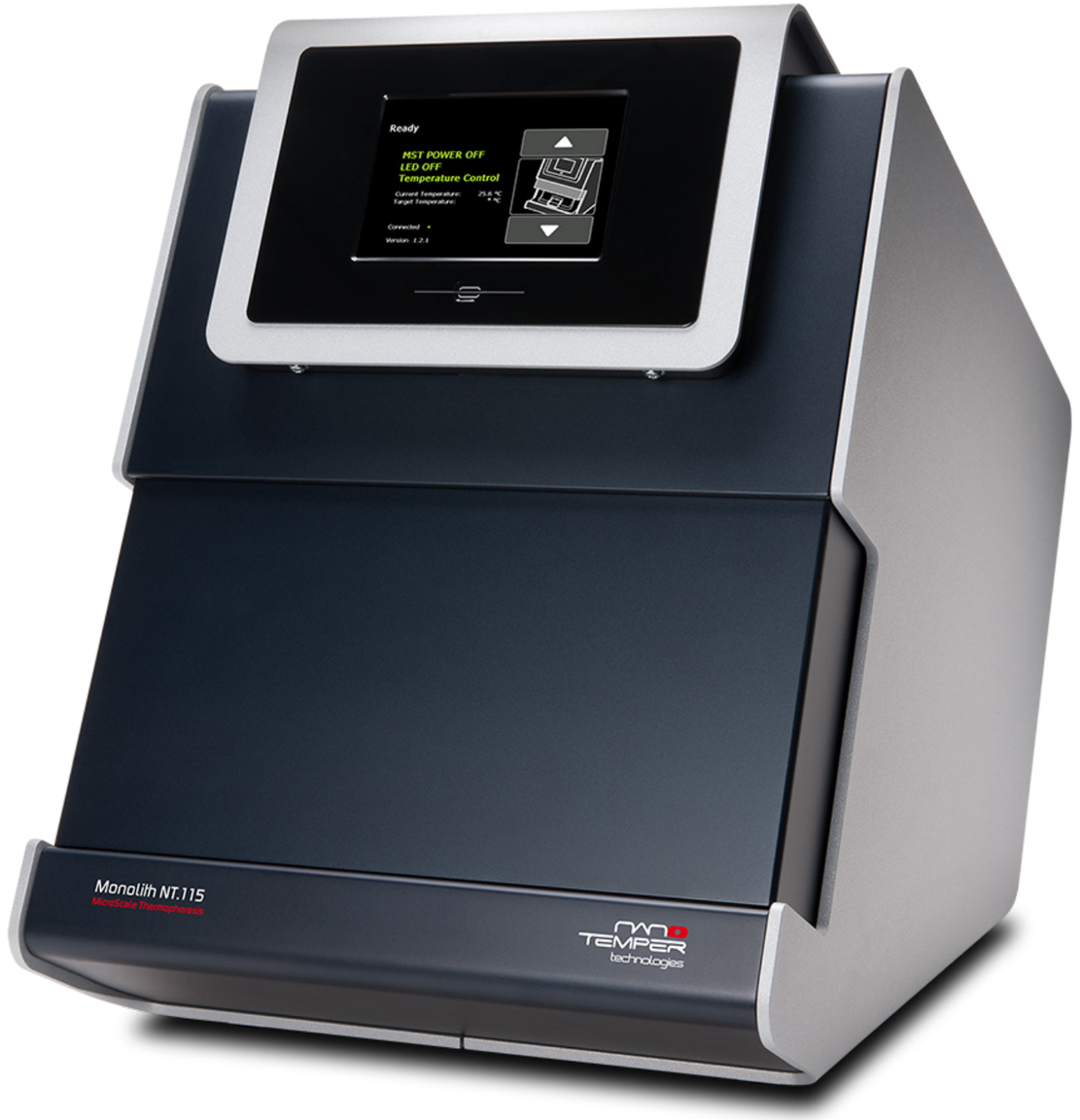
When binding affinity matters.

Swiftly measure binding interactions using very little sample with the Monolith

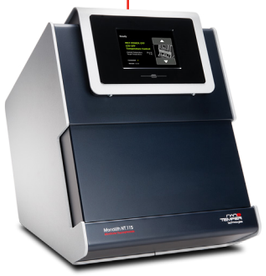


When choices matter.

Anyone can measure binding affinity in minutes. Each system is simple to use and not only has a friendly lab footprint but is maintenance-free.

