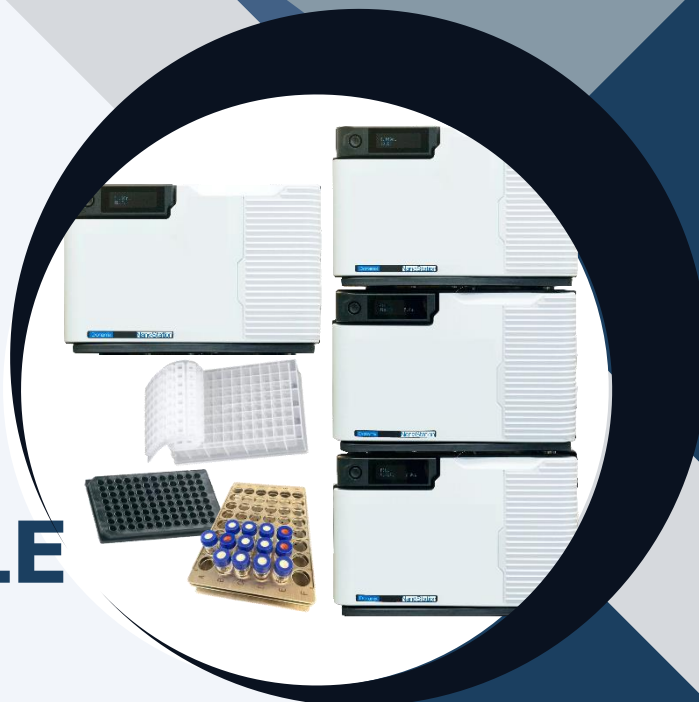


Dionamix

UNLOCK THE FUTURE OF LIPID NANOPARTICLE RESEARCH



INTRODUCING THE DIONAMIX NANOSTATION Pro

An all-in-one automated and unmanned solution for lipid nanoparticle (LNP) synthesis that enhances precision, increases throughput, and inspires groundbreaking research in nucleic acid therapeutics and small molecule-based medicines.

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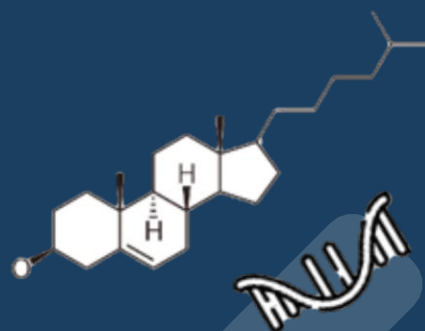
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Experience the Future of LNP Research with Dionamix NanoStation Pro

Revolutionizing Lipid Nanoparticle Research

The world of lipid nanoparticle (LNP) research is at a transformative crossroads. As the demand for more effective, targeted therapies increases, the need for precision and efficiency in LNP synthesis has never been more critical. Enter the Dionamix NanoStation Pro— a cutting-edge, all-in-one automated platform designed to redefine the landscape of LNP production.

For years, researchers have faced a host of challenges when it comes to synthesizing LNPs. The process, often characterized by time-consuming manual steps, is not only labor-intensive but also prone to inconsistencies and human error.

In response to these challenges, the Dionamix NanoStation Pro integrates advanced automation to transition benchtop work to highly controlled unmanned processes. By eliminating repetitive manual tasks, increasing throughput, and reducing human intervention, the NanoStation Pro empowers researchers to accelerate their work while minimizing the potential for costly mistakes. With precise control over every step of the fluid handling process, this innovative solution enhances both the reliability and scalability of LNP research.

Whether you are developing nucleic acid-based therapies or advancing small molecule medicines, the Dionamix NanoStation Pro is a game-changer. By offering unprecedented flexibility and efficiency, it supports a wide range of research goals, providing researchers with the tools they need to shape the future of medicine.

This brochure will delve into the standout advantages and capabilities of the Dionamix NanoStation Pro, showcasing how it can transform your LNP research and accelerate your path to groundbreaking discoveries.

