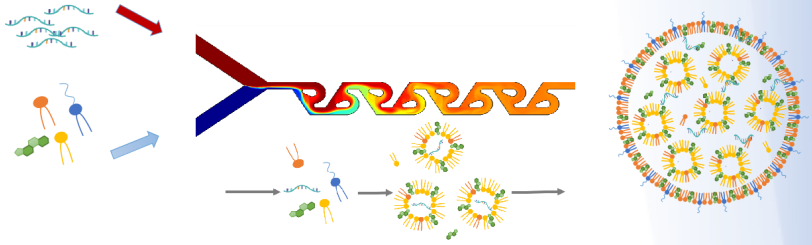
PreciGenome

Product Catalog

NanoGenerator®
Nanoparticle Synthesis for LNP & PLGA



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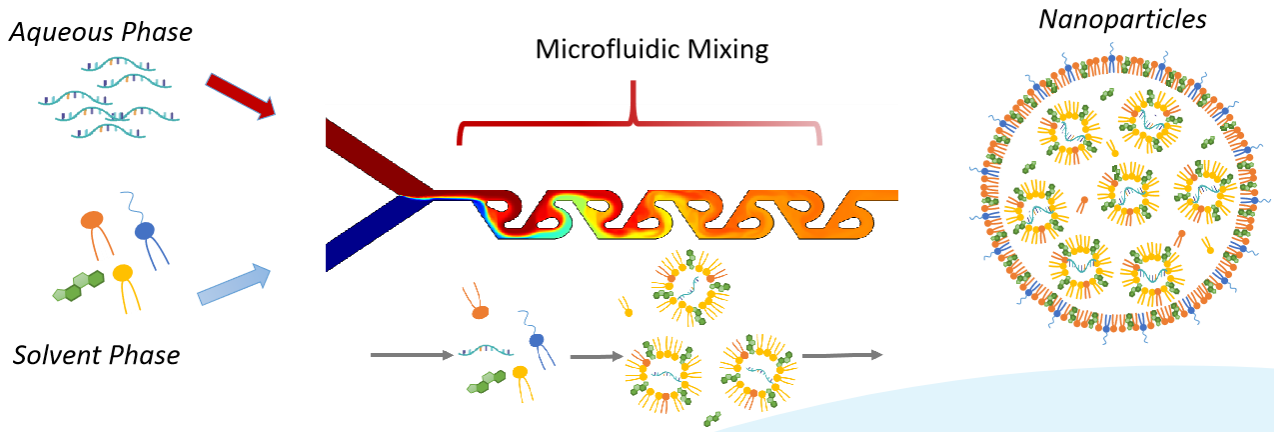


Nanoparticle synthesis via microfluidic mixing has superior control of size, homogeneity, and repeatability to conventional batch synthesis methods. Two streams, aqueous and solvent, meet in a narrow mixing channel, forming nanoparticles with payload encapsulated.

PreciGenome's NanoGenerator® platform uses pressure-based microfluidics for reliable nanoparticle synthesis at several production scales. It has been widely used to produce various types of nanoparticles, such as lipid nanoparticles (LNPs), liposomes, PLGA nanoparticles, etc.

Microfluidic Mixing System

- Controllable particle size
- Low PDI
- High encapsulation efficiency
- High reproducibility

Payloads

- mRNA/siRNA/other RNA, DNA
- Cas 9 mRNA/gRNA, Cas 9 RNP
- Proteins and peptides
- Small molecules
- Other payloads

System Benefits

High Performance & Efficiency

- Tunable size (40-200 nm)
- Low PDI
- High encapsulation efficiency

Open Platform

- Reagents
- Microfluidic chips

Scalable Throughput

- Scalable output from 100uL to >20L

Simple Operation

- Easy setup
- Compact size
- Intuitive UI w/ touchscreen

Cost Effective

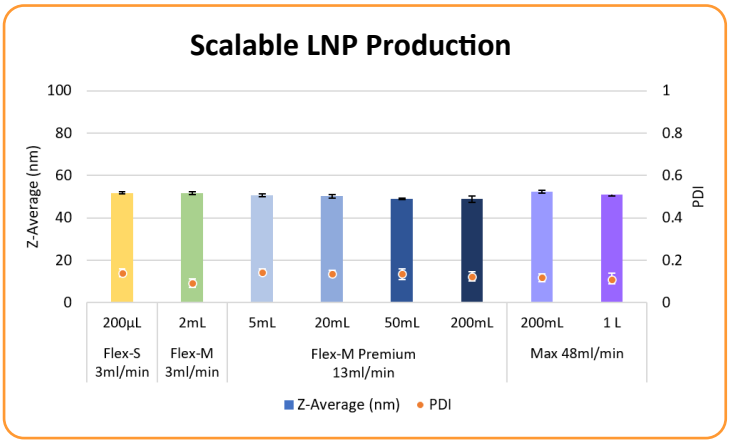
- Affordable configuration
- Low cost consumables

Custom design &OEM

- Research collaboration
- Custom design
- OEM & Contract manufacturing

Path from Discovery to Commercialization

NanoGenerator® offers controllable and reproducible mixing conditions, ensuring the accurate synthesis of LNPs through its scalable architecture found in the entire NanoGenerator® product line. Options are available for all production stages, allowing seamless transfer of crucial process parameters and guaranteeing consistent critical quality attributes (CQAs). LNPs produced from NanoGenerator® may be used for a wide range of applications, such as vaccine development, gene therapy, cell therapy, etc.



Discovery & Screening | Pre-Clinical | Clinical | Commercial

Flex-S
- 0.1 - 2mL per run
- 1 - 4 samples per run

Flex-M
- 1 - 12mL per run

Flex-M Premium
- 1 - 200 mL per run

MAX Lite cGMP
- 2 - 200mL per run

Flex-S Plus
- 0.1 - 0.5mL per sample
- 48 samples per run
- 96 samples within 90 mins

MAX (RUO)
- 50mL - 1L per run

MAX cGMP (4.8L/h)
- 50mL - 1L per run

MAX cGMP (40L/h)
- Continuous production

Custom design and OEM solutions

Target Validation
API Identification
Excipient Identification

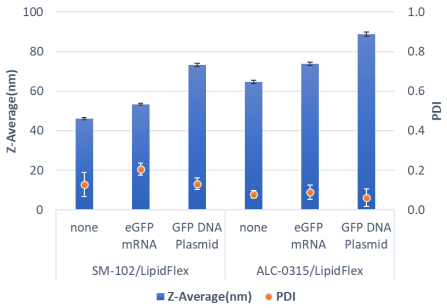
Formulation Development
& Optimization
Candidate Selection

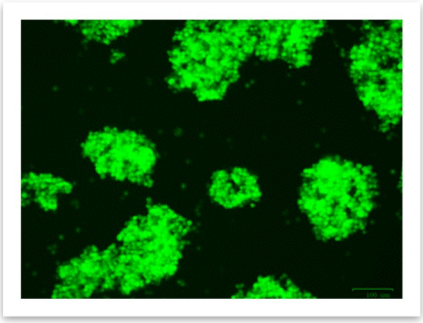
Clinical Development
Approved Medicine
Customized GMP Solution

PreciGenome

NanoGenerator® Flex-S

Small-Scale Nanoparticle Synthesis System





Model	NanoGenerator® Flex-S
Mixing Cartridge	CHP-MIX-4
Throughput	0.1 to 2 ml per run. 1 to 4 samples per run.
Total Flow Rate	3 ml/min, 4 ml/min
Flow Rate Ratio (W:O)	3:1
Size Range	40 to 200 nm
PDI	0.05 to 0.2
Encapsulation Efficiency	85-95%
Payloads	DNA, mRNA, siRNA, protein, small molecules

Features of NanoGenerator® Flex-S:

NanoGenerator® Flex-S is designed for small scale production. It may run 1 to 4 samples at once, each sample from 0.1 to 0.5 ml. The throughput volume is therefore 0.1 to 2 ml per run, saving over 80% in reagent cost versus larger volumes and perfect for formulation screening and early discovery.

