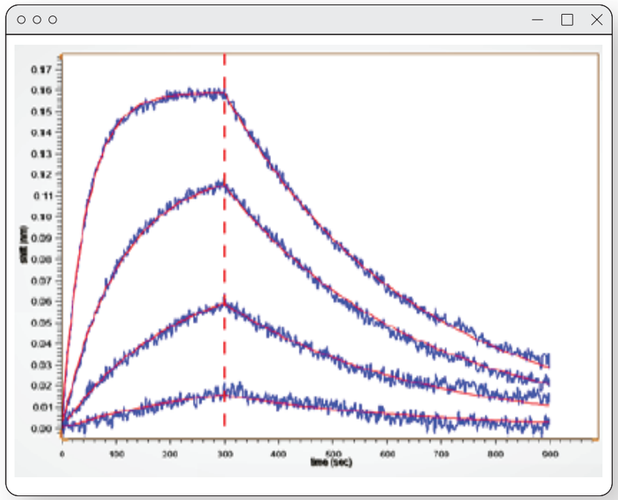


The Gator Pivot instrument can accommodate two sample plates: either 96-well or 384-well microplates in flat- or tilt-bottom formats, or a combination of them. Additionally, it has a designated space for biosensor placement.



Kinetic Characterization

Gator Plus provides stable baselines for the measurement of pM to mM affinities. From small molecules to large biomolecules, Gator's BLI enables the detection, measurement, and analysis of interactions across a wide molecular weight range.



K_D (M)	k_{off} (1/s)	k_{on}(1/Ms)
4.30E-09	0.00284	6.61E+05

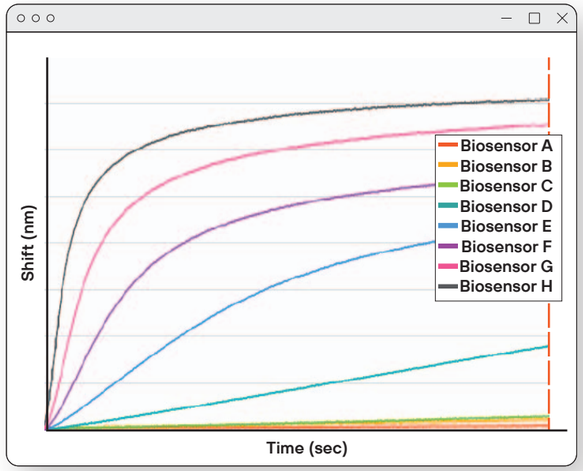
Dilution series of PD-1 binding to anti PD1. Global-fit analysis yielded the kinetics parameters shown in the table.

Highlights

- Eight different binding reactions simultaneously
- Binding constant determined within 10 minutes
- Easy to customize assay and fine-tune concentration ranges of analyte to get accurate binding constants
- Wide range of biosensor choices to determine binding kinetics several ways

Robust Regeneration for Consistent Quantitation

Standard curve of mIgG (1 mg/mL to 0.0003 mg/mL) using Protein A biosensors. Twenty consecutive measurements with regeneration in graph above. Calculated binding rates, SD, and CV are shown in the table.

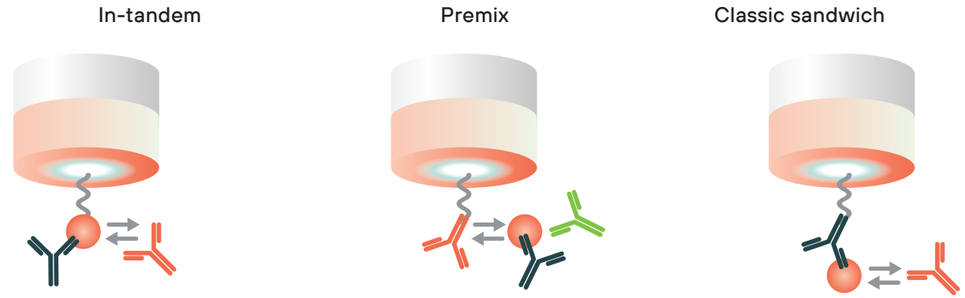


Up to
456
samples per batch

n=20	Binding rate		
Standard (µg/mL)	AVG	SD	CV
1000	1.581	0.016	1.0%
300	0.733	0.010	1.4%
100	0.273	0.006	2.2%
30	0.082	0.002	2.1%
10	0.026	0.0005	1.7%
3	0.0081	0.00015	1.9%
1	0.0035	0.00012	3.4%
0.3	0.0013	0.00002	1.7%
		Overall	**1.9%**