LNP Research Challenges

Once a research objective is established, scientists typically undergo numerous iterations of formulation design, sample creation, qualification tests, stability testing, and eventually in-vitro testing. Although simplified here, this process is complex and demands many hours of skilled labor to produce viable test candidates. The NanoStation Pro eliminates the requirement for researchers to spend time preparing each lipid mix, allowing for unmanned high-throughput generation of candidate lipid mixes. By automating the lipid nanoparticle assembly process, it ensures accuracy and consistency across formulation runs. By eliminating manual intervention, the NanoStation Pro reduces human error and enhances productivity, making it an invaluable tool for researchers navigating the complexities of lipid nanoparticle synthesis.



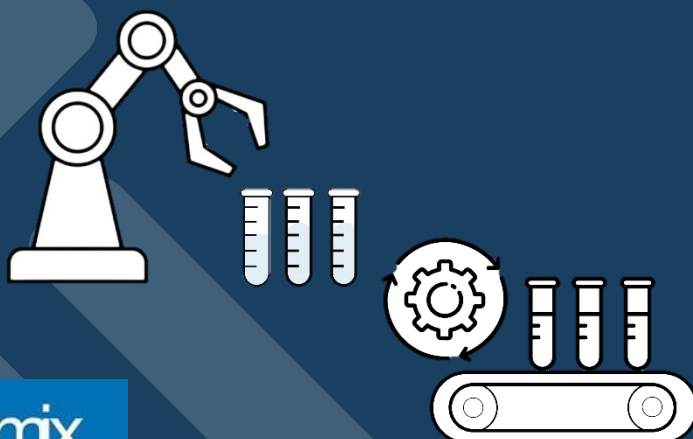
LNP Research Challenges

Labor intensive

Synthesizing a lipid nanoparticle requires practiced expertise that must be repeated hundreds, if not thousands, of times throughout each phase of a research project. Each step, whether it's preparing stock solutions, preparing lipid mixes for formulation candidates, and loading payload into formulation synthesis, demands careful precision. Traditionally, these processes have been performed manually by trained researchers, making them not only time-consuming but also susceptible to human error and variability.

As the demand for rapid and reproducible LNP formulation grows, particularly in fields of mRNA vaccine development, gene therapy and drug delivery, there is a critical need to streamline and standardize this workflow. The Dionamix NanoStation Pro is purpose-built to address this challenge. By automating key stages such as sample preparation and lipid mixing, the NanoStation Pro significantly enhances throughput and consistency while minimizing hands-on time and experimental variability.

The NanoStation Pro enables researchers to focus on high-throughput innovation rather than routine preparation tasks. The NanoStation Pro delivers the reproducibility and efficiency labs require, transforming LNP development from manual bottleneck into a high-throughput, data driven process.



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LNP Research Challenges

Process Control

Research and development in LNP formulation often requires hundreds of trials to optimize a single formulation candidate. Each replicate can generate critical data, like precise reagents volumes. However, in many laboratories, this valuable information is recorded manually in individual researchers' notebooks or spreadsheets. While practical now, this inconsistent method of documentation can lead to challenges later, especially when attempting to reproduce successful test cases or troubleshoot formulation failures. This lack of traceability not only hampers reproducibility but can also slow down progress, particularly when research is being transferred between team members and departments.

The Dionamix NanoStation Pro directly addresses this gap with its integrated worksheets and centralized instrument control system. Every parameter, like stock concentration and lipid ratios, is captured and stored. This ensures full traceability, reproducibility, and standardization across experiments and users. By combining automated precision with robust data management, the NanoStation Pro transforms LNP research into a transparent, repeatable, and scalable process, empowering teams to move from discovery to development with greater speed, confidence, and scientific rigor.



LNP Research Challenges

Early-Stage Research Waste

In the early stages of research, hundreds of small-volume samples are often needed to screen a variety of lipid mixtures, formulation parameters (dilution factor and flow rate) or downstream processing protocols.

