UNCHAINED LABS

Epic Gene Therapy Tools

Combine and conquer

Stunner is the only system that pulls together UV/Vis concentration, dynamic light scattering (DLS) and static light scattering (SLS) data from the same 2 µL sample. Dig in to your AAV by bringing protein and ssDNA concentrations together with light scattering to get the total capsid titer and empty/full ratio. Rack up payload concentration and size data on any nanoparticle all at once. Without skipping a beat, you'll know if your AAV or nanoparticle is good to go.

AAV capsid titer

AAV empty/full ratio

LNP total RNA quant

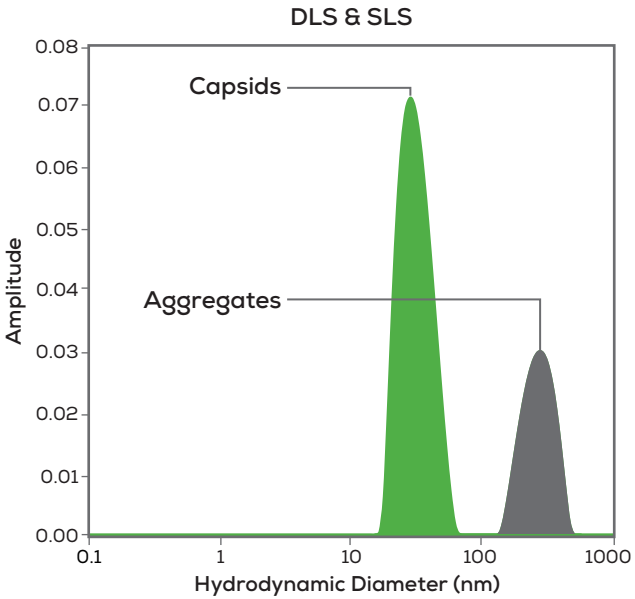
Nanoparticle payload quant

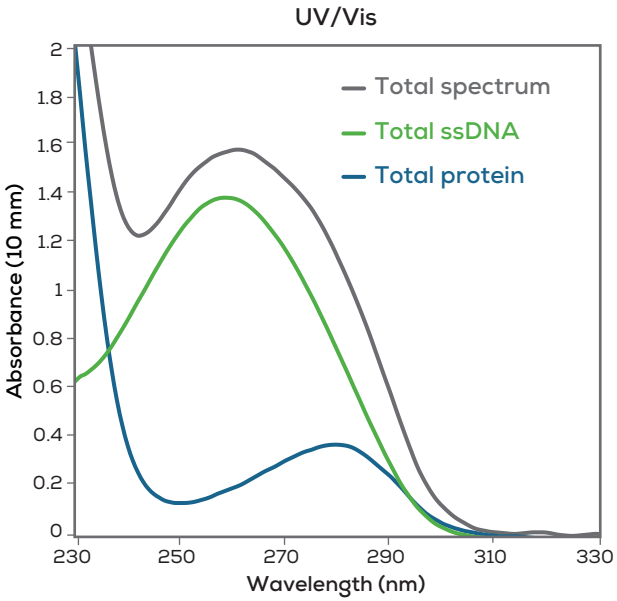
Aggregation

Sizing & polydispersity

Teeny sample, tons of info

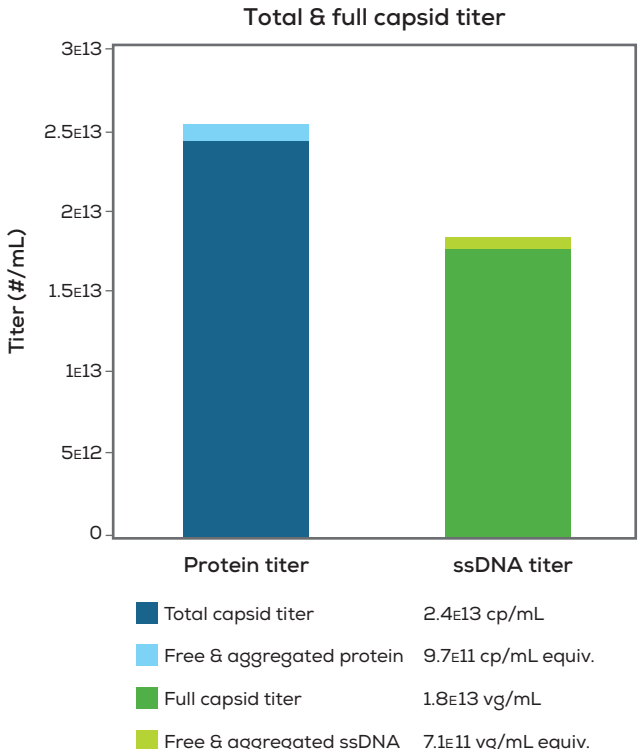
Drop in 2 µL of your AAV and before you can blink, DLS & SLS figure out how many intact capsids you have or if a bunch of aggregates are screwing things up. See empty/full ratio, total protein and total ssDNA in about a minute with UV/Vis. Don't worry about extinction coefficients or overlapping spectra – Stunner does all the math for you.