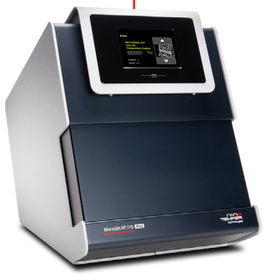
Monolith NT.115
Most versatile

Favorite for binding interactions



Monolith NT.115Pico
High sensitivity

Detect affinities in low pM range



Monolith NT.LabelFree
Dye free

Analyze label-free using intrinsic fluorescence

Monolith NT.Automated
Workhorse

Fast screening with reliable results

Add Screening Unit for fully automated sample and liquid handling

When decisions matter.

Move forward with the best candidates quickly—get accurate K_d values in minutes using very little sample consumption.

Get results quickly

Capture measurements in minutes not hours or even days.

Measure any sample type

Easily measure interactions between molecules of different molecular weights or classes.

Consume very little sample

Determine dissociation constants using a lot less sample than other methods require.

Do minimal sample prep

Analyze samples in any buffer or bioliquid and in close-to-native conditions without purification or immobilization steps.

Optimize assays easily

Feedback is immediate making optimization of assays so much easier.

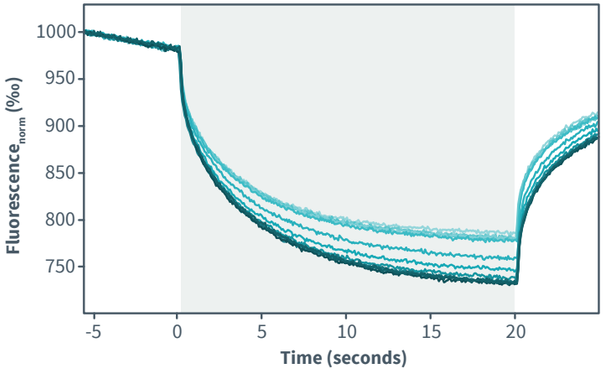
Evaluate the most difficult targets

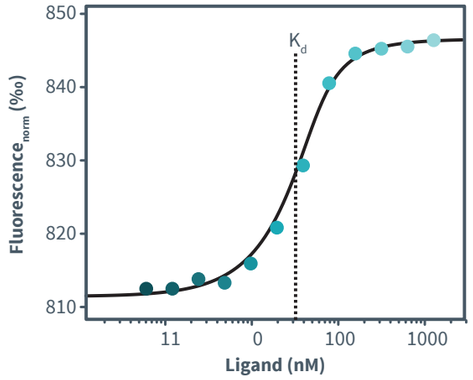
Running into a roadblock? Get results even when traditional methods don’t work.

When solutions matter.

Monolith uses MicroScale Thermophoresis (MST) technology to quantify binding events. One partner is typically labeled with a fluorescent dye and becomes an extremely sensitive reporter for all binding interactions. These events, weak or strong, cause a change in MST signal that is easily detected. The results are automatically translated into precise and quantitative K_d values.

Getting accurate results quickly requires the use of high quality capillaries. Advantages are numerous—minute amounts of samples are analyzed in-solution, under native or close-to-native conditions, and in an immobilization-free environment without the need for purification.

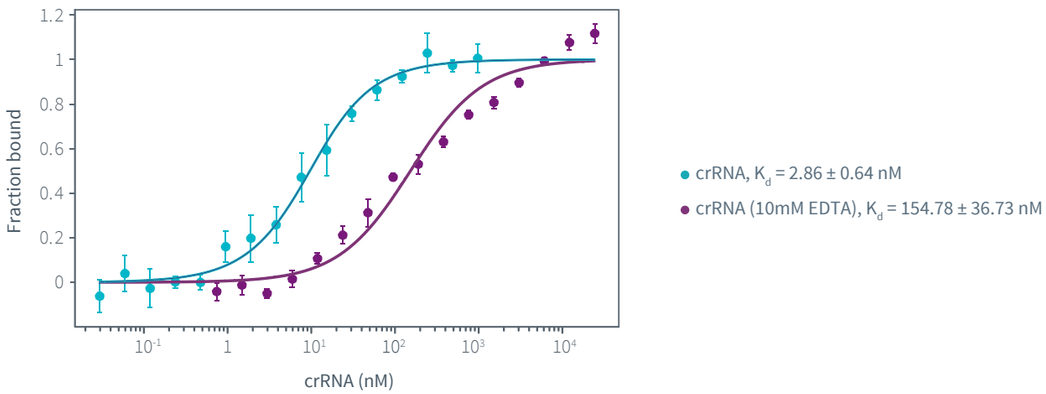




When confidence matters.

