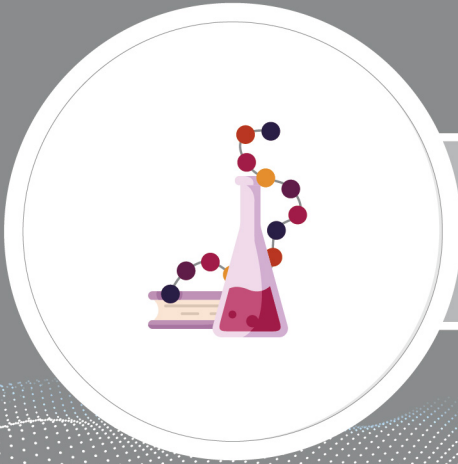




**ACCELERATE  
YOUR DRUG DISCOVERY  
JOURNEY:**

Access large amounts of antibody  
affinity insight

# Service Workflow

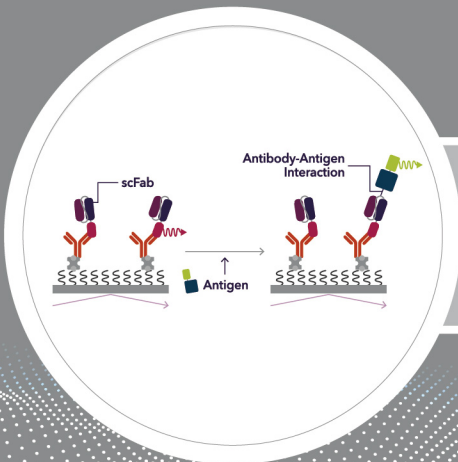
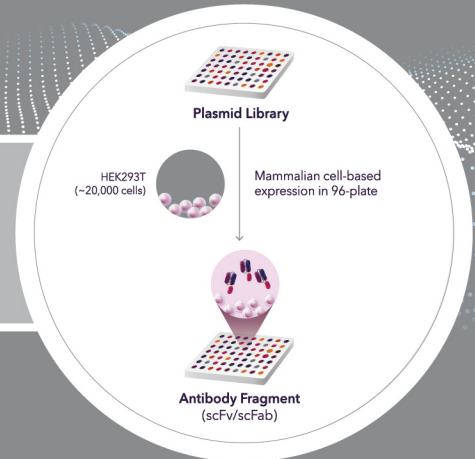


## Customer Input

- Antibody Fv/Fab sequence
- Antigen with Cy3/GFP labeled or synthesize service by PROTEINA

## Library Construction

Mammalian cell-based scFv/Fab production with optimized plasmid construction techniques applied

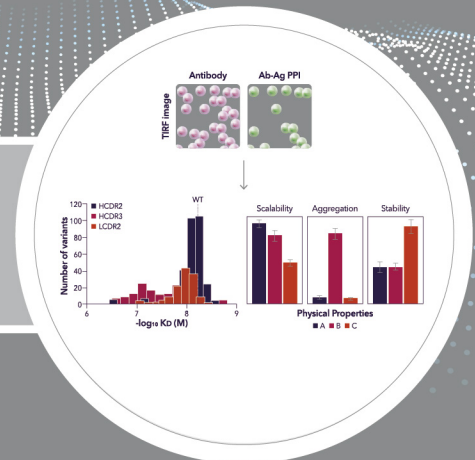


## Affinity Measurement

Only 10 pg of crude antibody needed, enabling 384 affinity (KD) measurements in a single run.

## Single-Molecule Analysis

Deliverable: Reports containing physical expression information and a wide range of affinity (KD) data



# PPI Landscape: Antibody Affinity Maturation Service

## Service Highlight

The PROTEINA Landscape service empowers researchers with a unique methodology for antibody drug discovery. Our next-generation antibody affinity maturation service, which utilizes single-molecule imaging technology, enhances antibody affinities while offering sequence diversity tailored to achieve desired affinities. Landscape only requires just 10 picograms of crude antibody for precise affinity (KD) measurements, enabling a remarkable 1000-fold dynamic range in a single experiment, saving time and resources.



