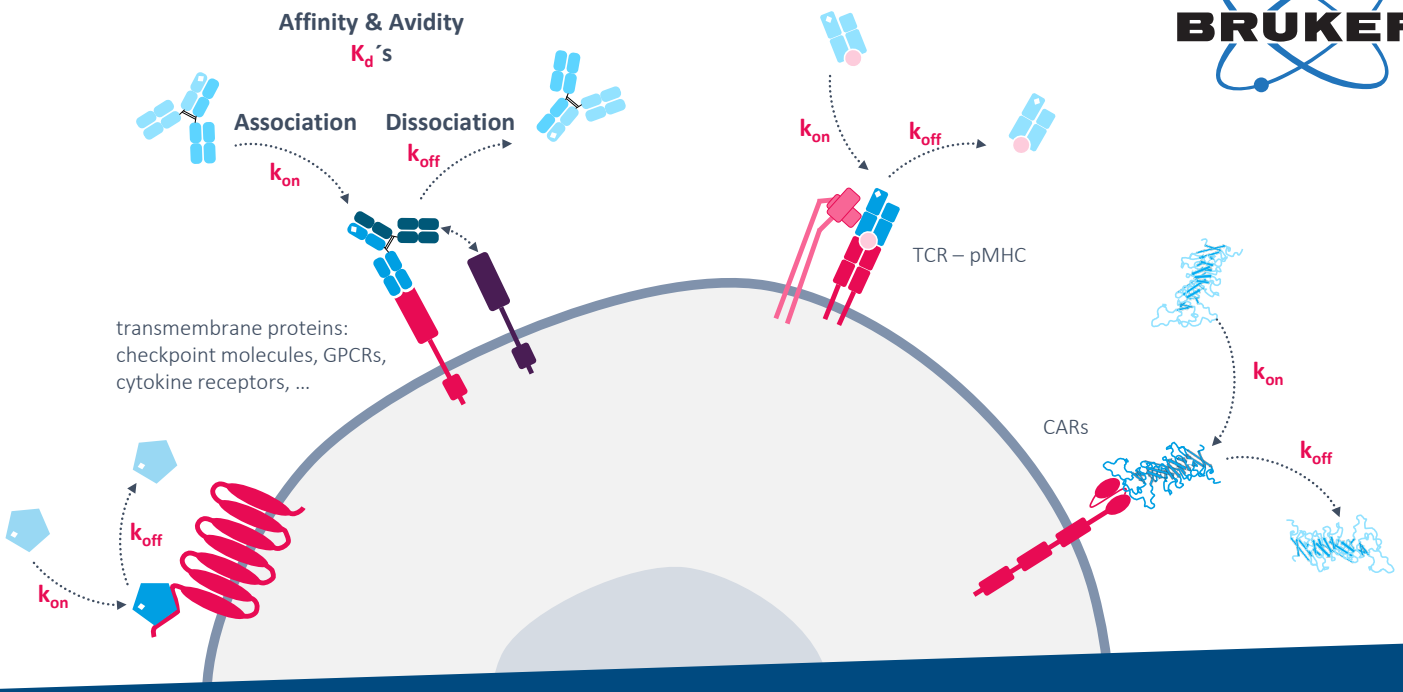
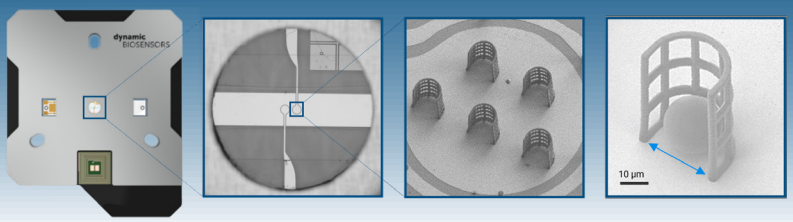


single-cell Interaction Cytometry (scIC)