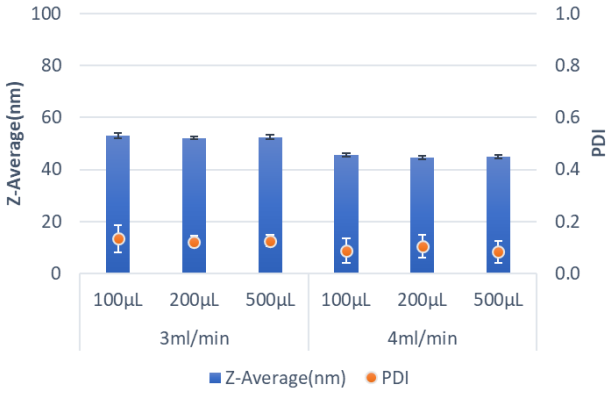
Even smaller output volumes (<0.1 ml per run), custom total flow rate, and custom flow rate ratio are attainable at special request by recipe optimization.

Tunable flow rate & volume:

- **More total flow rate settings.** Users can choose 3 or 4 ml/min to conduct LNP synthesis. Other total flow rate and flow rate ratio are attainable at special request. *LNP size and PDI also depend on other factors such as the payload and formulation choice.*

- **Output volume as low as 100 µl** is attainable by loading 75 µl aqueous samples (e.g. mRNA) and 25 µl lipid formulation.

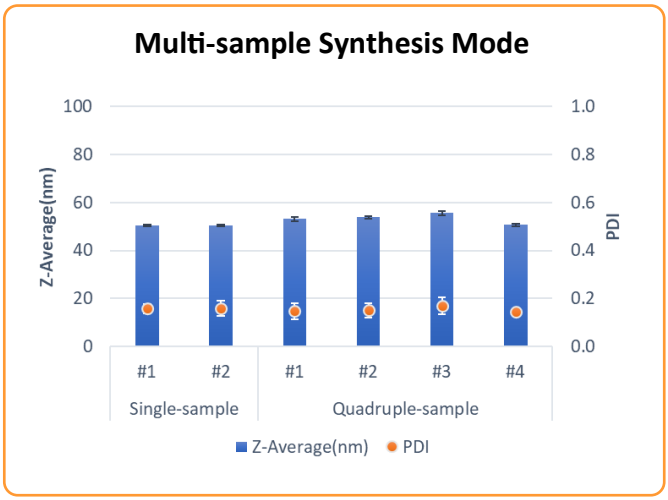
Tunable Parameters of Flex-S



Multi-sample Synthesis for screening:

- **10 seconds, 4 samples!** Users can enable multi-sample synthesis mode to conduct formulation screening. The screening time is as low as 10 seconds

- **Reliable screening results.** Using PreciGenome's advanced air-flow control technology, users can obtain reliable LNP results on both single- and multi-sample synthesis modes.

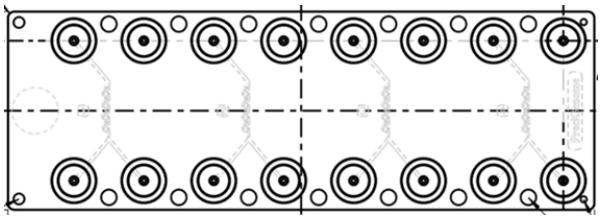


Example of Formulation Screening by Flex-S

Screening Panel			LNP Characterization			Cell Study
Formulation	Ionizable Lipid	N/P Ratio	Size (nm)	PDI	EE%	GFP expression
#1	40%	3.57	56.6	0.19	86%	+
#2	40%	5.35	79.9	0.246	84%	+
#3	40%	8	75.2	0.214	85%	++
#4	60%	5.35	128.5	0.13	81%	NA
#5	40%	5.35	62.8	0.186	90%	++
#6	40%	8	54.3	0.184	93%	++
#7	50%	8	79	0.155	88%	+
#8	50%	11	82.2	0.126	90%	NA
#9	50%	8	87.5	0.12	91%	+++

- **Affordable formulation screening.** With the Nano-Generator® Flex-S, users can conduct formulation screening with minimal reagent consumption and reduced reagent cost.

- **Excellent batch-to-batch consistency.** Ease of operation and reliable components ensure consistent performance.



CHP-MIX-4

NanoGenerator® Flex-S Plus
Automated High-throughput System

The Flex-S Plus System (0.1 to 0.5ml per sample) facilitates the rapid screening of nanoparticle formulations and early-stage mRNA candidates automatically, offering a substantial increase in project efficiency.

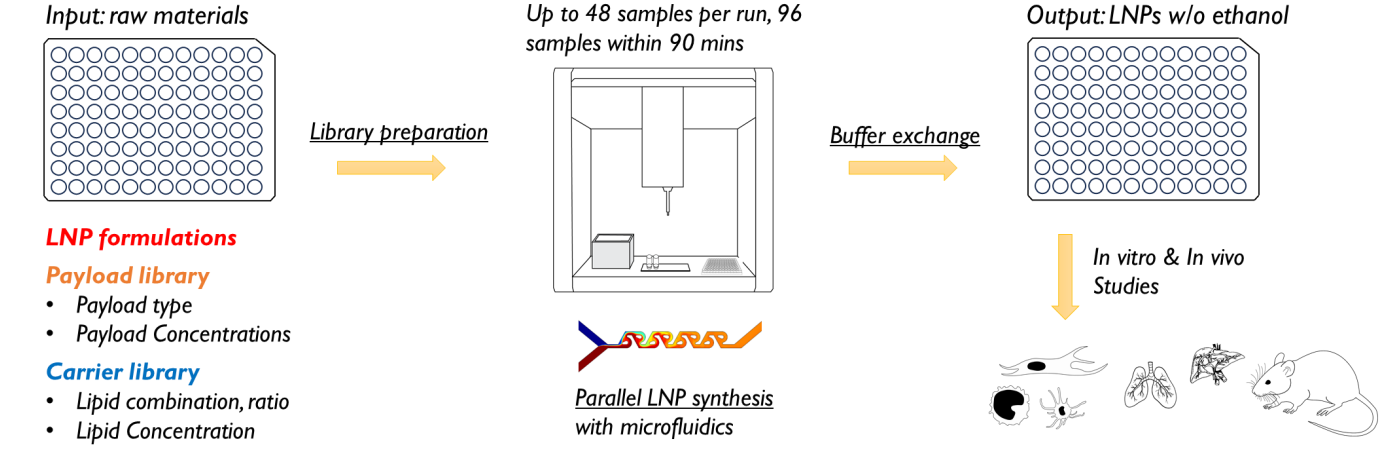
With a max throughput of 48 samples/run, 96 samples in 90 mins, the Flex-S Plus greatly streamlines screening processes. It offers comprehensive automation of complex protocols, enabling users to concentrate on other laboratory duties.