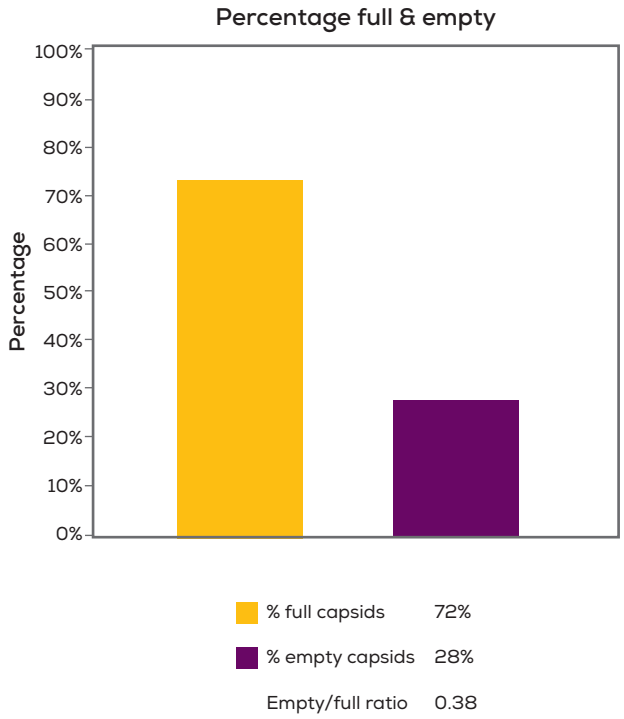




Know your AAV inside out

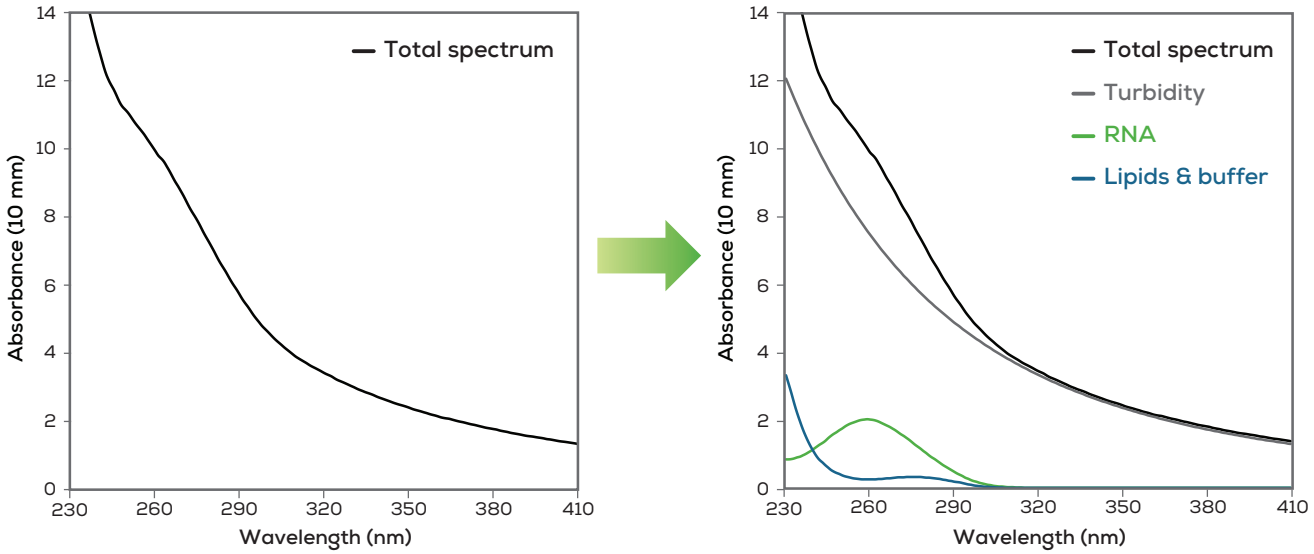
Get to the numbers you actually want – titers. Stunner bridges DLS and UV/Vis data to tally up how many full and empty capsids are present, and how much extra protein and DNA is left over. Take your cleaned up AAV and sneak a peek down to 10^{12} vg/mL. In just one assay, Stunner's dye-free, label-free, standard-free, hassle-free workflow tells the whole titer story.





