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High quality screening and characterization applications using label-free protein interaction analysis

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High quality interaction data is essential for successful proteomics applications ranging from rapid screening and identification of potential binding partners, to detailed characterization studies providing mechanistic insights. Label-free protein interaction analysis systems from Biacore provide high quality, real-time data that meet these needs, including binding specificities, affinities and kinetics, as well as interactant concentrations. A range of systems enable, for example, simultaneous profiling of up to 400 biomolecules interacting with a single sample under identical conditions, or highly flexible assays providing the highest performance characterization of binding interactions. This enables a variety of applications, such as screening for binding partners in interaction networks, characterization and selection of antibodies, and expression profiling of populations of selected biomarkers.

In one example, a peptide array was used to map the kinetic binding properties of antibodies, using amino acid-substituted variants of the epitope. This provided insights to the progressive change in specificity or selectivity connected to antibody maturation.

In another example related to the screening of biological fluids and extracts for potential interaction partners, a highly efficient, non-destructive procedure for recovering bound proteins for subsequent identification by mass spectrometry is described.