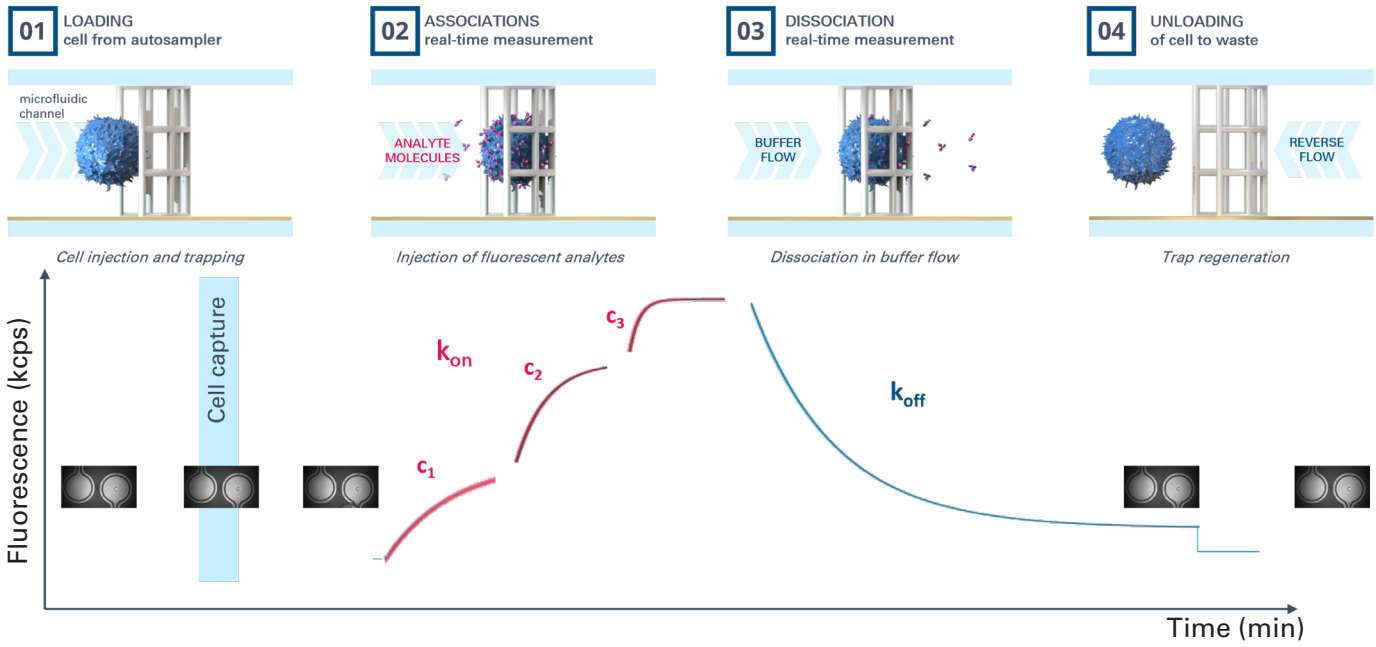
Measure the binding of molecules to membrane targets on cells



heliX^{cyto} chips feature flow-permeable, bio-compatible polymer cages, which physically retain any type of cells. Trap sizes are tailored to capture single cells.

scIC measurement principle

for the automated analysis of k_{on} and k_{off} binding rates on cells

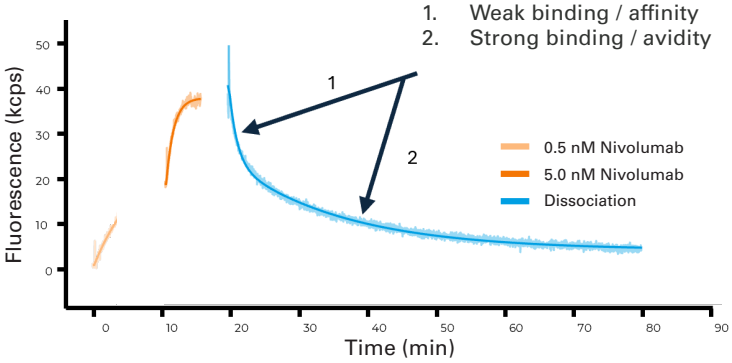


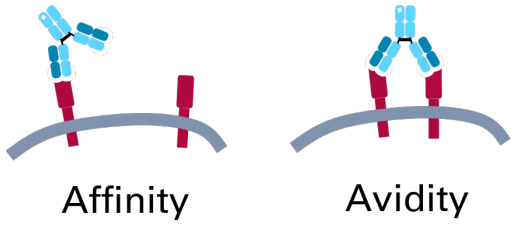
Avidity effects

Biphasic dissociations reveal complex binding modes

Biphasic dissociation kinetics indicate two distinct binding modes:

1. Weak binding / affinity
2. Strong binding / avidity

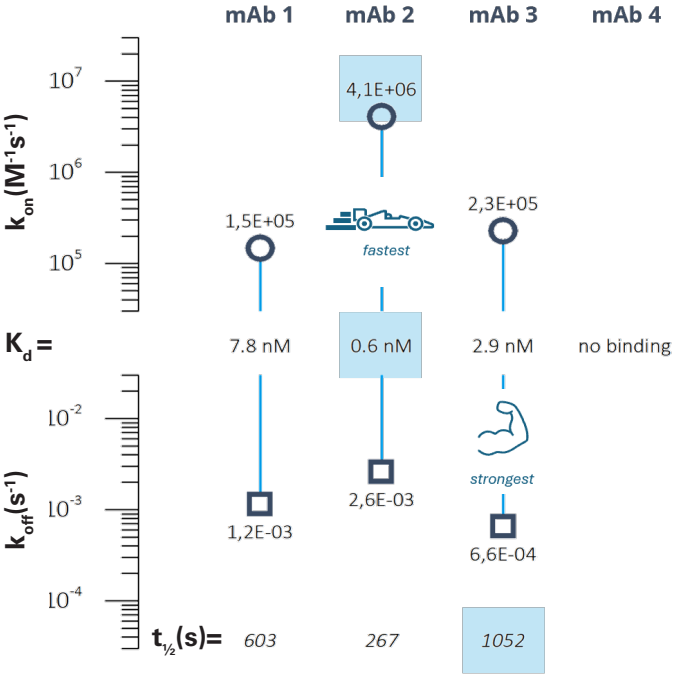


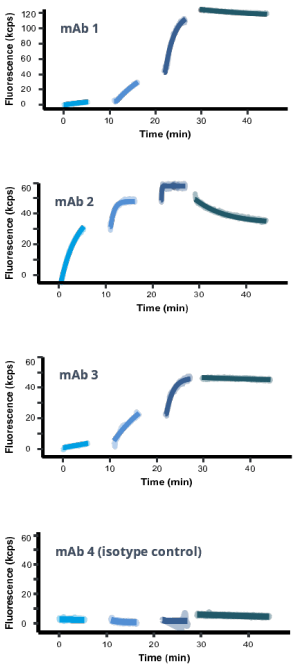


The *in vivo* efficacy of checkpoint inhibitors is rationalized by scIC-derived binding kinetics: Stable binding of Nivolumab to PD-1 enables T-cell activation.

Biologics development

On-cell characterization of mono- and multispecific antibodies and other biologics





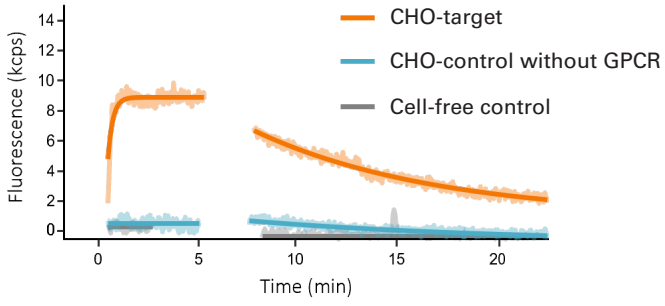
High affinity ≠ strong binder

3 different mAbs binding receptor of interest on live HEK cells, and one negative control isotype.

Kinetic analysis reveals different binding signatures.

New Targets

Biophysical analysis of so far inaccessible cell surface receptors (GPCRs,...)



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