More Features of NanoGenerator® Flex-S Plus:

- **Library prep functions** enable lipid/payload formulation prep from raw stock materials before the LNP synthesis.
- **Buffer exchange function** enables removing of ethanol in the final products.
- **Automated workflows** enable synthesizing LNP from raw materials to final product w/o ethanol automatically.

Model	NanoGenerator® Flex-S Plus
Mixing Cartridge	CHP-MIX-4
Throughput	0.1 to 0.5 ml per sample.
Sample number per run	(1 - 12) × 4 per run Up to 96 samples within 90 mins
Library Preparation	Optional
Total Flow Rate	3.5 ml/min, 5 ml/min
Flow Rate Ratio (W:O)	3:1
Size Range	40 to 200 nm
PDI	0.05 to 0.2
Encapsulation Efficiency	85-95%
Screening factors	Lipids, Payloads, N:P ratio, etc.

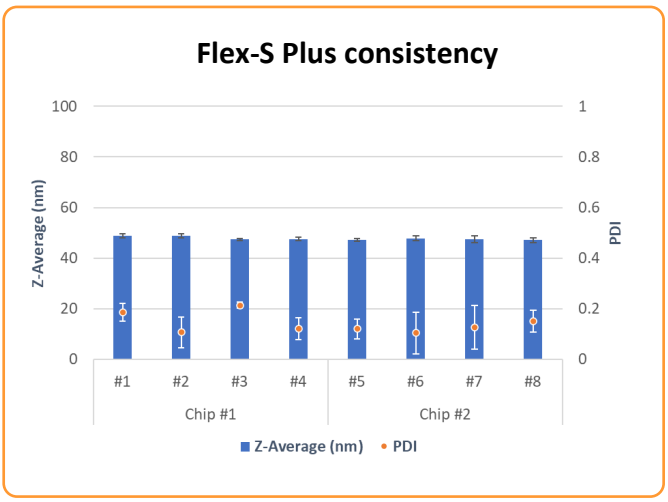
Automated high throughput Screening Workflow



Automated High-throughput Formulation Screening & Discovery

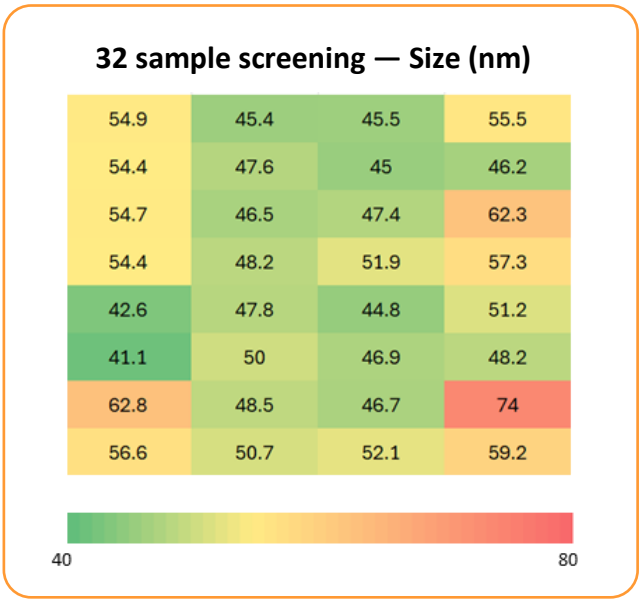
Consistency of NanoGenerator® Flex-S Plus

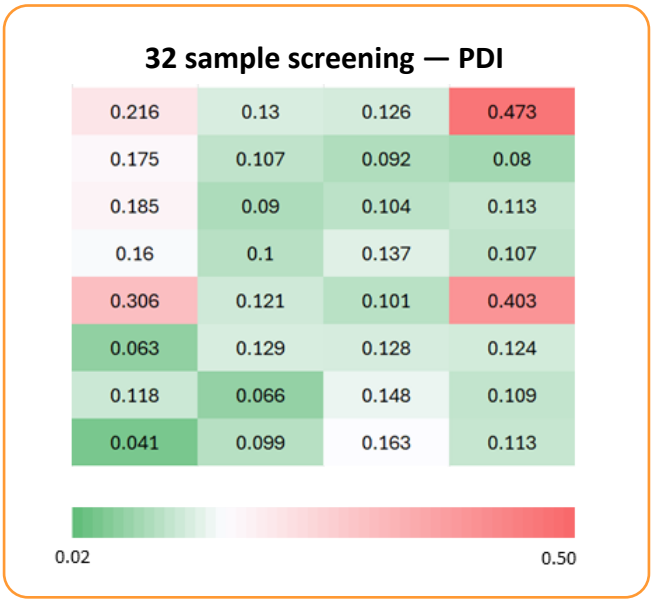
- LNPs synthesized by different channel in a single chip show small variation in the size and PDI.
- LNPs synthesized by different chips show good consistency in the size and PDI.
- Good consistency enable disclosing real property differences of LNP w/ different conditions



Application — 32 sample Screening by NanoGenerator® Flex-S Plus

The following shows an application study of 32-sample screening by NanoGenerator® Flex-S Plus with total flow rate of 3ml/min and flow rate ratio of 3:1. Each cell in the heatmap indicates a unique LNP sample with a specific lipid formulation, a specific payload or a specific N:P ratio. The following heatmap offers an insight of the physical properties (size & PDI) of 32 kinds of different LNPs. Precise control of parameters ensures consistent CQAs, guaranteeing speed, cost-effectiveness, and reliability at every stage of the experiment.





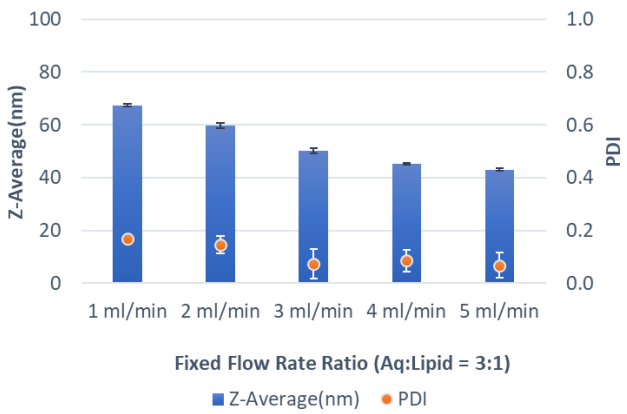
NanoGenerator® Flex-M

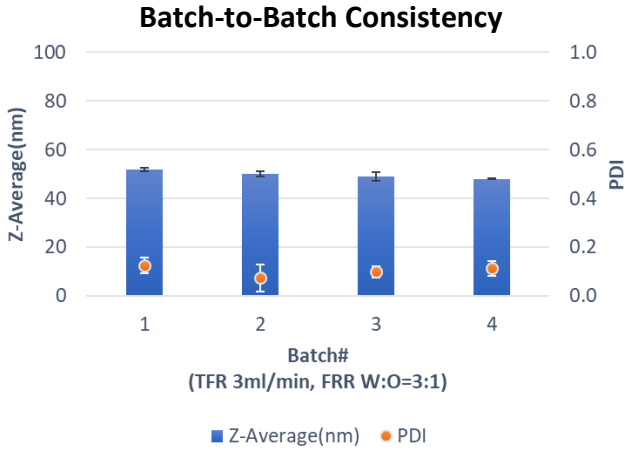
Medium-Scale Nanoparticle Synthesis System

