Creoptix
a Malvern Panalytical brand

Brochure

WAVEcontrol

Software for label-free analysis: fast and automated

Workflow-based design offering both flexibility and functionality

Every step from assay setup over data evaluation to report writing is simplified with an intuitive design that mirrors the way you work

1

Design your experiment

Smart design for your experiment before you begin, with our built-in optimizer to simulate data

2

Set-up your experiment

Use our wizards for a fast and efficient experimental set-up, or manually edit for full flexibility. WAVE goodbye to serial dilutions and DMSO corrections with waveRAPID®

3

Evaluate your data

Apply our predefined models to evaluate the results of your experiments. Adjustments can be fully fine-tuned. Evaluate your data with traditional (global) fit or let Direct Kinetics evaluate the data for you

4

Report your data

Get access to raw data and export your results in a customizable PDF or Word format with just a few clicks

Simple and improved user interface

Intuitive Wizards

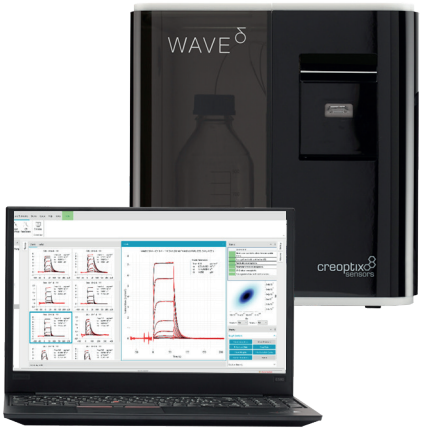
CFCA (calibration-free concentration analysis), ligand screening, and waveRAPID® wizards to increase throughput and time-to-result

Smoother Set-Up

Copy/paste and import from Excel files for large screens. Drag and drop for full flexibility

Improved Evaluation

More models for regeneration-free kinetics and automated evaluation with Direct Kinetics (1-click evaluation tool)



License models

Every waveSYSTEM® comes with two (2) software licenses. As long as the device is under warranty, both software licenses fall under the subscription model. Once the instrument is out-of-warranty, both software licenses become perpetual unless a subscription model is purchased.

Perpetual license

- Pay once, use as long as you want
- Includes software updates with stability and usability improvements
- Excludes software version upgrades

Subscription model

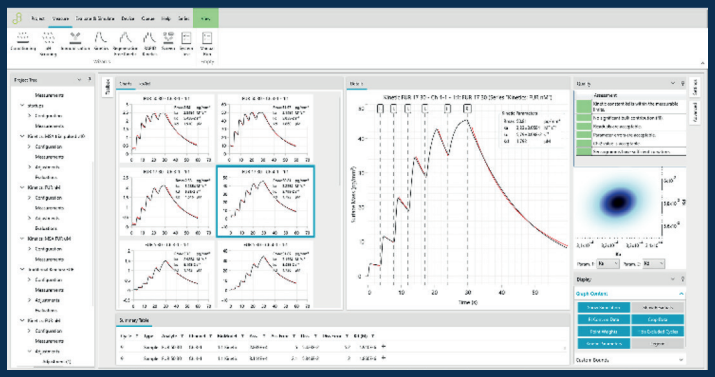
- Enjoy all options for a full year
- Includes software updates with stability and usability improvements
- Includes software version upgrades

waveRAPID® – A new way of measuring kinetics

Kinetics in hours instead of days

Full kinetics from a single well

RAPID stands for Repeated Analyte Pulses of Increasing Duration. This new way of measuring kinetics allows you to probe the interaction of interest using injections from a single well, with short pulses of increasing duration.

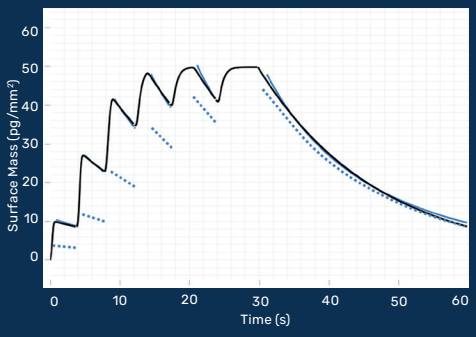


Short pulses of increasing duration but same concentration are used for determining full kinetics.

Immune to refractive index disturbances

waveRAPID® allows you to overcome a fundamental challenge of refractive index-based sensors: liquid refractive index disturbances that need correction. This is especially useful when dealing with molecules that significantly alter the refractive index of the buffers used.

Using waveRAPID®, only the dissociation part of the binding curves is needed to extract both association and dissociation rates.



A full kinetic characterization can be performed using only the dissociation parts of the binding curve. Higher association rates result in characteristic upwards shifts of the dissociation parts and viceversa. The dotted line represents an interaction with the same dissociation rate, but 3x lower association rate than the interaction represented by the solid line.

More space in your plate
WAVE goodbye to serial dilutions

Screen faster
Combine primary and secondary screens in one run

Speed up assay development
Find the right density, assess non-specific binding and find out quickly whether your protein is still active quickly

Skip DMSO correction
Affinity and kinetic rates are not affected by bulk refractive index differences

Save time and money
Reduce sample and reagent consumption

Reduce time-to-market
Speed up drug development process

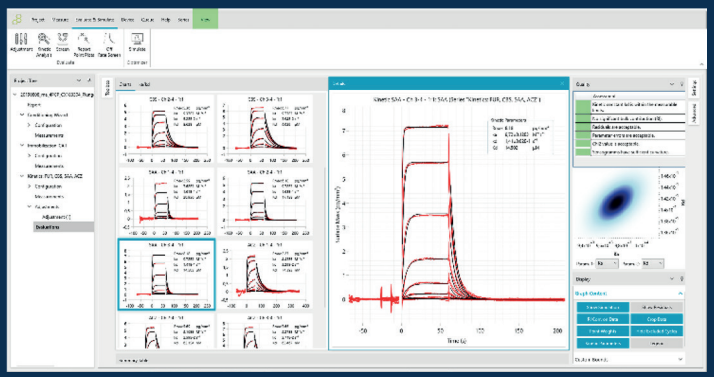
Direct Kinetics – Automated, objective way of evaluating data

Global fitting

Global fitting is the most commonly used data evaluation function in real time biomolecular interaction analysis. Based on non-linear least-squares fitting, this method finds rates and affinity constants to fit curves as close as possible to the actual data.