### Mammalian Cell-based Antibody Production (HEK293T/CHO-K1):

- Faster recombinant antibody production using transient expression system



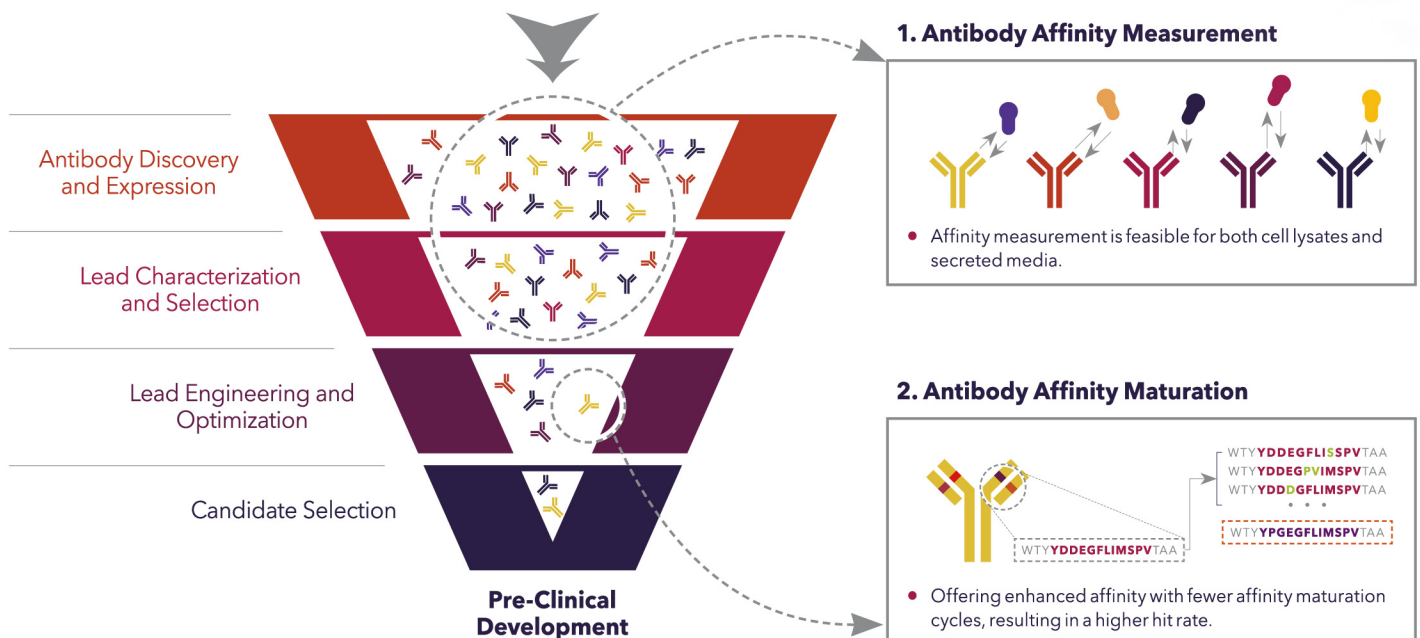
### Purification Free:

- Direct analysis of recombinant protein (antibody/antigen) from cell culture reduces purification time and costs



### Streamlined Processes:

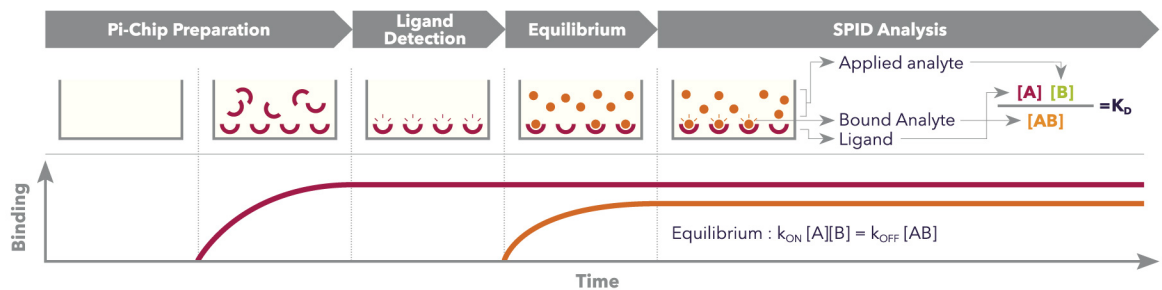
- Fast turnaround time of 2 weeks from library production to affinity (KD) measurement and analysis. Does not require NGS or plasmid selection/amplification.