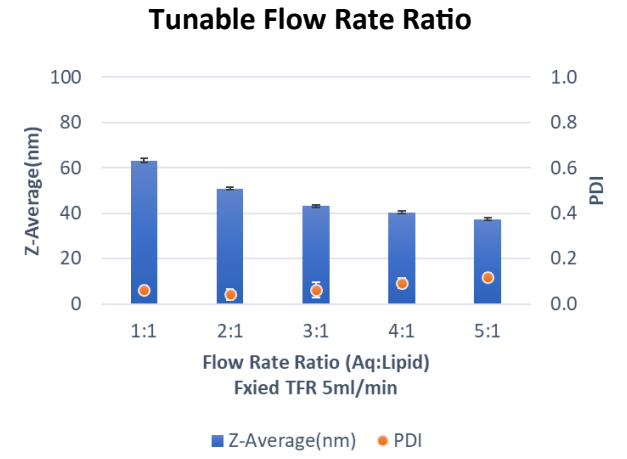
The NanoGenerator® Flex-M is designed for small to medium scale production. It has a throughput range from 1 to 12 ml, suitable for a variety of applications from early screening to animal studies.

An add-on package is available for in-line dilution, allowing users to instantly reduce ethanol concentration during production. This further stabilizes LNPs right before collection.

Model	Flex-M	Flex-M Premium
Mixing Cartridge	CHP-MIX-4	CHP-MIX-4, CHP-MIX-PRO
Throughput	1 to 12 ml	1 to 200 ml
Max Flow Rate	5 mL/min w. MIX-4 mixer	5 mL/min w. MIX-4 mixer 20mL/min w. MIX-PRO mixer
Flow Rate Ratio (W:O)	1:1 to 5:1	1:1 to 10:1
In-line Dilution (optional)	0.5:1 to 5:1	
Size Range	40 to 200 nm	
Glass Chip Mixer	Compatible w. CHP-MIX-G1 & custom design mixer	
PDI	0.05 to 0.2	
Encapsulation Efficiency	85-95%	







NanoGenerator® Flex-M Premium

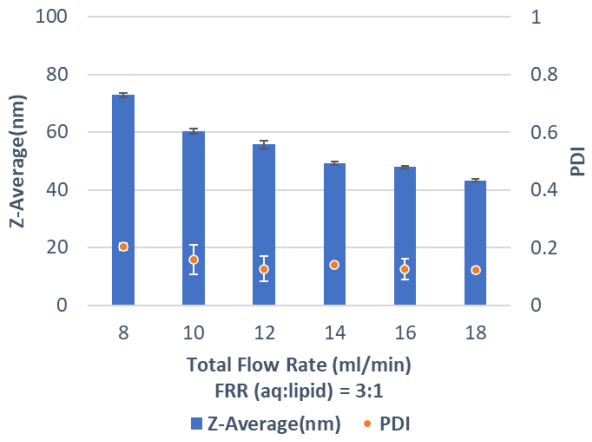
Medium-Scale Nanoparticle Synthesis System

The NanoGenerator® Flex-M Premium can be upgraded from Flex-M with a hardware installation kit and software upgrade. It has a throughput of 1 to 200 ml, suitable for applications from early screening to animal studies and pre-clinical applications.

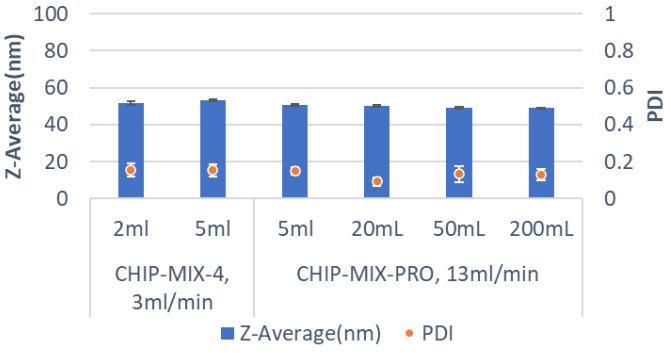
An add-on package is available for in-line dilution, allowing users to instantly reduce ethanol concentration during production. This further stabilizes LNPs right before collection.

Model	Flex-M	Flex-M Premium
Mixing Cartridge	CHP-MIX-4	CHP-MIX-4, CHP-MIX-PRO
Throughput	1 to 12 ml	1 to 200 ml
Max Flow Rate	5 mL/min w. MIX-4 mixer	5 mL/min w. MIX-4 mixer 20mL/min w. MIX-PRO mixer
Flow Rate Ratio (W:O)	1:1 to 5:1	1:1 to 10:1
In-line Dilution (optional)	0.5:1 to 5:1	
Size Range	40 to 200 nm	
Glass Chip Mixer	Compatible w. CHP-MIX-G1 & custom design mixer	
PDI	0.05 to 0.2	
Encapsulation Efficiency	85-95%	

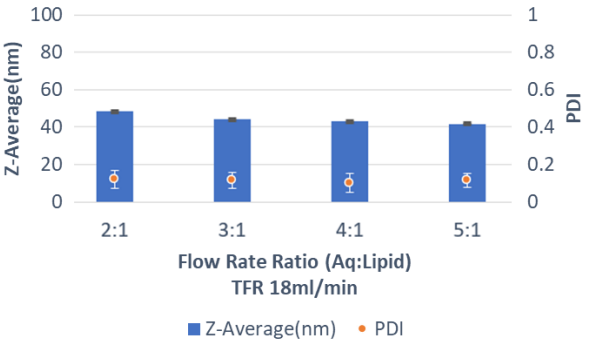
Tunable Total Flow Rate



CHP-MIX-4 Vs. CHP-MIX-Pro



Tunable Flow Rate Ratio



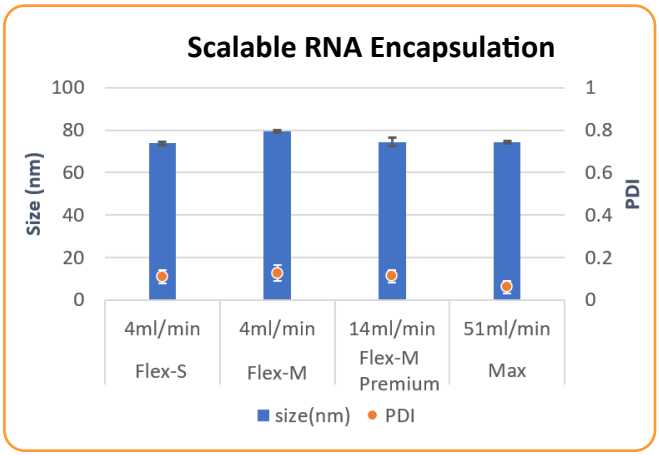
NanoGenerator® Max Lite & Max cGMP Nanoparticle Synthesis System

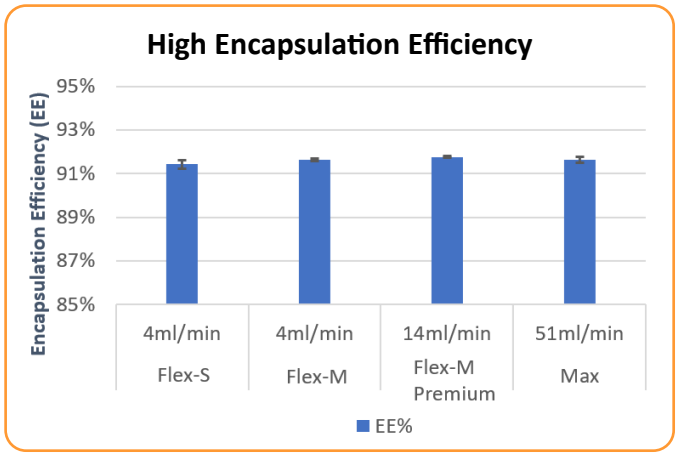
With PreciGenome's microfluidic technology, customers can seamlessly transfer early discovery results (NanoGenerator® Flex, Pro) to the late stage production (NanoGenerator® Max Lite & Max).