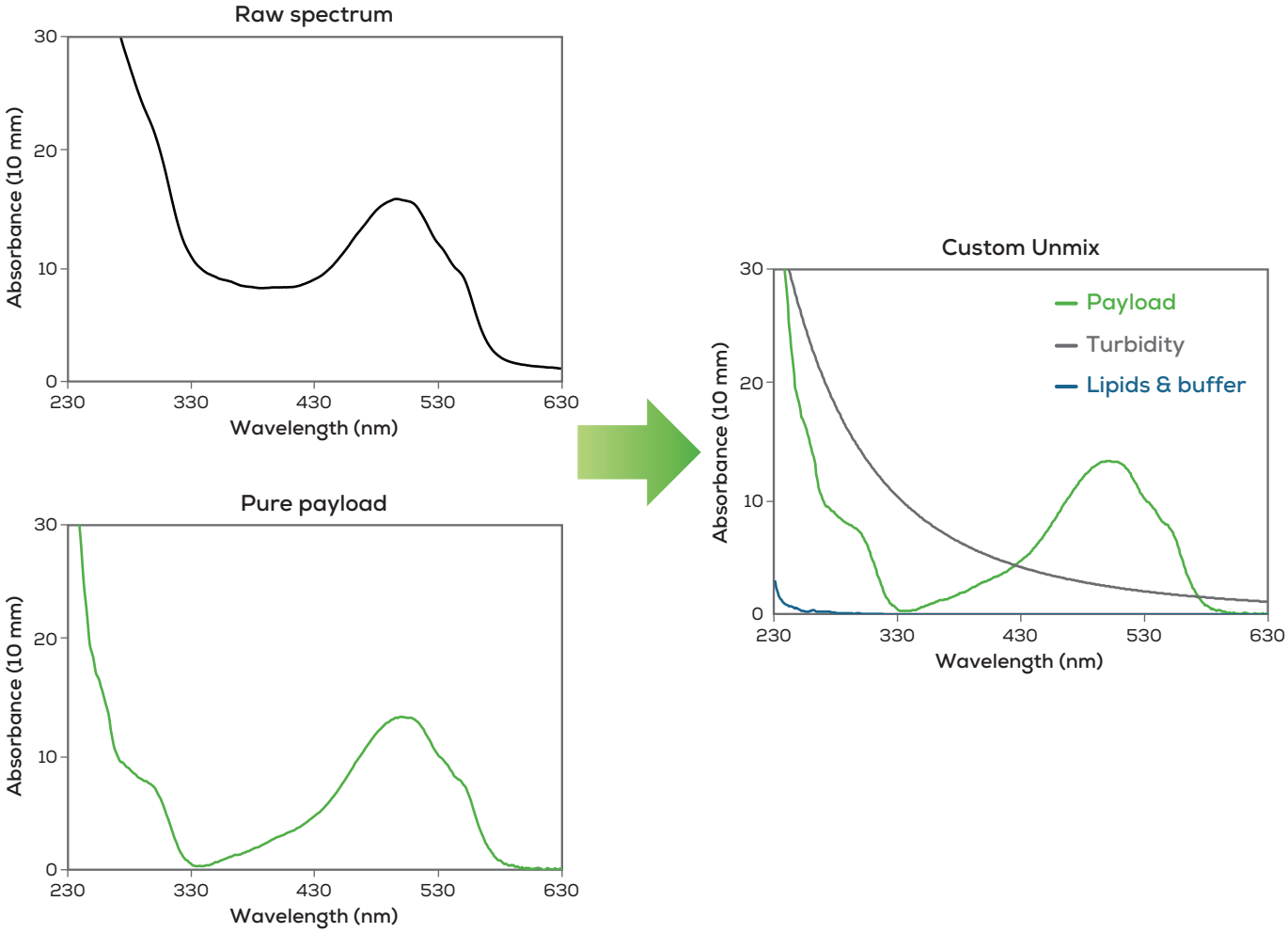
See through the fog

Cloudy solutions of LNPs and other nanoparticles hang up other techniques but Stunner's short pathlengths teamed up with DLS and UV/Vis get you the answers you need. Cut through all that turbidity with Unmix and check out just the absorbance signal from your payload without any dyes, reagents or complicated workflow.