However, traditional preparation processes and mixing equipment led to significant waste, driving up costs—especially when lipid materials can cost hundreds to thousands of dollars. The Dionamix NanoStation Pro revolutionizes this process with its patented algorithm, engineered to dramatically reduce critical solution waste and maximize efficiency. When every microliter matters, the NanoStation Pro ensures you get the most out of every drop, saving time, resources, and money.



Why Choose the Dionamix NanoStation Pro?

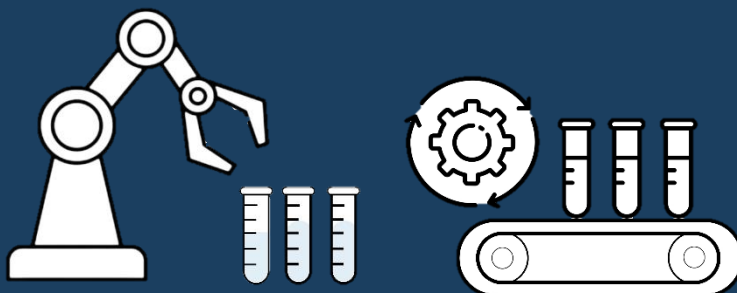
Precision and Accuracy

Traditional LNP production methods often rely on manual calculations, pipetting, and human oversight at multiple stages, from reagent preparation to mixing and formulations. This dependence on manual processes introduces variability between batches and increases the risk inconsistencies in particle size, encapsulation efficiency, and reproducibility. Such inconsistencies can pose significant challenges in the development of nucleic acid-based therapeutics and small molecule delivery systems, where precision and reliability are critical for both research and regulatory approval.

The Dionamix NanoStation Pro addresses these challenges by fully automating the LNP formulation workflow. By removing the need for manual intervention, the NanoStation Pro not only eliminates common source of human error but also ensures consistent and reproducible results across batches. This high level of automation enhances the accuracy and scalability of LNP-based drug development, enabling researchers to generate formulations faster and with greater confidence. Whether in early-stage research, optimization process, or pre-clinical development, the NanoStation Pro supports streamlined workflows that accelerate innovation in mRNA therapeutics, gene editing, vaccines, and other cutting-edge applications.

Why Choose the Dionamix NanoStation Pro?

High Throughput



The NanoStation Pro is designed with expansive screening studies in mind, and offers compatibility with 48, 96, and 384 well plate formats for both reagent stocks and output solutions. This allows researchers to prepare a large amount of lipid mixes to facilitate full-factorial DOE's or can be applied to prepare many replicates in sequence. Whether you're aiming to optimize a new formulation recipe or characterize the performance of your LNP-based delivery system, the NanoStation Pro will accelerate your research timeline and support the rapid development of new therapies.

Innovative Modular Design

The NanoStation Pro can operate as a single module, supplying a formulation instrument with low-volume, high accuracy lipid mixes, or can operate with multiple modules in parallel. Multiple modules allow for simultaneous preparation of organic and aqueous phases, integrating the entire LNP assembly process—from formulation derivation to sample collection—into a single, user-friendly platform.