Standard curve for human IgG binding to Gator Plus Protein A biosensors

Epitope Binning

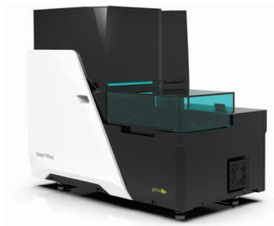


Three epitope binning formats on Gator Plus

16x16 mAb competition matrix performed in less than 7 hours

Specifications

Gator Plus



General	
Detection	Biolayer Interferometry
Sample Microplate	96-well or 384-well format
Sample type	Proteins, antibodies, peptides, nucleic acids, liposomes, viruses, and small molecules
Maximum sample capacity	456
Software	Integrated
Simultaneous reads	8
Spectrometers	8
Acquisition rate	2, 5, and 10 Hz
Dimension - H x W x D (cm)	63 x 73 x 44
Weight	55 kg
Orbital flow	Static, 100 - 2000 rpm
Analysis temperature range	Ambient plus 4°C to 40°C

Kinetics	
Analysis time	Real-time kinetic binding from 5 min to 4 hr
Baseline noise (RMS)	≤ 4 pm
Baseline drift	≤ 0.1 nm/hr
Association rate (k_{on})	10^{1} to 10^{7} M^{-1} s^{-1}
Dissociation rate (k_{off})	10^{-6} to 10^{-1} s^{-1}
Affinity constant (K_D)	1 mM - 10 pM
Molecular weight	>150 Da

Quantitation	
Analysis time	8 samples in 2 min
Quantitation range (Protein A Biosensor)	0.02 – 2000 µg/mL
Quantitation precision (Protein A Biosensor)	CV < 10%

Epitope binning	
Analysis time	Up to 16X16 in 7 hr
Pairwise fashion	In-tandem, classic sandwich and pre-mix
Binning capacity	16x16

Gator Probes

Applications & Specifications

Gator Probes	Applications	Quantitation	Kinetics	Epitope binning	Dynamic range (µg/mL)	Reusable
ANTIBODY BIOSENSORS						
Pro A	IgG titer	●		●	0.02 - 2000	●
Pro G	IgG titer	●		●	0.02 - 2000	●
Pro L	IgG Titer using kappa-light chain	●		●	0.02 - 2000	●
HFC	Human IgG characterization by human IgG Fc capture		●	●		●
HFC Gen II	Second-generation HFC probes with higher affinity capture and better regenerability	●	●	●	0.3 - 6000	●
MFC	Mouse IgG characterization by mouse IgG Fc capture	●	●	●	0.02 - 6000	●
Anti-Rabbit Fc	Rabbit IgG characterization by rabbit IgG Fc capture	●	●	●	0.05 - 4000	
Anti-FAB	F(ab), F(ab)2 characterization by CH1 capture	●	●	●	0.3 - 3000	●
IgM	Human IgM titer/characterization	●	●		0.4 - 300	●
Anti-VHH	Camelid anti-VHH characterization	●	●		0.05 - 10	●
PURIFICATION TAGS						
Anti-His	Captures C- and N-terminal 6-His and 8-His tagged proteins	●	●	●	~1 - 100	●
Ni-NTA kit	Ni-NTA capture surface for purified His-tagged proteins	●	●	●	~1 - 100	●
Strep-Tactin XT	Captures win-strep-tagged proteins (seq: SAWSHPQFEKGGGSGGGSGGSAWSHPQFEK)	●	●	●	~0.02 - 20	●
Anti-GST	Captures GST-tagged proteins	●	●	●	0.5 - 300	●
Anti-FLAG	Captures FLAG-tagged proteins		●			
STREPTAVIDIN SUITE						
SA	Streptavidin surface. Captures biotinylated molecules		●	●		
SA XT	High sensitivity SA probe for low Mw (>1 kDa) and high Mw (<2MDa) analytes		●	●		
SMAP	High sensitivity SA for small molecule and small peptide analytes.		●			
FlexSA kit	Re-activatable SA biosensor kit		●			●
CELL & GENE THERAPY						
AAVX/AAV9	Measures intact AAV viral particle titer	●	●		$7E^{9}$ - $1E^{14}$ vp/ml	
HS AAVX/AAV9 kit	Measures low concentration intact AAV viral particle titer	●			$1E^{7}$ - $1E^{9}$ vp/ml	
AAV Ratio kit	Determine AAV empty/full capsid ratio	●			5 - 100% full	
Anti-PEG	Captures PEGylated proteins/LNPs		●			
USER-CUSTOMIZED CHEMISTRIES						
AR	Amine coupling surface ready for EDC-NHS coupling		●			
APS	APS surface for hydrophobic ligand capture		●			
Custom	Customized to your specifications	●	●	●	Varies	Varies

Only available with Gator® Bio.