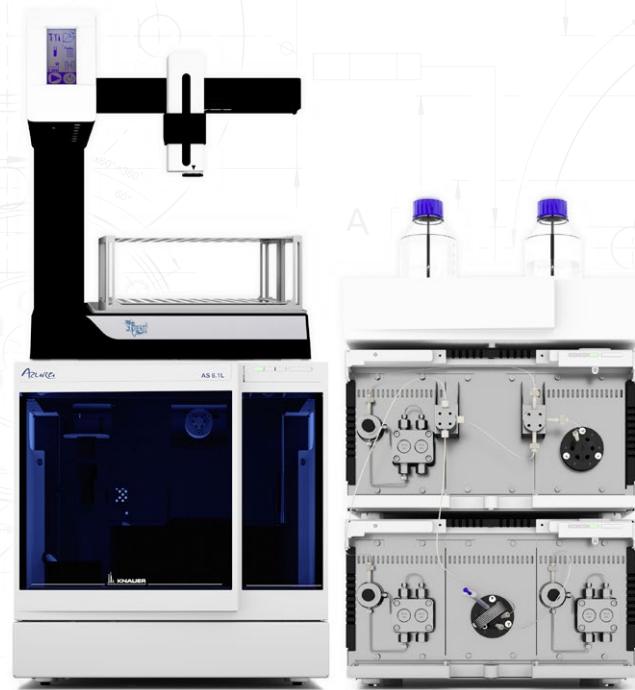


Science with Passion



IJM NanoScaler Pro

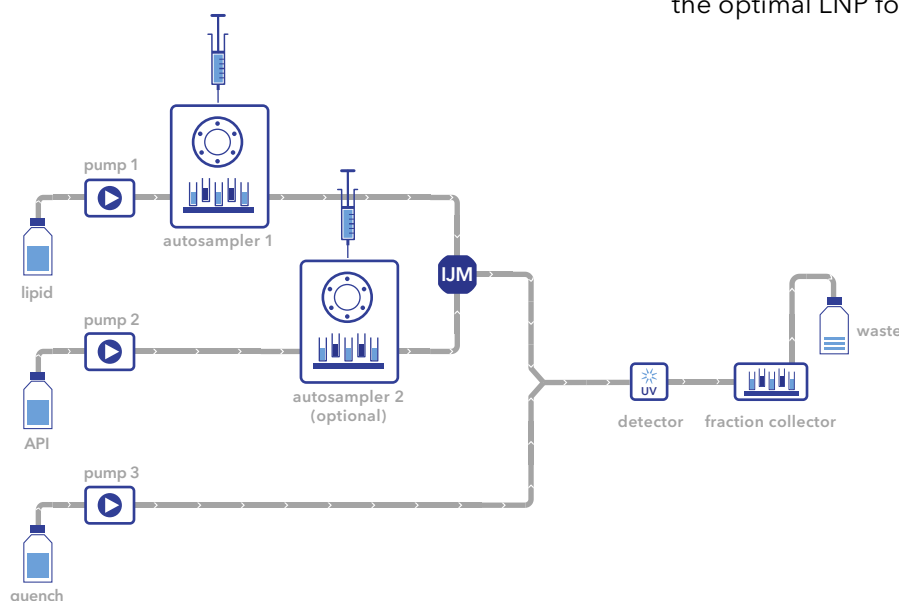
Automated screening system for lipid nanoparticle formulation

- **Create your optimal formulation** with automated screening for
 - early-stage API candidates
 - perfect lipid mixtures
 - optimal API/lipid ratio
 - precise flow rates
- **Formulation Discovery:** High-throughput screening with up to 108 samples and integrated fraction collection
- **Efficient Research:** Say goodbye to weeks of meticulous testing - our system accelerates research, saving valuable time and speeding up your workflow
- **Ensure Stability:** Maintain LNP sample stability with cooling options
- **Scalability Assurance:** Powered by our proven IJM technology, the system offers the reliability and seamless scalability of our large-scale IJM NanoProducer units

The IJM NanoScaler Pro: an automated screening system for lipid nanoparticle formulation

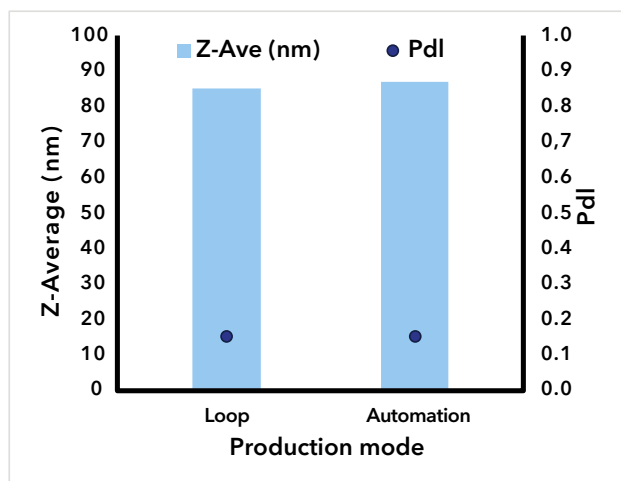
KNAUER's innovative IJM NanoScaler Pro system is designed for automated lab-scale formulation of lipid nanoparticles - allowing scientists to screen early-stage API candidates with different lipid compositions.

This new automated LNP formulation system, the IJM NanoScaler Pro, addresses the long-standing challenges in the field of mRNA and lipid nanoparticle (LNP) formulation. It eliminates the need for lab-intensive and time-consuming experiments. This breakthrough significantly reduces the time and material costs associated with screening for the optimal LNP formulation.



With our Impingement Jets Mixing (IJM) technology for lipid nanoparticle production and automated lipid and API sampling, the IJM NanoScaler Pro allows researchers to fine-tune encapsulation conditions for their API-based therapy. In addition, integrated UV monitoring facilitates the controlled collection of your formulation sample and minimizes sample loss.

Flow scheme of the IJM NanoScaler Pro



We tested the effect of automated LNP formulation on LNP properties compared to manual handling. Operating parameters were kept identical for both systems. We observed no significant difference in size, Pdl and encapsulation efficiency. Therefore, preclinical screening studies can be performed using the IJM NanoScaler Pro.

Comparison of size and Pdl of mRNA-LNPs formulated with Loop (NanoScaler) and Automation (NanoScaler Pro)

in cooperation with Curapath:

Lipid composition: ALC-0315, DSPC, Cholesterol, DMG-PEG ;
Molar ratio: 46.3/9.4/42.7/1.6; Buffer: PBS; TFR: 4.5 mL/min; No inline dilution

In addition to accelerating research, the IJM NanoScaler Pro offers scalability by utilizing the same IJM technology as KNAUER's GMP production systems. This seamless transition from small-scale experimentation to large-scale production has the potential to accelerate discoveries in the field of LNP-based therapeutics, reduce costs, and promote personalized healthcare solutions. It is a valuable asset to the scientific and medical communities seeking to advance the formulation of lipid nanoparticles.

(U)HPLC • FPLC • SMB • Osmometry and units for the production of lipid nanoparticles (LNP)