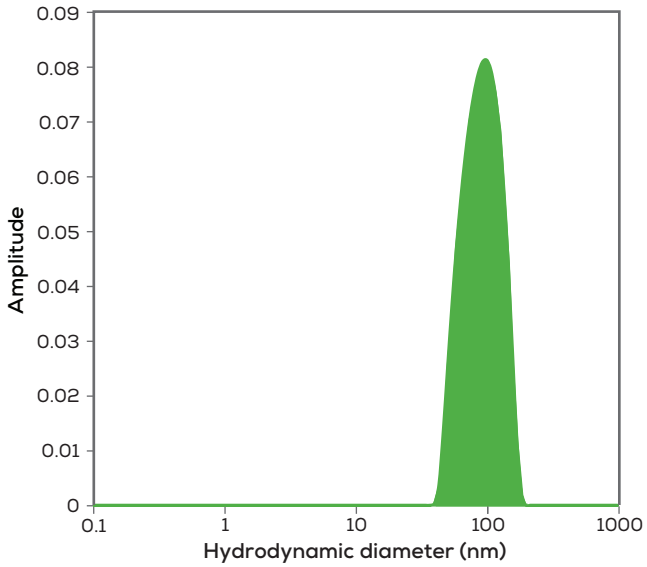
Break down data, not your particles

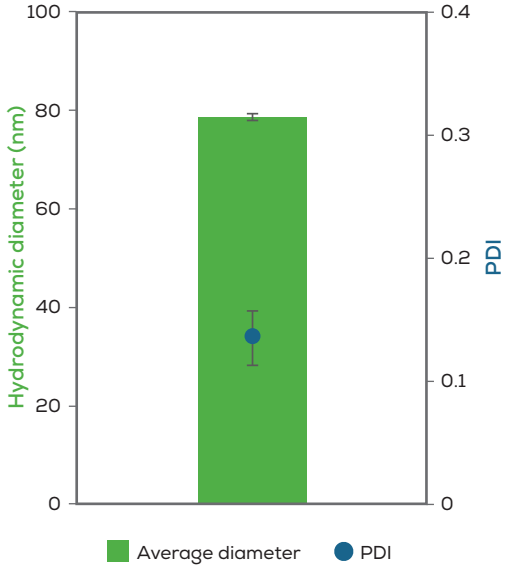
Teach Stunner all about the UV/Vis absorbance of your nanoparticle and it will spot exactly the signal you want to know about. Skip the disruption step and quantify any payload: RNA, DNA, any protein or whatever small molecule. Stunner makes quantification crazy simple to free you from complicated disruption workflows, costly dyes, and wasteful standard curves.



Slam through tons of nanoparticle sizing

Stunner's DLS gives you the high-throughput power to round up size and size distribution data on 96 nanoparticle samples in less than 1 hour. Walk away from one-by-one DLS that requires tons of sample and hefty hands-on time. Beef up your sizing statistics with as many replicates as you want and minimize your time at the bench.





Cut loose from manual buffer exchange