The NanoGenerator® Max RUO version can be used for preclinical applications of LNP synthesis, while the NanoGenerator® Max Lite & Max GMP version is designed for clinical and commercial production.

NanoGenerator® Max Lite

NanoGenerator® Max





Model	NanoGenerator® MAX Lite	NanoGenerator® MAX			
		RUO flow kit 4.8L/h	GMP flow kit 4.8L/h	RUO flow kit 40L/h	GMP flow kit 40L/h
cGMP compliance	Yes	N/A	Yes	N/A	Yes
Software (21 CFR Part 11)	Yes	Optional	Yes	Optional	Yes
Throughput	2 – 200 ml	50 ml – 1 L		> 20 L (continuous production)	
Max flow rate	24 ml/min	4.8 L/h		40 L/h	
Flow rate ratio	1:1 – 9:1	1:1 – 9:1		1:1 – 5:1	
Inline dilution	1:1 – 5:1				
Size range & PDI	40 – 200 nm (size), 0.05 – 0.2 (PDI)				
Encapsulation efficiency	Up to 99%				
Dimension (L × W × H)	420 × 300 × 300 mm	620 × 380 × 430 mm			
Weight	35 kg	50 kg		65kg	

cGMP Regulatory Compliance

The NanoGenerator® MAX GMP System is engineered to facilitate the production of genomic medicines for both clinical and commercial purposes.

Regulatory support files for the single-use mixing flow pack are available including material traceability documentation .

PreciGenome has a proven history of delivering timely support to assist customers in fulfilling their unique country- or region-specific regulatory requirements.

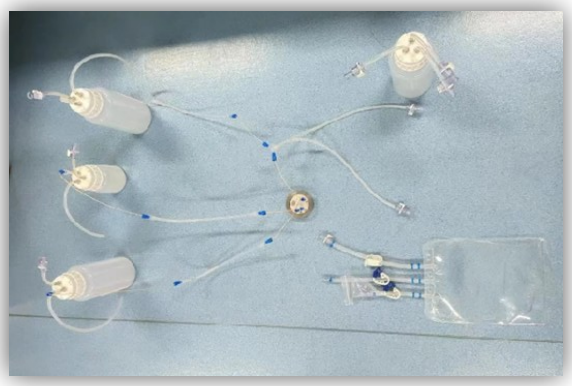
cGMP Compliance Documentation

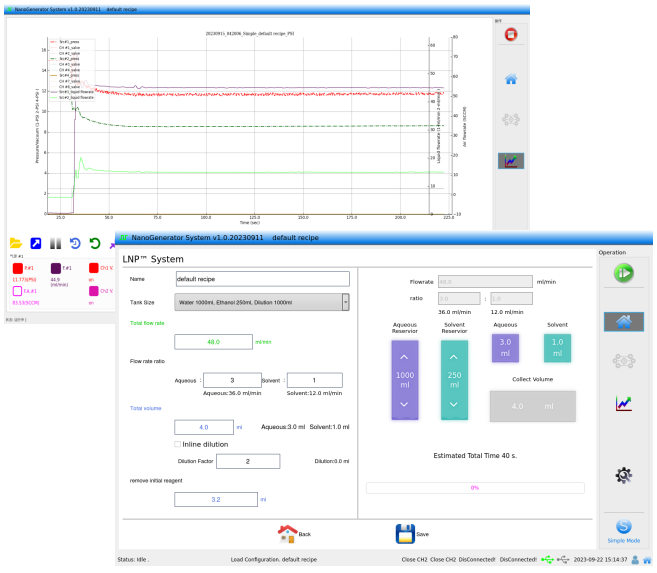
- Installation qualification, operational qualification, performance qualification
- Report of consumable extractables test
- Report of endotoxin test
- Report of RNase/DNase free test
- Report of sterility test
- Electromagnetic compatibility report
- Safety regulations report

Single-use mixing flow pack

The single-use mixing flow pack is fully documented to support regulatory and quality audits for cGMP production.

It reduces the risk of cross-contamination between batches and campaigns.





Software (21 CFR Part 11 compliant)

- Experimental parameter tuning
- Experimental recipe save/load
- Real-time pressure/flow rate chart
- Historic experimental parameter tracking
- Historic pressure/flow rate tracking
- Self-diagnostic system
- Real-time flow rate diagnostic system
- Real-time warning system
- Manual & automatic emergency stop system
- User management
- Audit trail
- Flow sensor maintenance & calibration (service)

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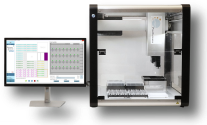

BASIC FEATURES	Flex-S	Flex-S Plus	Flex-M	Flex-M Premium	MAX (RUO)
Model Number	PG-SYN-FS	PG-SYN-SP	PG-SYN-FM	PG-SYN-FM	PG-SYN-G
R&D Stage	Screening & Discovery	Screening & Discovery	Screening & Discovery	Discovery &Preclinical Studies	Preclinical Studies & Development
Throughput	0.1 to 2 ml	0.1 to 0.5 ml	1 to 12 ml	1 to 200 ml	50 ml to 1 L
Multiple Samples/Run	✓	✓	✗		✗
Max Flow Rate	3 or 4 ml/min	3.5 or 5 ml/min	5 ml/min	20 ml/min	4.8 L/h
Flow Rate Ratio	3:1	3:1	1:1 to 5:1	1:1 to 10:1	1:1 to 9:1
Tunable Flow Rate	Custom design	Custom design	✓		✓
Intuitive & Easy To Use	✓	✓	✓		✓
Inline Monitoring	Pressure	Pressure	Pressure & flow rate		Pressure & flow rate
Consumable Cost/Run	$	$	$		$$
Dimensions (mm)	320 × 400 × 210	630 × 570 × 660	530 × 270 × 240	530 × 270 × 240	620 × 380 × 430
Weight	8.1 kg	50 kg	10.7 kg	10.7 kg	50 kg
ADDITIONAL FEATURES (optional)					
Inline Dilution	✓	✓	✓		✓
Reagent Heating	✗	✗	✗		✓
Custom Design/ OEM	✓	✓	✓		✓
Qualification: IQ/OQ	✓	✓	✓		✓
21 CFR Part 11 Soft-ware	✓	✓	✓		✓
Installation & Training	✓	✓	✓		✓
Extended Warranty & PM Service	✓	✓	✓		✓