Globel fitting needs human intervention for obtaining best results and is driven by “what looks good”. A well-trained scientist would need 3-5 minutes to analyze one interaction.

With Direct Kinetics, instead of optimizing the visuals, the error on the determined parameters is minimized. Dozens of interactions are automatically analyzed in 3-5 minutes.



A confidence region plot (right side of image) shows you the reproducibility of your results.

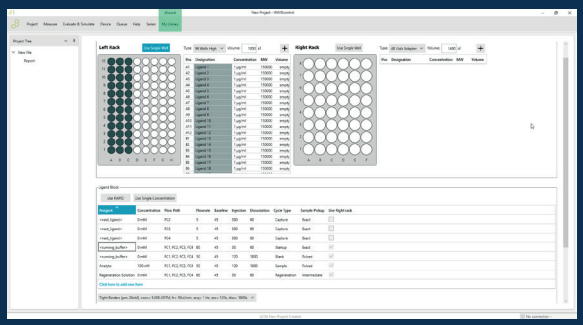
Evidence-based estimation

At Creoptix, we focus on the evidence supported by your biomolecular interaction data instead. With our brand new Direct Kinetics tool, we rely on robust statistical estimators to deliver an automated calculation of your kinetic parameters with a mathematically sound error analysis.

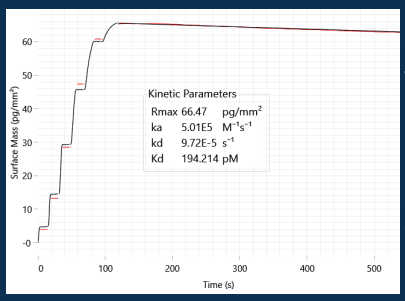
Ligand Screening - A faster, flexible way to screen and characterize antibodies

Avoid avidity effects and complex ligand regeneration

Multiple analyte injection is the preferred method to screen for binding partners. However, this approach is not suitable for all biological systems. Kinetic analysis, for example, is best achieved when immobilizing the antibody on the surface and injecting the antigen as the analyte. It is important to maintain the same immobilization levels for all antibodies to ensure correct interpretation of the results, however.



The Ligand Screening Wizard allows easy and intuitive assay setup by creating a “ligand block”, where ligand samples are cycled through the biosensor surface in sequential capture/regeneration steps. This also helps avoid avidity effects and complex ligand regeneration steps.



The Ligand Screening Wizard works in perfect harmony with the “target level” function, ensuring that ligands are always captured at the same density level for correct data interpretation.

Uncomplicated and adaptable antibody screening and characterization

Guided protocol for three different surface chemistries

Reduced hands-on time on assay set-up

Wizard available for screening and full kinetics (waveRAPID)

Controlled ligand level density automatically

Ligand capture level control – target level function

CFCA - A calibration-free approach to quantification

Label-free concentration analysis

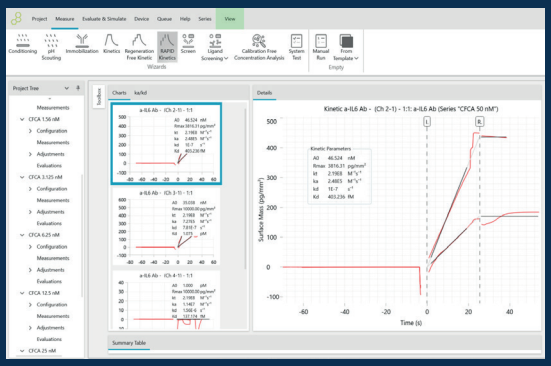
CFCA stands for “calibration-free concentration analysis”.

It’s a label-free approach using the relationship between the diffusion properties of the analyte and the absolute analyte concentration.

The WAVEsystem allows you to measure the binding of an injected protein (analyte) to a binding partner immobilized on the surface (ligand) under diffusion-limiting conditions. The transport of the analyte to the sensor surface determines the observed binding rate. The system is said to be under mass transport limitation (MTL) and dose-response curves are independent of the binding affinity; instead, they are determined by the protein diffusion properties.

This approach can be useful in situations when:

- It is important to determine the “active” fraction of a sample (i.e. only the fraction capable of binding to the ligand)
- No satisfactory calibrant is available for the analyte under study
- If there’s a mismatch between buffers or matrices, which would prevent calibration in traditional setups
- Fast quantification is required without sample purification; antibodies can be quantified in serum and cell lysate



No need to set calibration curve and suitable standard

Analyte concentration calculated with prior knowledge of the diffusion coefficient of the analyte together with analysis of the observed binding rate under partial diffusion-limited conditions

Active protein fraction quantification

“Active” sample quantification is enabled since the analyte only binds to the ligand

Streamlined workflow as antibodies are quantified directly from serum or cell lysate

Macromolecules (MW above 5,000 Da) can be determined easily and accurately at small quantities even from unpurified samples

Complete control of your analysis from start to finish

Request an online demo today
visit www.creoptix.com
or contact us via
support.creoptix@malvernpanalytical.com

To make the most out of your WAVEsystem,
contact our team at support.creoptix@malvernpanalytical.com

label-free data
like you've never seen before

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