Buffer exchange and sample concentration are the time consuming, hands-on chores you have to deal with before all the things you really want to do. Big Tuna automates exchange to formulate, concentrate and clean up proteins or gene therapy vectors like AAVs, LNPs, and VLPs – with just 30 mins of setup time. Skip the slow and manual ways of prepping samples to free yourself up for other critical work.

AAV

LNP

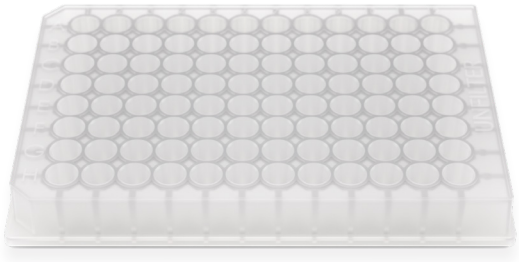
VLP

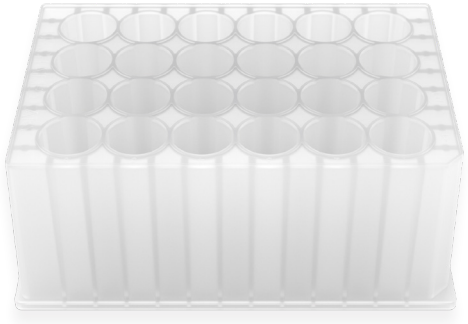
mRNA & DNA

Protein

Go big or keep it small

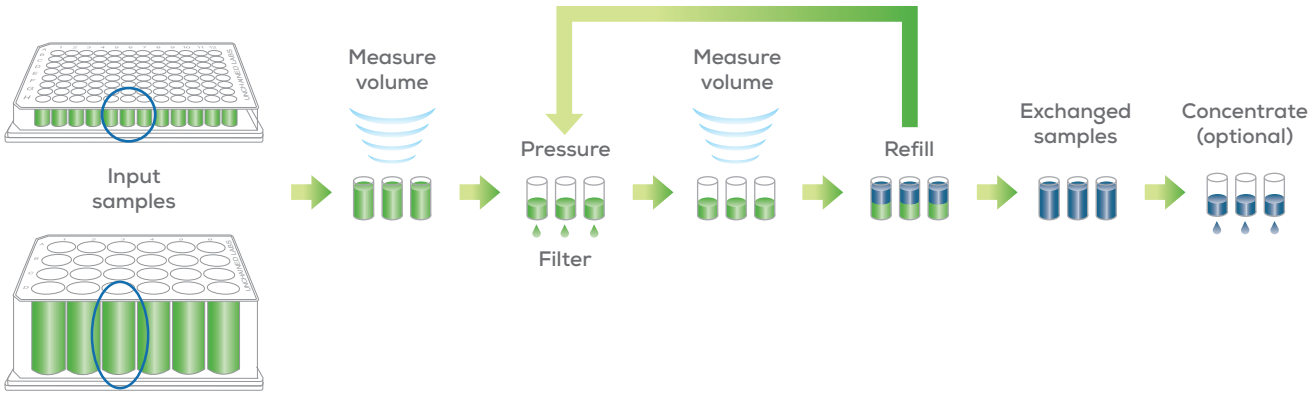
Big Tuna serves up two different plate-based formats that let you exchange and concentrate 24 or 96 samples in parallel. Use Unfilter 96 to exchange as little as 100 µL for up to 96 different samples in a run. Unfilter 24 lets you go big and exchange as much as 8 mL on up to 24 samples. With different molecular weight cutoff options, you always have the right Unfilter for the job.