NanoGenerator® cGMP Solutions

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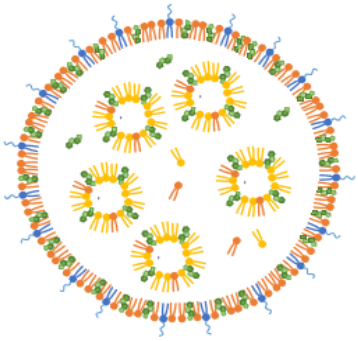
BASIC FEATURES	 MAX Lite	 MAX (4.8L/h)	 MAX (40L/h))
Model Number	PG-SYN-GL	PG-SYN-G	PG-SYN-G
R&D Stage	Clinical Studies & Development	Clinical Studies & Development	Clinical Development & Production
Throughput	2 to 200 ml	50 ml to 1 L	> 20 L (continuous production)
Max Flow Rate	24 ml/min	4.8 L/h	40 L/h
Flow Rate Ratio	1:1 to 9:1	1:1 to 9:1	1:1 to 5:1
Tunable Flow Rate	✓	✓	✓
Intuitive & Easy To Use	✓	✓	✓
Inline Monitoring	Pressure	Pressure	Pressure & flow rate
Consumable Cost/Run	$$	$$$	$$$
Dimensions (mm)	420 × 300 × 300	620 × 380 × 430	620 × 380 × 430
Weight	35 kg	50 kg	65 kg
ADDITIONAL FEATURES (optional)			
Inline Dilution	✓	✓	✓
Reagent Heating	✓	✓	✓
Custom Design/ OEM	✓	✓	✓
Qualification: IQ/OQ	✓	✓	✓
21 CFR Part 11 Software	✓	✓	✓
Installation & Training	✓	✓	✓
Extended Warranty & PM Service	✓	✓	✓

Case Study I:

T Cell Transfection by mRNA Lipid Nanoparticles



Since the first FDA approval of chimeric antigen receptor (CAR) T cell therapy, T cell engineering has continued to be the hottest research field in immunotherapy and cell therapy. Current CAR T cell engineering methods use viral transductions, which induce permanent CAR expression and have potential safety concerns. To overcome these concerns, researchers are highly interested in non-viral gene delivery methods.

Recently, CAR mRNA LNPs in T cell engineering have been widely studied. Transient transduction of mRNA LNPs make them safer than viral vectors. With NanoGenerator® platform, customers can produce mRNA LNPs with well controlled size, high homogeneity and excellent encapsulation efficiency, all key factors for efficient T cell transfection.

The following data shows the size and PDI of GFP mRNA LNPs synthesized by NanoGenerator® Flex systems. The transfection efficiency to K562 and HepG2 cell lines and human primary T cells are presented in Figures 1-3.

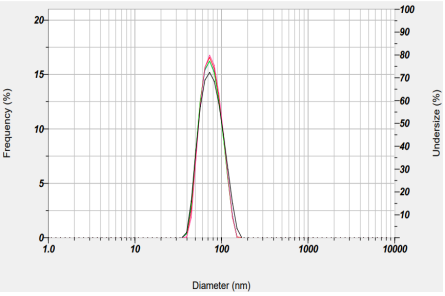


Figure 1. GFP-LNPs synthesized by NanoGenerator® Flex-S. Average size is 67.3 nm. PDI is 0.106.

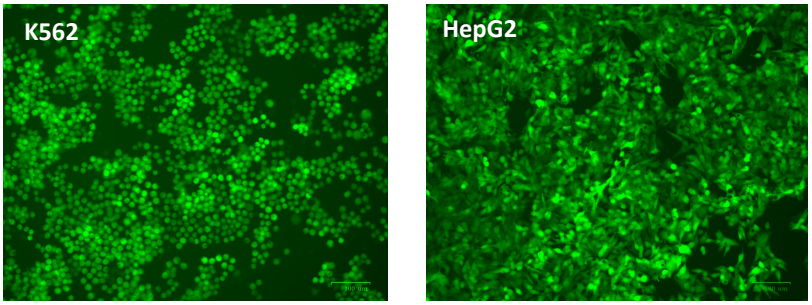
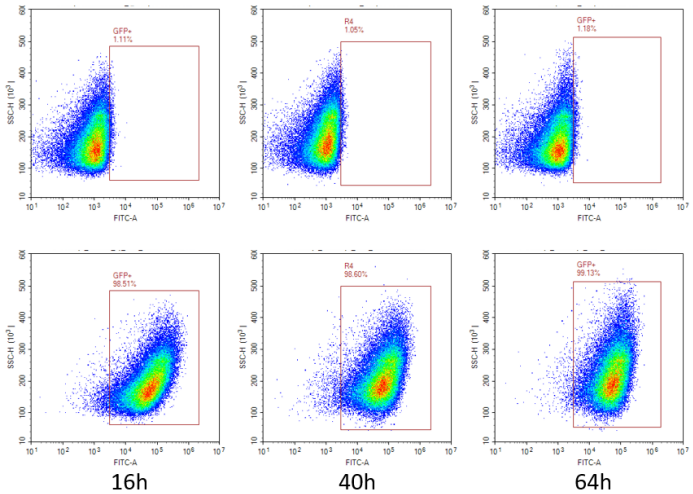


Figure 2. GFP expression in the K562 (left) and HepG2 (right) cell lines 48 hours after treatment by GFP-LNPs synthesized by NanoGenerator® Flex-S.

Figure 3. GFP(+) positive population of control (non-treated) and eGFP LNP treated primary T cells at 16, 40 and 64 hours.

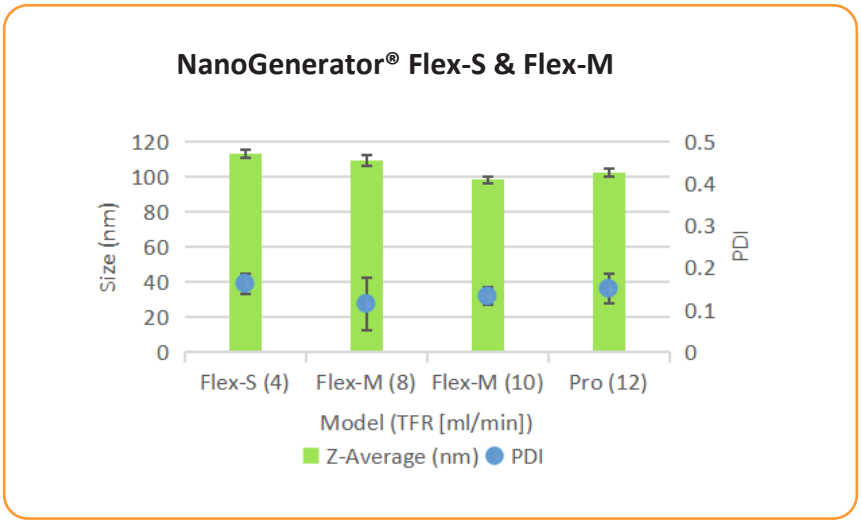
Cells were stained (1:50) using Bio-Legend 7-AAD Viability Staining for 10 minutes.



