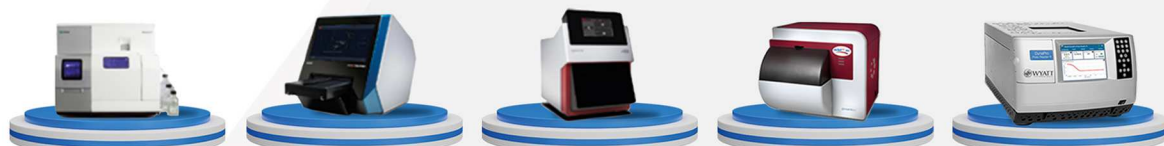


# A Deeper Understanding For Hit Discovery

Biophysical methods are at the heart of modern drug discovery. It validates protein quality control (QC) and improves sample quality and target validation. These methods can be used in screening, hit validation, hit-to-lead and lead-to-candidate development, ultimately optimizing asset pipelines.

	SPR	MST	ITC	DSF	nanoDSF	MS	DLS	HTRF	TR-FRET	Switch Sense	ASMS	FP	NMR	TRIC
Binding														
Thermodynamics														
Stoichiometry														
Protein Quality														
Kinetics														
Function														

To offer expertise at any stage of the molecular discovery program, HitS has created a versatile toolbox combining different biochemical and biophysical methods and assays. It allows the team to measure protein binding, thermodynamics, stoichiometry, protein quality, kinetics, and function.



	Surface Plasmon Resonance (SPR) Biacore 8000 & 8000+	Microscale Thermophoresis (MST) Monolith 115 B/R	Nanodifferential Scanning Fluorimetry (nano-DSF) Prometheus NT.48	Bio-Layer Interferometry (BLI) Octet RED384	Dynamic Light Scattering (DLS) DynaPro plate Reader III
<b>Critical Parameters</b>	$K_d$ : pM – mM $K_{on}$ : up to $10^9 M^{-1}s^{-1}$ $K_{off}$ : $10^{-6} - 0.5 s^{-1}$	$K_d$ : 1 pM – 1 mM	Thermal Stability: $T_m$ Chemical Stability: $C_m$ Aggregation: $T_{agg}$	$K_d$ : 10pM – 1 mM $K_{on}$ : $10^1 - 10^7 M^{-1}s^{-1}$ $K_{off}$ : $10^{-6} - 10^{-1} s^{-1}$	Particles size: 0.5 - 1000nm (Radius) Scattering Angle: 90°
<b>Flux</b>	Up to 2300 samples/day	~ 15 mins/ $K_d$	~72 samples/hour	~5000 samples/day	~ 60 sample /hour
<b>Sample Cost</b>	5 µg/sample	60 ng/ $K_d$	5 µg/mL – 200 mg/mL 10 µL	NA	4uL (minimum)
<b>Advantage</b>	No samples labeling, real-time monitoring molecules association	No samples anchoring preparation	No samples anchoring and labeling preparation, wide range buffer selection	High throughput screening, wide range buffer selection	Easy to use, automated, high stability and sensitivity
<b>Application</b>	Small-molecule drug candidates to high-molecular weight proteins in various sample environments	Protein, Peptide, Nucleic acids, Vesicles, Platelets and whole cells, Virus particles and empty capsids	Protein, Peptide, nanoparticles, DNA, RNA, Exosomes, liposome	Proteins, antibodies, peptides, serum containing media, DMSO containing buffers, virus-like particles, untreated cell culture supernatants and crude cell lysates	Protein, Peptide, nanoparticles, liposome

# Ready-To-Go Biophysics Assay



## Established Assays

Optimized assay conditions



## Flexible

Single/multiply assay in parallel



## Cost-effective

Low budget, high quality data



## Fast Turnaround Time

Up to 2 weeks



## Protein Supply

Established protein construct in house

- Tailored high quality assay grade proteins
- Protein QC: SDS-PAGE, aSEC, MS

Complete protein supply included

## Assay Initiation & Measurements

Established assay conditions

- Established labeling/coupling method
- Published tool compounds

Up to 3  $T_{ms}$  /  $K_{ds}$  /  $IC_{50}s$  included

## Results & Report

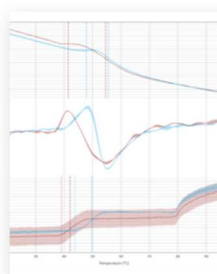
A tabulated report included

Extended report available including measured curves, assay conditions, analysis and scientific summary in pdf-format

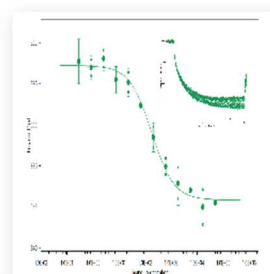
## Show case:

### Activity-Validated Assays of NLRP3 vs. MCC-950

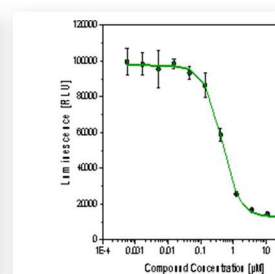
- High quality assay grade protein produced in house
- Protein QC: SDS-PAGE, aSEC, MS



LabelFree TSA (nanoDSF)  
Impact of MCC-950 on NLRP3 thermal stability  
Control: DMSO  
MCC-950: 1  $\mu$ M



TRIC/Dianthus  
Binding affinity of MCC-950 to NLRP3  
Labeled MST assay  
 $K_D$ : 180 nM



ADP Glo assay  
Impact of MCC-950 on NLRP3 activity  
 $IC_{50}$ : 450 nM



Ready-to-go Target list



HitS Website



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