Monolith is all about accurately determining binding affinity in minutes. The strength of the interactions between a fluorescently labeled or intrinsically fluorescent sample and a binding partner (or ligand) are measured while a temperature gradient is applied (gray box) over time (left figure). From this, binding affinity (K_d) is automatically calculated from a fitted curve that plots normalized fluorescence against concentration of ligand (right figure). Get answers for 1, 16 or even 96 samples at a time, and be confident that results are precise and complete.

Monitoring MG2+ dependence of CRISPR RNA to a Cas9-like nuclease Dong et. al., Nature, 532:522-536 2016



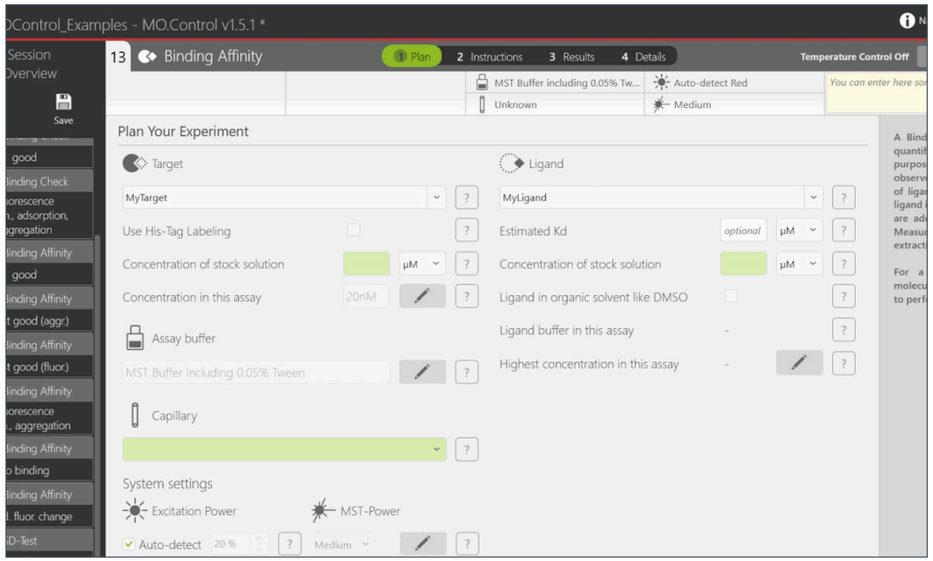
When insight matters.

More knowledge means more decision-making power. Determining binding affinity between large or small molecules, nucleic acids or even ions provides answers to important mechanisms of action or regulatory pathways.

For binding affinities, the lower the K_d, the higher the strength of the binding interaction between two molecules. By understanding this with the Monolith, Dong et. al. finally had a view into how cellular expression and regulation work in their CRISPR RNA model.

When answers matter.

Anyone in the lab can run binding interaction experiments—MO.Control software calculates all the volumes and dilutions needed to run an assay. With guided setup, real-time optimization tips, and built-in knowledge-based advice, users feel confident their experiments will run smoothly. MO.Control saves time by automatically calculating binding affinity values and instantly generating complete result summaries. Exporting data and reporting results is super easy with just one click.



When fit matters.

	NT.115	NT.115 Pico	NT. LabelFree	NT.Automated
Experimental time	15 minutes or less			
Dynamic range	1 nM to mM	1 pM to mM	10 nM to mM	1 pM to mM
Detected molecule range	Molecular weight: 10^1–10^7 Daltons Size: 0.1 nm–1 µm			
Samples per run	16 manually			96 manually, higher throughput with NT.Automated Screening Unit
Minimum sample volume measured	4 µL			3 µL
Temperature control	22 °C to 45 °C (± 0.3 °C)			25 °C (actively controlled)
Fluorescence channels	2 (Blue, Green or Red)	Up to 2 (Pico-Red, Blue optional)	1 (UV)	Up to 4 (Blue, Green, Red, Pico-Red, UV)
Dimensions	33 cm W x 45 cm H x 51 cm D			85 cm W x 63 cm H x 57 cm D
Weight	24 kg			70 kg
Optional upgrade				NT.Automated Screening Unit (for automated sample and liquid handling)

A selection of assay kits, control kits, labeling kits as well as specific capillary types are available to measure binding affinities for many protein types. Visit nanotempertech.com to see the entire list of consumables.

NANOTEMPER

nanotempertech.com