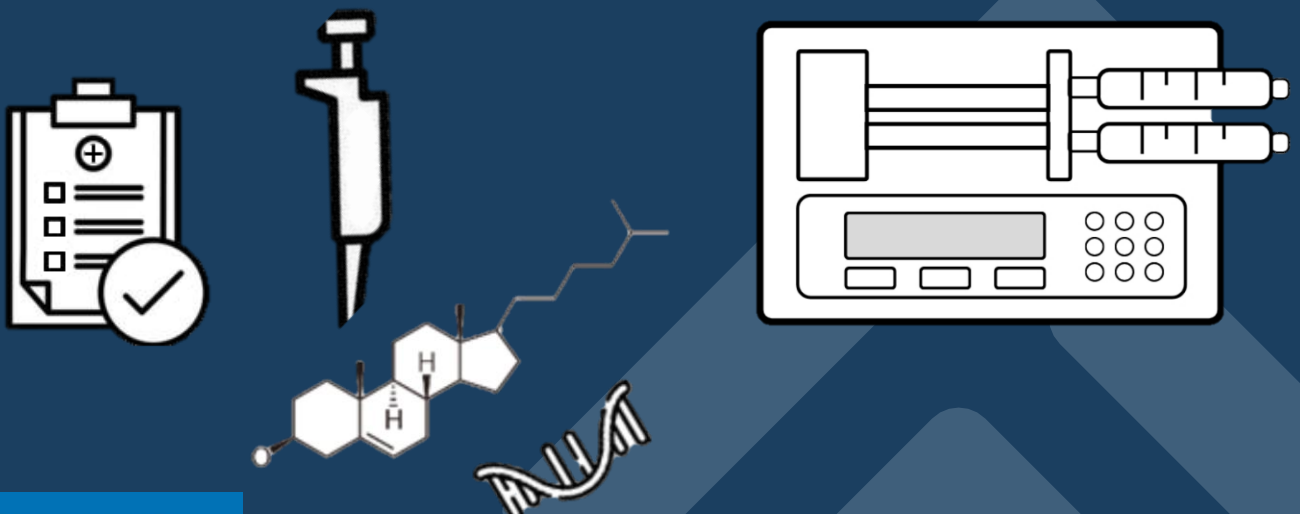


Evolution of LNP Production

Current vs. Traditional Methods

Traditional Methods

- ♦ Manual calculation formulation components: Researchers must manually calculate LNP components including lipids and nucleic acid materials/payloads based on molecular weight ratios and N/P ratio.
- ♦ Single Formulation Limitation: Traditional setups are typically configured to handle only one formulation per experiment. This constraint necessitates separate runs for each formulation, leading to increased time and resource consumption.
- ♦ Extensive Human Intervention: Significant manual involvement is required in the preparation and mixing processes, increasing the risk of human error and inconsistencies in lipid nanoparticle (LNP) production.



Transforming the Landscape of Medicine

Innovative Medicines for Modern Challenges

Dionamix's innovations in lipid nanoparticle (LNP) technology are advancing the development of a wide range of therapeutic modalities by addressing the key limitations of traditional, proprietary systems.

Limitations of Traditional Technologies: Many existing LNP production methods rely on single-use proprietary fluidic chips, which offer minimal flexibility and often tie researchers to rigid protocols. This can restrict experiment design and imposes challenges when looking to scale up research, leading to potential bottlenecks or missed opportunities in research and development.

Versatile Solutions with the NanoStation Pro: In contrast, the Dionamix NanoStation Pro provides a highly flexible platform that accommodates multiple formulations and scalable processes without the constraints of single-use proprietary systems. This flexibility allows researchers to explore a wider range of research objectives for LNP delivery solutions and therapeutic innovation, ultimately enhancing the speed and effectiveness of drug development.

By integrating these advanced capabilities, the Dionamix NanoStation Pro plays a pivotal role in driving innovation across the spectrum of modern medicine.

NanoStation Pro Innovation

Research Data Management

- ♦ Automatically captures experimental parameters and measurements.
- ♦ Secure data storage ensures researchers can access their results anytime.

Accurate Results

- ♦ Elimination of human error enhances data integrity and reliability.
- ♦ Scalable solutions for managing increasing data volumes.

Rapid Formulation Throughput

- ♦ Accelerates preparation, mixing, and target validation.
- ♦ Increases overall productivity and accelerates research timelines.

Innovative Design

- ♦ Reduce time spent on manual tasks and increase focus on research and discovery.

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Contact Us:

For inquiries, demos, and more information about the Dionamix NanoStation Pro, visit our website or reach out to our sales team.

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Experience the Future of LNP Research with Dionamix NanoStation Pro

Inspiring Broader Research

Join us in revolutionizing lipid nanoparticle medicine research and development. Your journey towards innovation starts here!