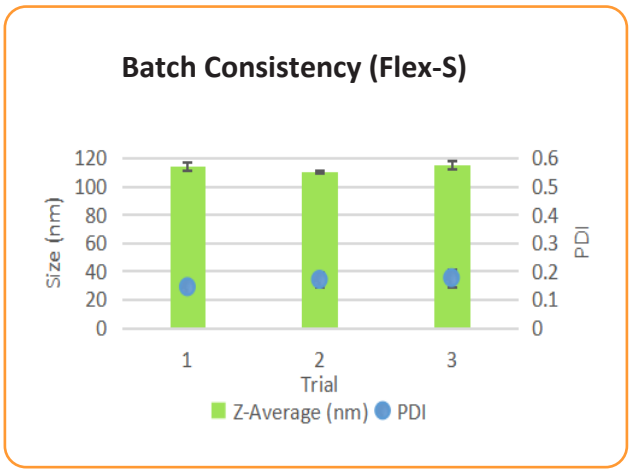
Case Study II:
PLGA Nanoparticle Synthesis with NanoGenerator®

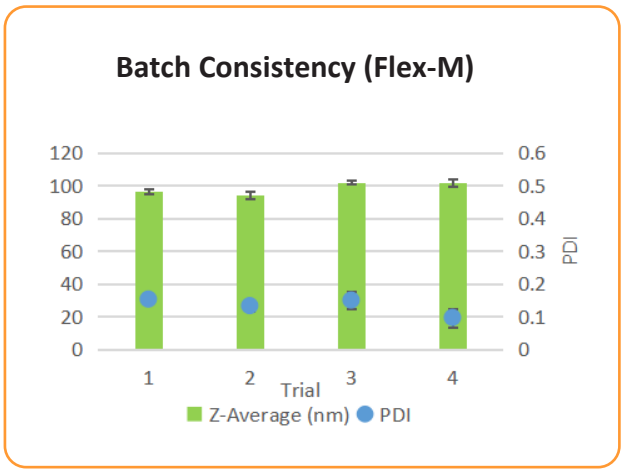
The NanoGenerator® platform can be used for the synthesis of PLGA nanoparticles in addition to LNPs.

For PLGA nanoparticle synthesis, successful batch-to-batch consistency is empowered by the advanced microfluidic technology used in the CHP-MIX-4 (Flex-S) and the CHP-MIX-3 (Flex-M and Flex-M Premium). Like with LNPs, this consistency applies across multiple throughput ranges, ensuring scalable results from 0.1 to 200 ml.



PLGA nanoparticle size tuning is controlled by formulation parameters, total flow rate and flow rate ratio. Supported flow rate conditions differ from standard LNP settings.

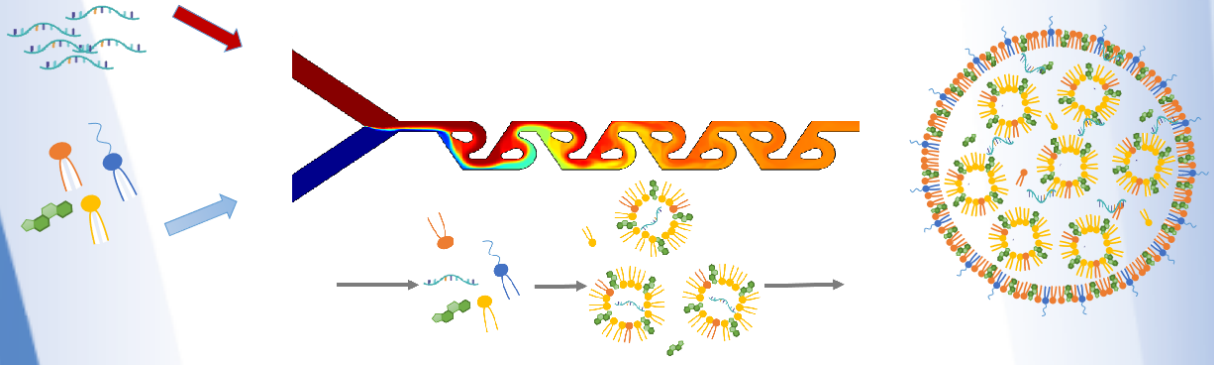




For PLGA microparticle synthesis, please check droplet generation system:
https://www.precigenome.com/microfluidic-fluidic/plga-microparticle-synthesis-production-system

PreciGenome

mRNA Lipid Nanoparticle Solutions



One-Stop-Shop for your mRNA Lipid Nanoparticle Project

- LipidFlex™ Kit
- Catalog mRNA
- Custom mRNA Synthesis
- Premade mRNA-LNP
- LNP Formulation Service

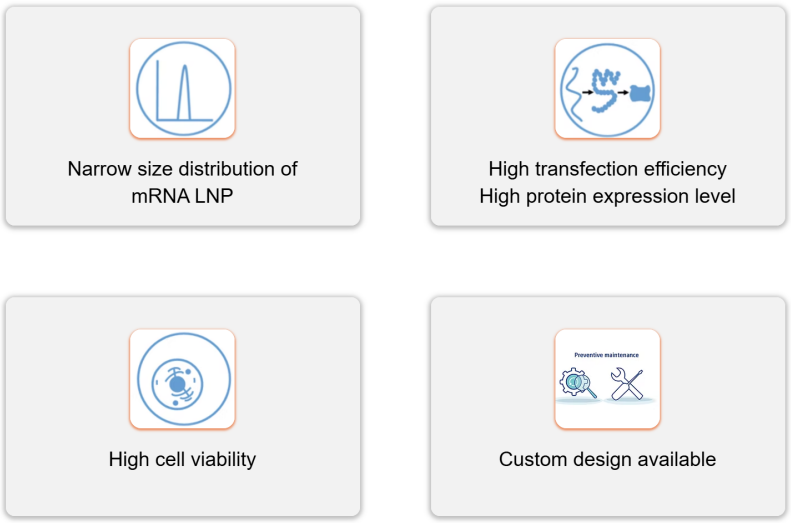
Email: contact@precigenome.com
Tel: +1-408-708-4602

Address: 2176 Ringwood Ave., San Jose CA, USA
Visit us at www.precigenome.com/nanoparticle-synthesis

LipidFlex™ LNP Formulation Kits

Simplify your exploration of Lipid Nanoparticles (LNPs) with our cost-effective LipidFlex™ research-ready LNP reagent kits. These kits are designed to streamline your workflow, allowing you to focus on the core aspects of your research without the high costs or complex setup of formulation design.

We provide a comprehensive suite of solutions tailored to support every stage of your LNP journey, from initial discovery to advanced bioanalysis. Whether you are just beginning to explore the potential of LNPs or delving into deeper, more complex research, our purpose-built solutions are here to guide you every step of the way. With LipidFlex™, you can efficiently navigate the entire spectrum of LNP research, ensuring that your experiments are both productive and insightful.



- LipidFlex™ RNA Kit:

High Efficient RNA LNP Formulation

Component	Size	Storage
LipidFlex™ RNA mix	125 µl	-80 °C
Formulation Buffer 1 (10x)	50 µl	4 to 8 °C
Formulation Buffer 2	1 ml	4 to 8 °C
Ethanol	100 µl	4 to 23 °C

- # LipidFlex™ T Cell Kit

High Efficient mRNA LNP Formulation for T Cell Transfection

The LipidFlex™ T cell kit is a highly efficient lipid formulation used to synthesize mRNA LNPs for primary human T cell gene delivery. Using the NanoGenerator® Flex-S and CHIP-MIX-4 cartridge, customers can efficiently prepare potent mRNA LNPs.