Hand it off

Big Tuna keeps buffer exchange even across the plate with its unique pressure-based UF/DF process and gentle mixing. Its acoustic sensor measures the volume in every well before and after each cycle to track every sample's exchange rate. Then Big Tuna figures out on the fly how much buffer to add to even things out.



Dominate AAV capsid stability

Uncle teams up with SYBR Gold to get a read on when your DNA starts to leak – way before AAV capsids pop at higher temps. Track the disruption of your capsids with protein intrinsic fluorescence or tag in DLS and know if you've got problems with aggregation. Uncle packs three unique technologies into one instrument to answer all your AAV stability questions.

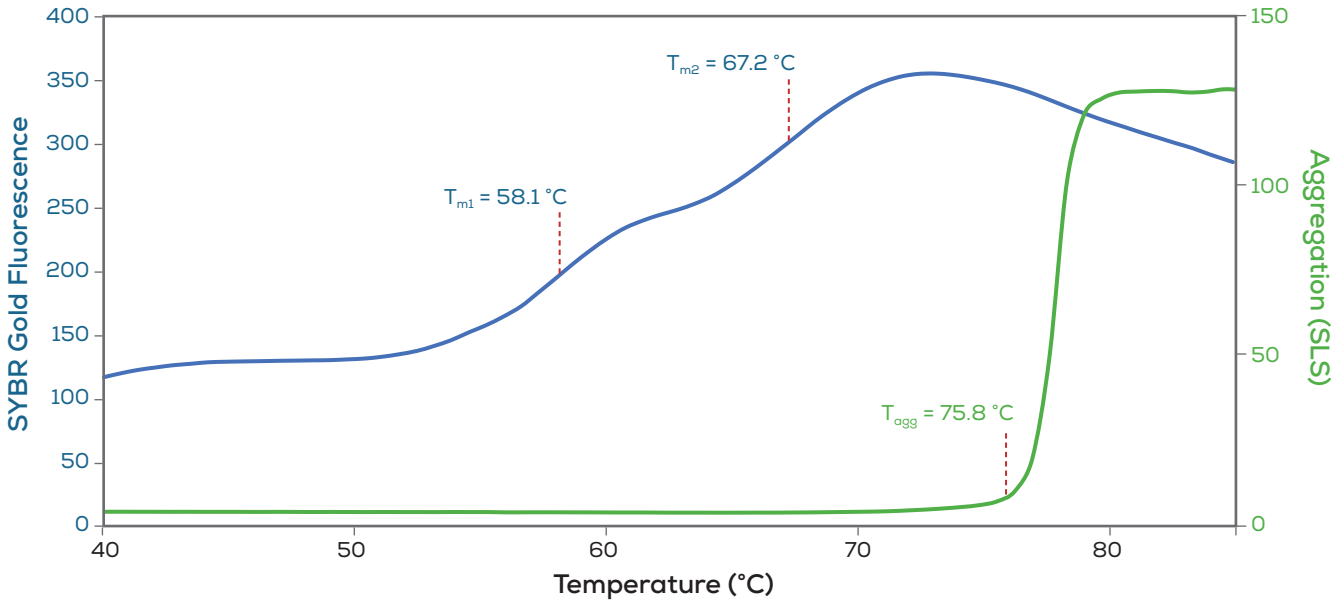
Capsid stability

Genome ejection

Aggregation

See when capsids leak & pop