# SPID: Harnessing Landscape for innovation

SPID(Single-molecule Protein Interaction Detection)

## 01. Ultra-Sensitive Analysis



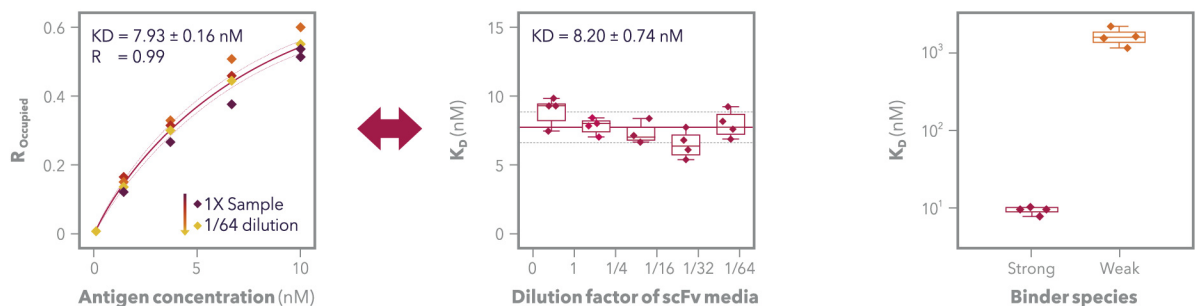
- Single-molecule resolution enables accurate analysis of antigen-antibody binding affinity in a single measurement at equilibrium, resulting in faster TAT

## 02. Minimal Sample Consumption

Type	Characteristics	PROTEINA	HT-SPR	BLI Octet RH8
Antigen	Crude	10 ng	X	X
	Purified	10 ng	10 ug	1.4 ug
	Volume Required	10 ul	300 ul	200 ul
Antibody	Crude	10 pg	10 ug	1 ug
	Volume Required	10 ul	300 ul	200 ul

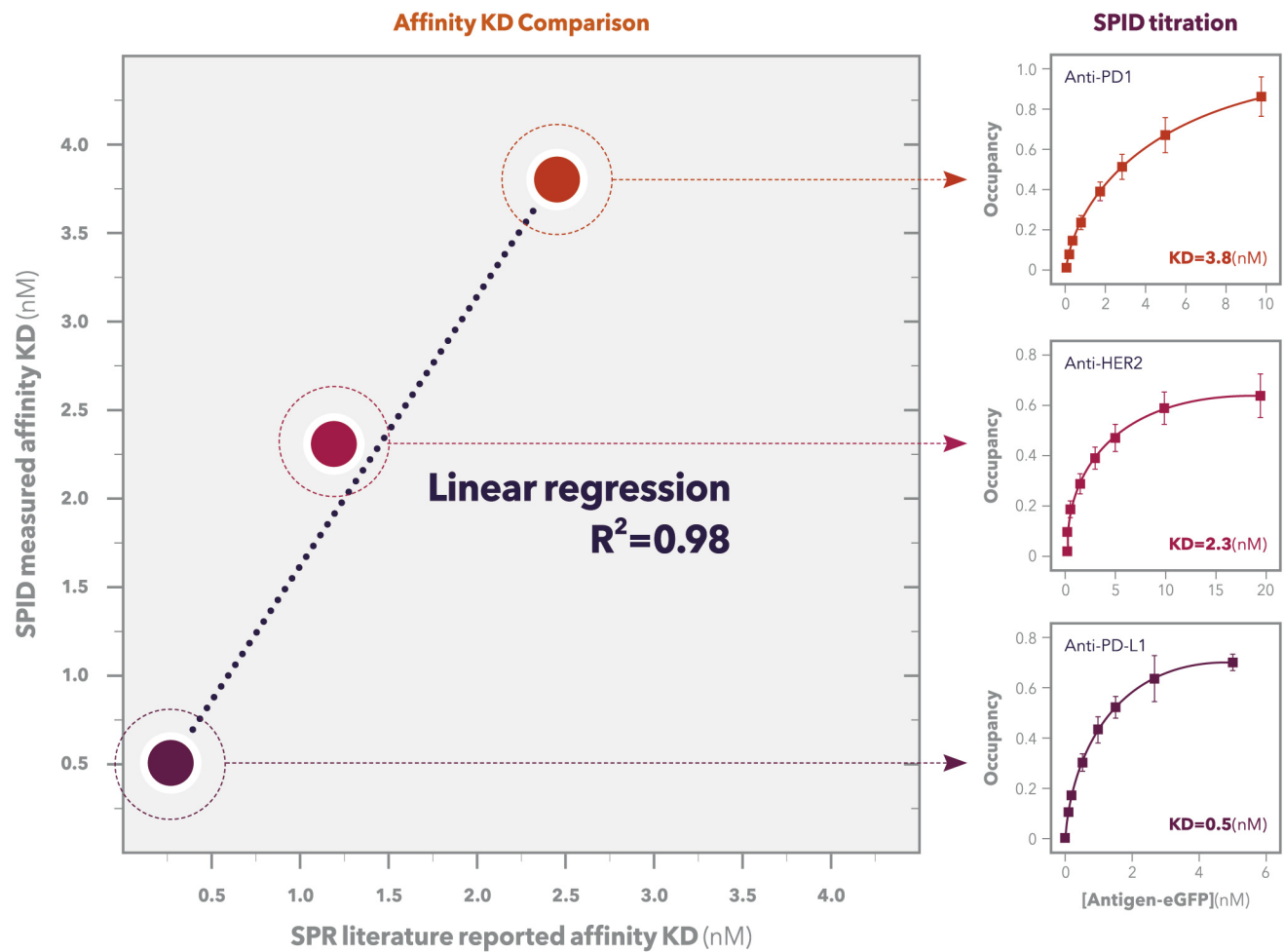
- Measuring just 10 picograms of secreted antibodies from mammalian cells

