ANALYSE LIPID NANOPARTICLES AND OTHER DRUG DELIVERY VEHICLES ON A PARTICLE-BY-PARTICLE LEVEL

IZON

THE EXOID: A POWERFUL TOOL FOR PARTICLE ANALYSIS IN NANOMEDICINE

- Simultaneously measure size and concentration, or size and zeta potential of lipid nanoparticles and other drug delivery vehicles in solution
- The single-particle nature of Tunable Resistive Pulse Sensing (TRPS) enables unmatched resolution, highly suited to analysing polydisperse samples
- Accurate particle size distribution analysis lends the Exoid to stability studies

PRECISE PARTICLE SIZE DISTRIBUTION ANALYSIS

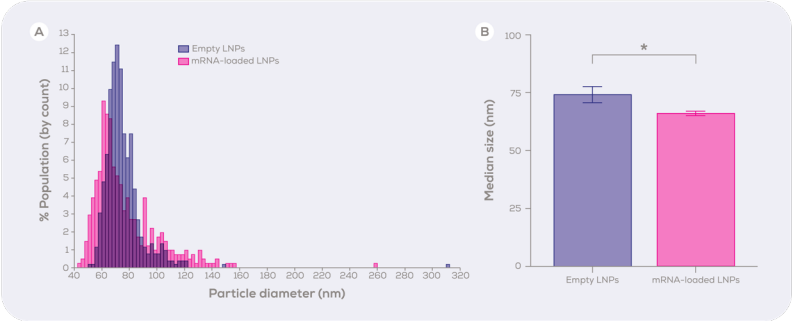


Figure 1. Size of empty LNPs and mRNA-loaded LNPs. (A) Representative size distribution graph generated using the Exoid. (B) Median size ± interquartile range of empty LNPs (n=4) and mRNA-loaded LNPs (n=4), compared using the Mann Whitney U test, *p<0.05

COMPARE SAMPLES WITH CONFIDENCE

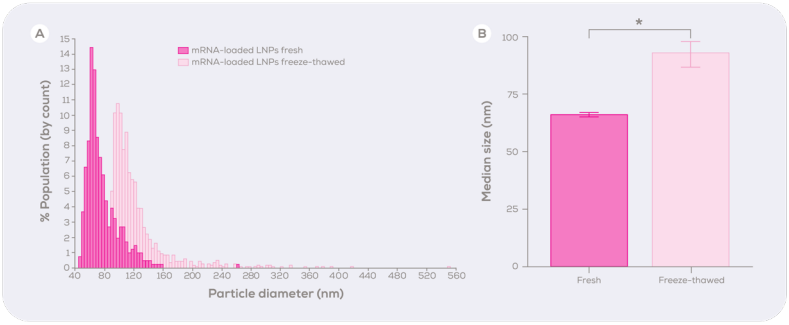
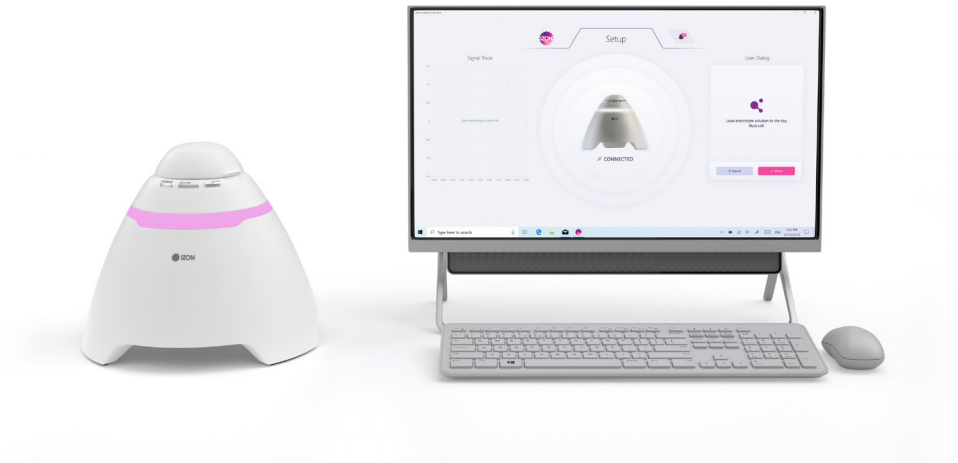