- Narrow size distribution of mRNA LNP
- High transfection efficiency
- High protein expression level
- High cell viability
- Time efficient synthesis process

Component	Size	Storage
Lipid mix	125 µl	-80 °C
Formulation Buffer 1 (10x)	50 µl	4 to 8 °C
Formulation Buffer 2	1 ml	4 to 8 °C
Ethanol	100 µl	4 to 23 °C

- # LipidFlex™ 3-lipid Mix Kit

Flexible Lipid Nanoparticle Formulation

LipidFlex™ is a 3-component lipid mixture formulation, which can be directly used to generate liposome for small molecule encapsulation. In addition of different catonic/ionizable lipids, LipidFlex™ can also be used to generate lipid nanoparticles (LNPs) for encapsulation of small molecules and nucleic acid such as mRNA, DNA, protein, etc.

- Flexible cationic/ionizable lipid ratio
- Flexible with various N/P ratios
- High nucleic acid encapsulation efficiency
- High mammalian cell transfection rate

Components	Structural Lipid/Cholesterol/ Stabilizer
Product Size	1000 µl
Lipid Concentration	30 mM
Ionizable Lipid	N.A.

More information:
https://www.precigenome.com/lipid-nanoparticles-lnp/lipid-nanoparticle-synthesis-nanogenerator/formulation-reagent-lnp-lipid-nanoparticles-liposomes

mRNA

Synthetic mRNA is a versatile tool that allows for the rapid and safe expression of proteins without requiring integration into the host cell genome or transnuclear localization. In vitro transcription (IVT) has enabled the incorporation of modified nucleotides like 5-methylcytidine, 5-methoxyuridine, and pseudouridine into synthetic mRNA, enhancing its stability and immunogenicity. As a result, synthetic mRNA has gained popularity across various applications, including regenerative medicine, cell biology research, disease treatment, and cell reprogramming.

Commonly used catalog mRNA

mRNA Type	Product
Reporter gene mRNAs	eGFP mRNA
	Firefly Luciferase mRNA
	mCherry mRNA
	Jellyfish GFP mRNA
Genome editing mRNA	Cas9 mRNA
	Cre mRNA
Antigen mRNA	OVA mRNA
Protein replacement mRNA	hEPO mRNA

We provide off-the-shelf mRNA products, including but not limited to those listed in the above table. For more mRNA products, please visit our website and feel free to contact us.

At PreciGenome, we provide comprehensive support for mRNA projects by offering custom mRNA synthesis services, premade mRNA products, raw materials, ready-to-use mRNA synthesis kits, mRNA delivery kits, and mRNA-LNP encapsulation services.

More information https://www.precigenome.com/lipid-nanoparticles-lnp/mrna

Custom mRNA Synthesis

At PreciGenome, we specialize in providing high-quality custom mRNA synthesis services tailored to the specific needs of your research and therapeutic applications. Our dedicated team of experts leverages the latest advancements in IVT mRNA production to deliver precise, reliable, and high-performing mRNA constructs.

Features

- Lengths from a few hundreds bases to kilobases
- Variety of modified and capping options
- Flexible synthesis scale
- Competitive prices and fast turnaround time

Workflow

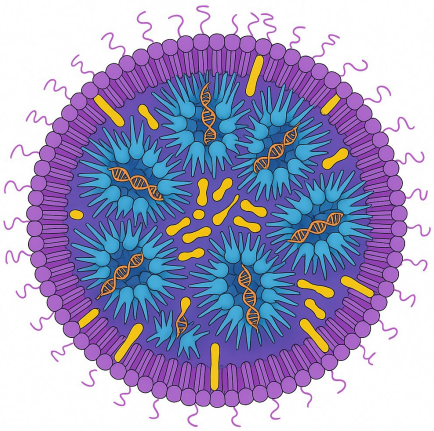
We prioritize excellence at every stage of the process, from design and synthesis to rigorous quality control, ensuring optimal expression, stability, and functionality. Whether you require mRNA for gene therapy, vaccine development, or other cutting-edge applications, PreciGenome is committed to delivering superior solutions that drive innovation and scientific progress.

Collect Custom Requirements | **Consultation and Design** | **Synthesis and Quality Assurance** | **Delivery to Your Lab**

Fill out the questionnaire to get a quote for your own mRNA.
https://www.precigenome.com/lipid-nanoparticles-lnp/mrna

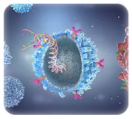
Premade LNP

Lipid nanoparticles (LNPs) are nanoscale particles composed of lipids, serving as efficient delivery vehicles for various drugs. These drugs include mRNA, circular RNA, self-amplifying RNA, siRNA, protein, small molecule, etc. LNPs are currently the most popular method for RNA delivery and offer several benefits, such as high stability, high delivery efficiency, reduced immunogenicity, and specific targeting delivery. As a result, LNPs hold great promise for developing safe and effective RNA-based treatments and vaccines.



Benefits

Enhanced delivery

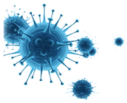


Facilitate more efficient uptake of RNA by cells, leading to higher levels of protein expression.

High encapsulation efficiency

Encapsulation Efficiency (E.E.%): >80% (>95-99% w. optimized conditions)

Reduced immunogenicity



Improve the safety and efficacy of RNA-based therapies and vaccines.

High stability

Protect RNA from degradation by enzymes and other factors, allowing for improved delivery of the RNA to the target cells.

Accelerate your LNP Formulation Development

In Vitro Evaluation

Quickly screen LNP formulations for cellular uptake and viability

In Vivo Distribution

Understand the localization of your payloads complex

Scale-up and Optimization

Leverage insights & our expertise to refine LNP formulations for scale-up studies

More information: https://www.precigenome.com/lipid-nanoparticles-lnp/premade-lipid-nanoparticle-mrna-lnp

Lipid Nanoparticle Custom Design & CRO Service

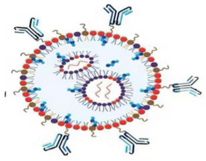
Raw Materials

- mRNA
- Custom mRNA
- Lipids
- mRNA-LNP

Formulation

- Formulation design & screening
- High-throughput screening
- Ionizable lipid library (MC3, SM102, LP01, ALC0315, etc.)
- Payload encapsulation

Targeted LNP



- Antibody-conjugated LNP
- Stem cell targeted LNP
- Liver targeted LNP
- Spleen targeted LNP
- Lung targeted LNP

Analysis

- Size & PDI
- Encapsulation Efficiency

Gene Delivery Study

- In vitro cell study
- In vivo small animal study

Scale up

- Scale up process optimization
- Large volume production
- GMP manufacturing
- Custom solutions

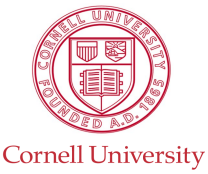
Workflow

Contact & requirements → **One-to-one technical support** → **Submit custom service form** → **Project start** → **Product delivery**

More information: www.precigenome.com/lipid-nanoparticles-lnp/service-for-lipid-np-liposome-synthesis-formulation-study

Notes

Some of Our Customers



PreciGenome is located in the heart of Silicon Valley, San Jose, California, USA. We have been focusing on developing nanoparticle synthesis systems and solutions for our customers. Our technology enables nanoparticle synthesis with high quality and reliable performance for lipid nanoparticles, liposomes, PLGA, etc.

HEADQUARTER

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Email: USSales@precigenome.com
Address: 2176 Ringwood Ave. San Jose, California, USA

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Email: ding-fong@ding-fong.com.tw

CHINA DISTRIBUTOR

Suzhou Rainsure Biotech Co. Ltd

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Email: info@rainsurebio.com

KOREA DISTRIBUTOR

InSung Chroma-Tech Co., Ltd.

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Email: KRSales@precigenome.com

SCAN ME