## 03. Dynamic Range of Affinity Measurement Across Various Concentrations



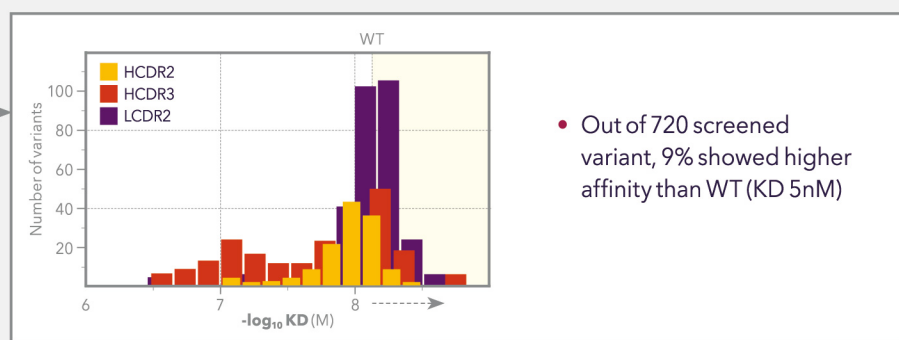
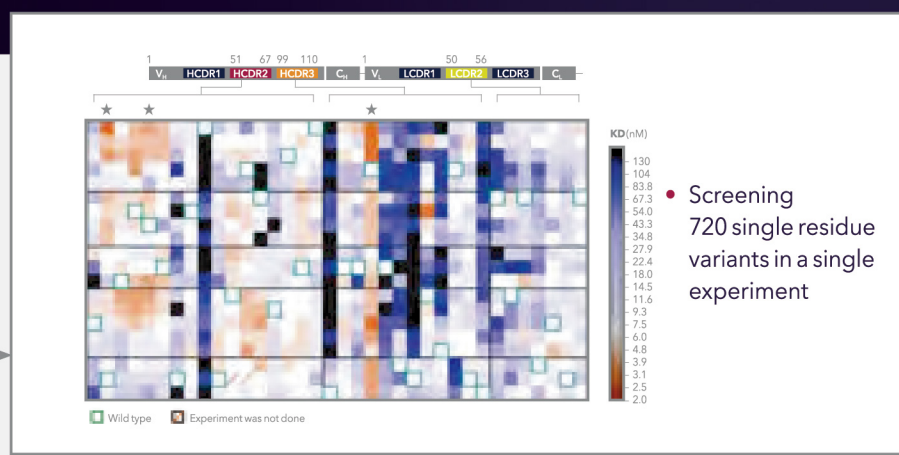
- Accurate  $K_D$  measurement across various concentrations
- Measuring  $K_D$  values for 1,000-fold binding affinity range under identical condition

# SPID Compatibility (SPID vs. SPR)



- 6 Therapeutic targets available in-house including HER2, PD-L1, PD-1, CTLA4, TNFa, CoV19-SP
- 10 Antibodies in Fab format produced, affinity KD measured by SPID
- Three Selected antibodies were compared between their reported KD measured by SPR and in-house KD data characterized by SPID, revealing a correlation constant coefficient ( $R^2$ ) of 0.98

# PoC Case : Affinity-enhanced antibody screening through Landscape (Trastuzumab)



**KD rank report**

CDR	Amino acid sequence	KD (nM)
HCDR2	•••	2.35
HCDR3	•••	3.83
•••	•••	•••

- Screening the KD of 920 variants in just 4 weeks.
- Deliver higher hit rate
- Iterate maturation cycle to achieve sequence with desired KD

## Contact Information

E mail : info@proteina.co.kr / Homepage : www.proteina.co.kr  
 Phone : +82-70-4276-5261 / Fax : +82-303-3443-4123  
 Address : The Institute of Molecular Biology & Genetics(Bldg. 105-1)Rm. 211, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul, South Korea.