Figure 2. Size of fresh and freeze-thawed mRNA-loaded LNPs. (A) Representative size distribution graph generated using the Exoid. (B) Median size and interquartile range of fresh mRNA-loaded LNPs (n=4) and freeze-thawed mRNA-loaded LNPs (n=3), compared using the Mann-Whitney U test, *p<0.05.



MEASURE SIZE AND ZETA POTENTIAL

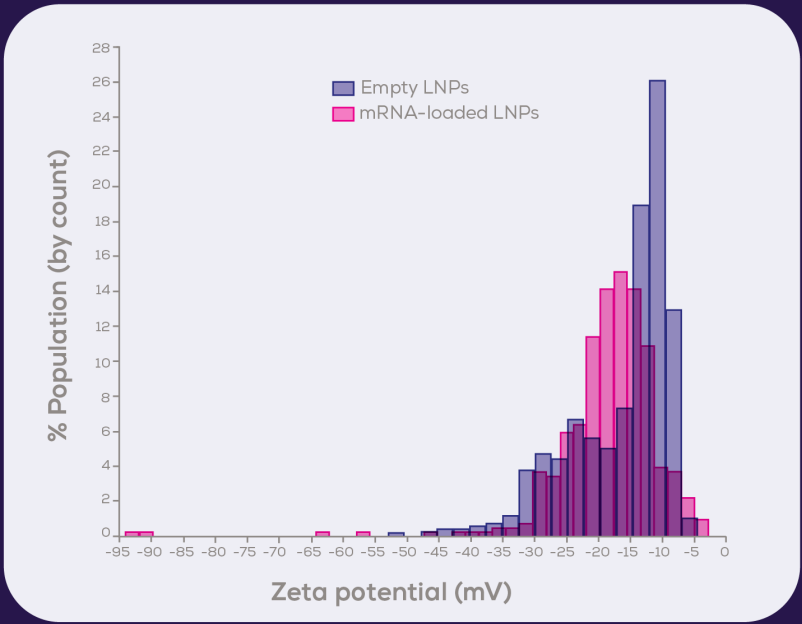


Figure 3. Zeta potential of negatively-charged empty and mRNA-loaded lipid nanoparticles

