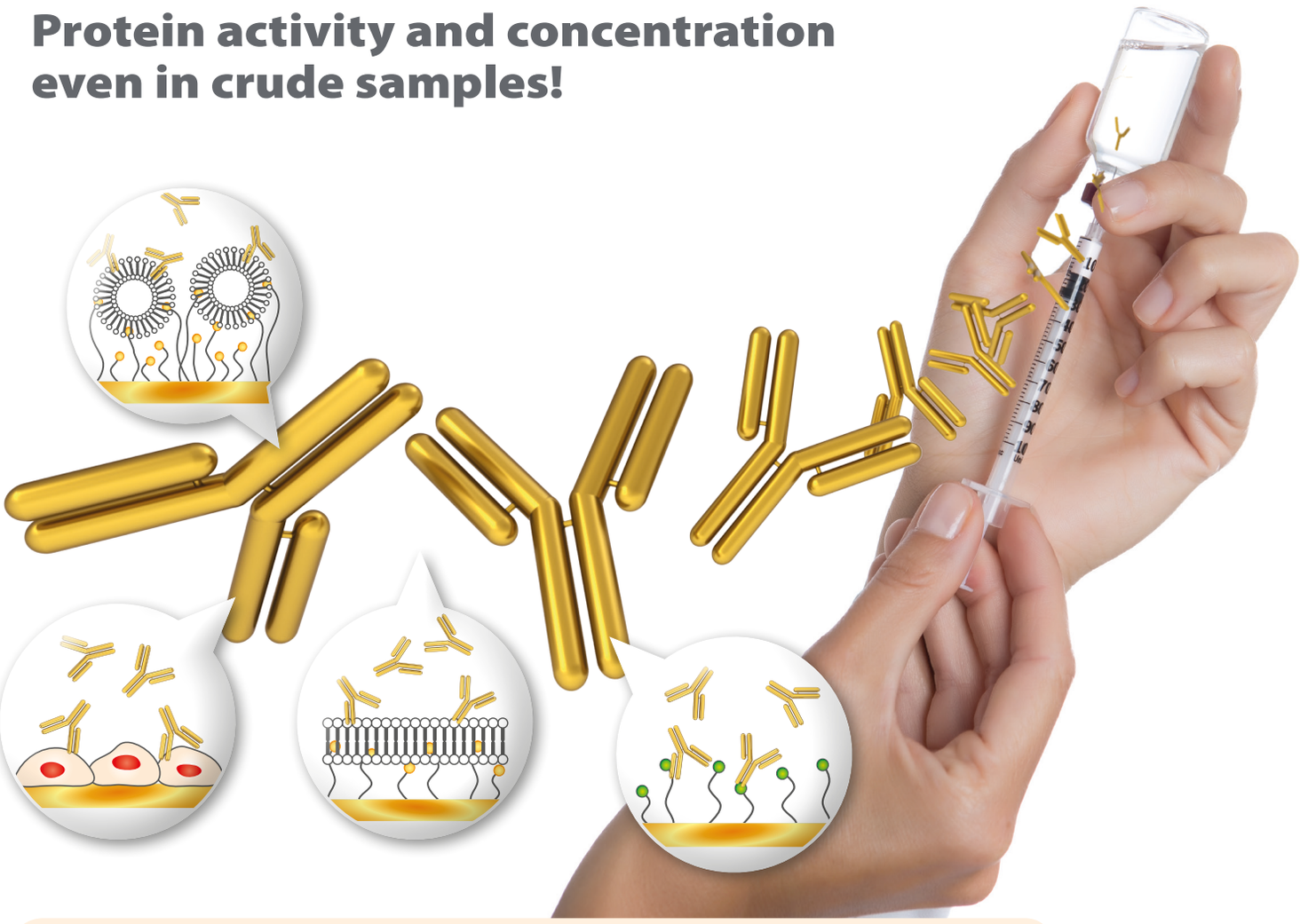
Excellence in Surface Plasmon Resonance

BioNavis

Protein

Protein activity and concentration even in crude samples!



Key questions MP-SPR can answer in protein research:

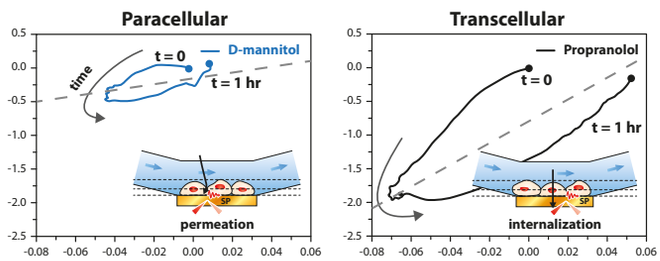
- What is antibody affinity to antigen Z?
- How much is the real binding without bulk effect?
- How fast is molecule X association and dissociation kinetics to molecule Z?
- Which antibody binds best to the target?
- What is antibody affinity to cell membrane extract?
- How much peptide binds to the molecule X?
- Does protein X cause signal cascading in living cells?
- What is the best protein for successful immunoassay?
- Which monoclonal antibody has the highest affinity?

www.bionavis.com/antibody

Why choose MP-SPR for protein research?