Uncle pairs up full spectrum fluorescence and SLS to get a unique picture of AAV genome ejection and aggregation – all in one experiment with just 9 µL per sample. Run up to 48 samples at once to see how different serotypes, buffers and pH shake things up when it comes to stability. Use total fluorescence to quantify initial free DNA at the start of your run, and the amount that's on the loose after a thermal ramp.

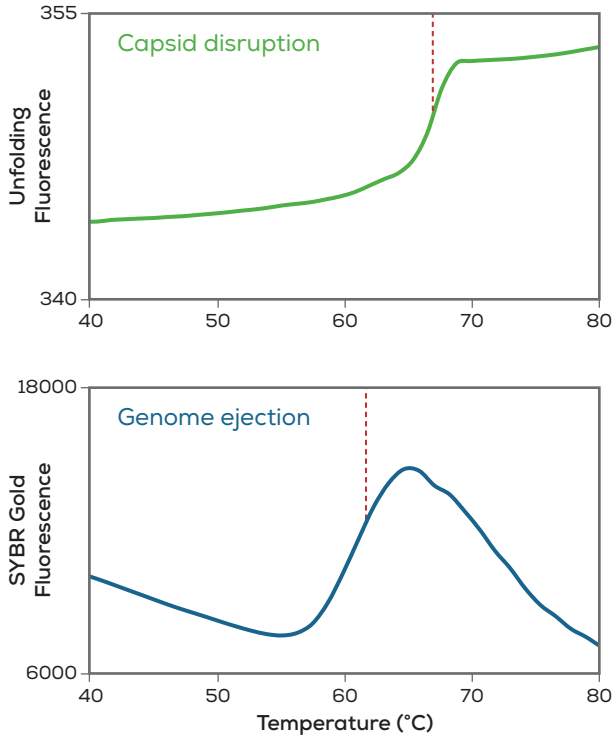


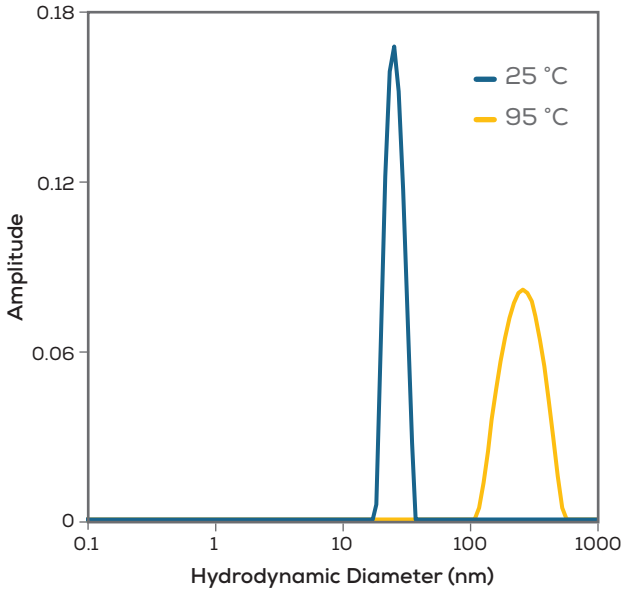
Don’t miss out

Capsid disruption and genome ejection happen independently – so measuring just one or the other won’t give you the full stability picture. Uncle dishes out both, so you never miss a beat.

Know you’re good to go

Check DLS before every run to see if you’re in the clear or if aggregation’s gotten out of hand. World-class DLS easily spots right-size capsids – from rock-bottom sample volumes and concentrations down to 5E11 cp/mL.





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