THE EXOID BRINGS SINGLE-PARTICLE CHARACTERISATION TO NANOMEDICINE

- Assess polydispersity

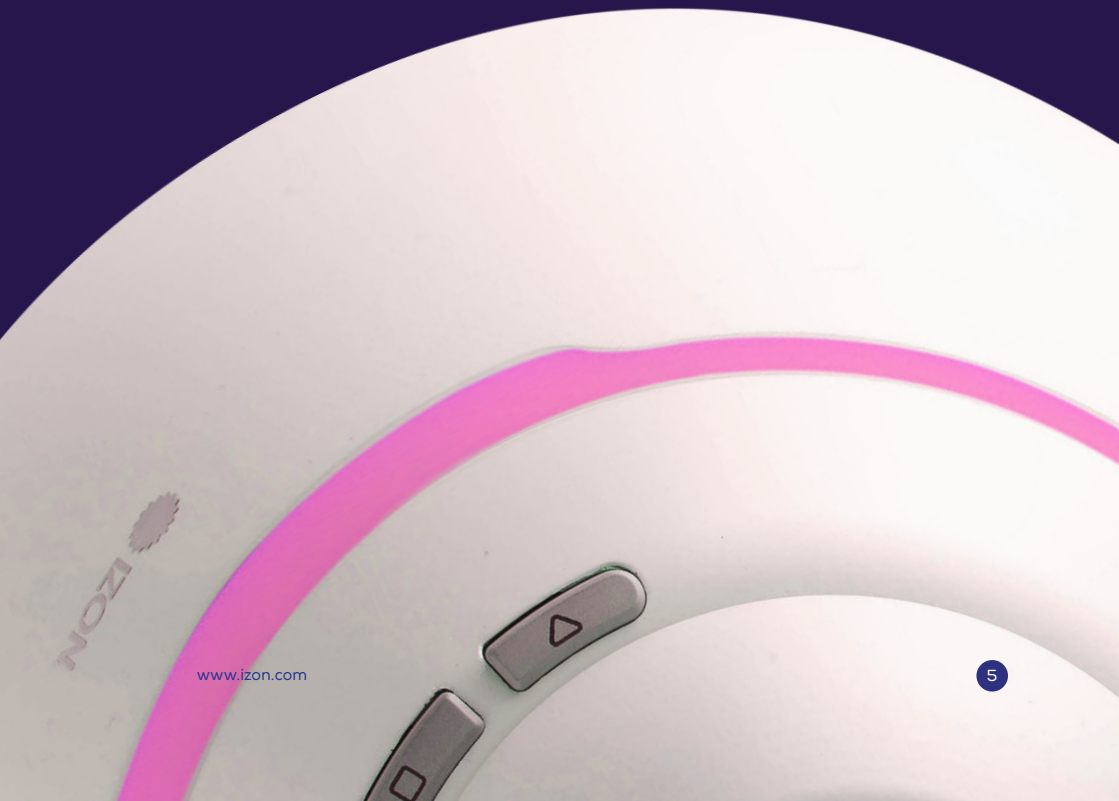
Capture the heterogeneity of particle size as part of your quality control process.

- Optimise process development

Identify subtle changes to size, concentration or zeta potential that might reflect aggregation during development or storage.

- Get deeper insights

Obtain high-resolution, single-particle insights rather than bulk estimates.



A STANDARDISED APPROACH TO NANOPARTICLE ANALYSIS

- Reproducibility enabled through the use of standardised NIST-traceable calibration particles
- Clean user interface
- Automated data processing
- No reliance on prior knowledge of optical properties of particles or dispersant

UNMATCHED ABILITY TO RESOLVE POLYDISPERSE SAMPLES

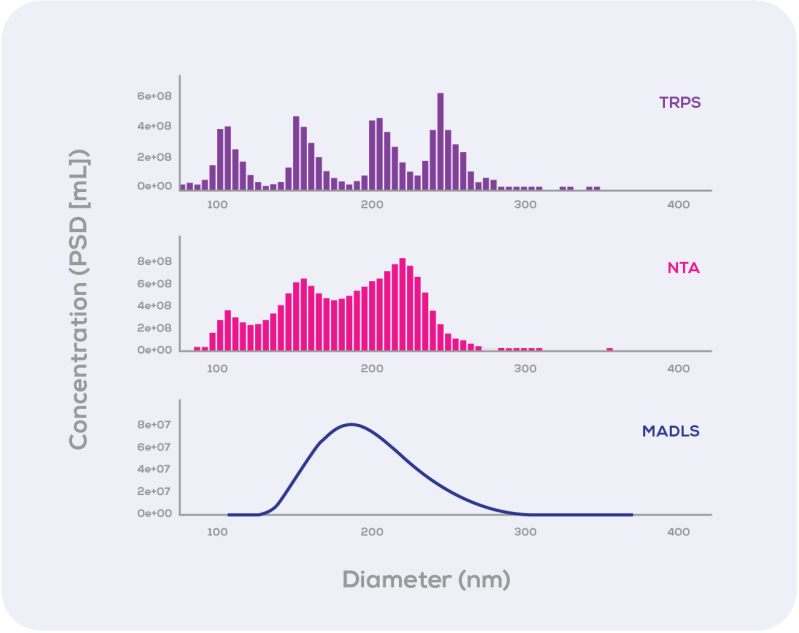


Figure 4. Comparison of Tunable Resistive Pulse Sensing, Nanoparticle Tracking Analysis, and Multi-Angle Dynamic Light Scattering (MADLS) measurements of a quadrimodal sample of polystyrene bead standards.