Better understanding

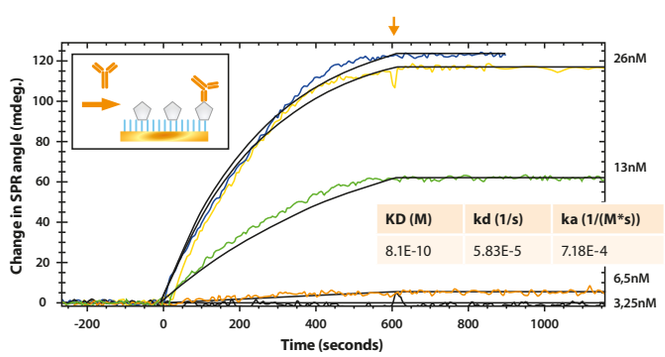
Surface Plasmon Resonance (SPR) is valuable tool for antibody discovery thanks to its low sample consumption, high sensitivity and real-time label-free operation. Multi-Parametric SPR measures protein interactions with target, liposome, supported lipid bilayer, membrane receptor, cell membrane extract, and even living cells providing thorough understanding of protein interactions. Unique PureKinetics™ feature provides high quality kinetic data and enables reliable results even with crude samples, thus saving time required for sample pretreatment.



Left: Permeation, Right: Interaction with cell causing signal cascading.

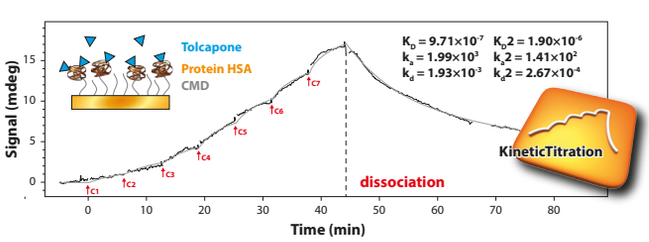
Affinity and kinetic constants

Get affinity and kinetic constants of the interaction in the same interaction without labels. Work with antibodies, proteins, peptides, antibody fragments etc., variety of sensor slides ensure you find best surface for your ligand molecules, utilize amino-, and thiol coupling, biotin or histidine tags. TraceDrawer™ for MP-SPR Navi™ is an intuitive data-analyzing software that allows combination of data from multiple runs and includes multiple fitting models for affinity as well as for on- and off-rates.



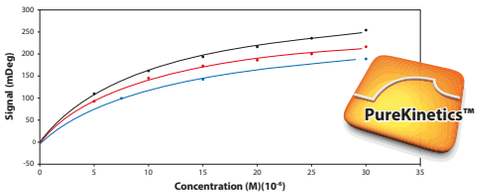
Faster interaction measurement using KineticTitration

KineticTitration significantly reduces time required to run an assay with different concentrations. It is also useful for interactions that are difficult to regenerate or when regeneration damages the ligand on the surface. In the measurement, analyte samples are flown over the surface in a series from low to high concentration, without dissociation and regeneration steps between the samples with different concentrations as required in other methods. Unique to 420A ILVES.



High quality data with PureKinetics™

MP-SPR provides high quality data. The key factor is the unique PureKinetics™ (pat.pend.) feature, which allows compensation of bulk artifacts (also called "bulk effect"). This is extremely important when interactions are weak, when interactions with membrane extracts are measured or when measurements are performed in crude samples. In fact, PureKinetics™ even large bulk effects caused by 100% serum can be compensated for.



Adalimumab (known as Humira®)	CD16b K_D(μM)
1. Purified sample injection	10.90
2. Crude sample injection (including cells)	13.10
3. Purified sample injection (measured after crude sample injection)	10.20

Conformation changes

With simultaneous measurements at multiple wavelengths in angular scanning mode, there is enough information to calculate unique thickness and optical density of the formed layers. This can further be used to provide insight to conformation changes of proteins on the surfaces.

Low total cost of ownership

Compare instruments and consumable prices!

Do you want a full care package with assay development to start your measurements quickly, annual maintenance check (AMC), or do you prefer to change the flow-cell and tubing by yourself - it is your choice!

Recommended MP-SPR Navi™ instrument for measurements of protein interactions:

200 OTSO **400 KONTIO** **210A VASA** **220A NAALI** **420A ILVES**

Further reading:

AN#157 Proteins (toxins) interaction with lipid membranes

AN#155 Faster Interaction Measurements using MP-SPR KineticTitration

AN#151 MP-SPR measurements of soft and hard corona on nanoparticle in 100% serum

AN#147 Analyzing dissociation kinetics of IgG from protein A using MP-SPR and PureKinetics™

AN#138 Antibody and antigen interaction

AN#132 Antigen binding capacity of immunosensor

Selected publications:

Kinetics of PKCe Activating and Inhibiting Llama Single Chain Antibodies and Their Effect on PKCe Translocation in HeLa Cells (Summanen et al., PLoS One, 2012)

Amyloid beta aggregation (Hilt et al., The Journal of Physical Chemistry, 2017)

Targeting Tumor-Associated Exosomes with Integrin-Binding Peptides (Carney et al., Advanced Biosystems, 2017)

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