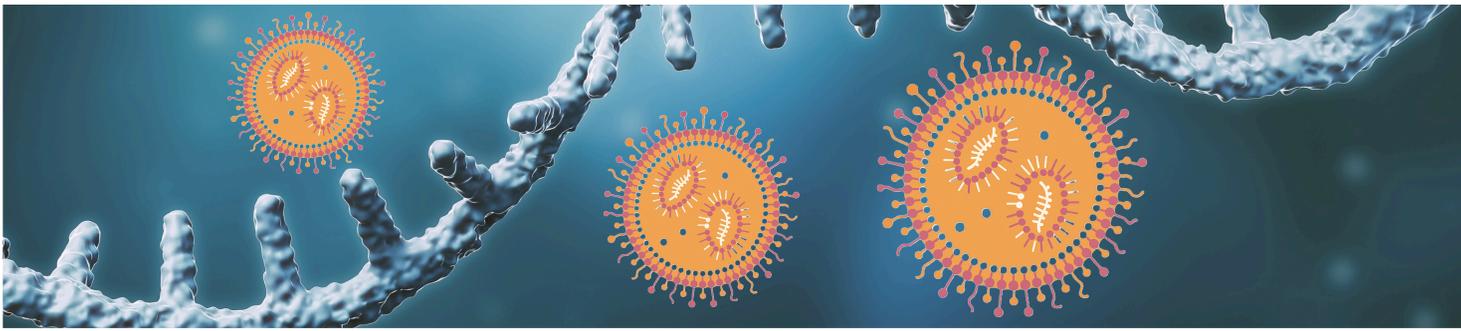


THE RNA-LNP EXPERT

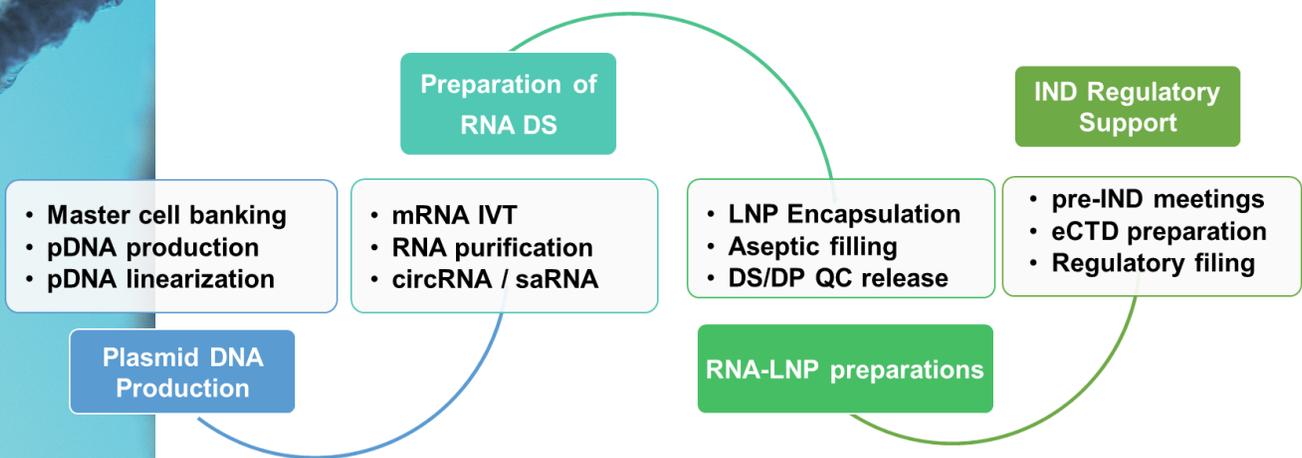
mRNA, circRNA, saRNA

Robust RNA-LNP Manufacturing Platform

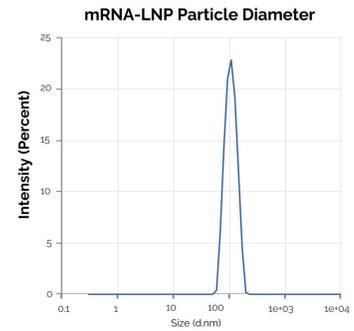
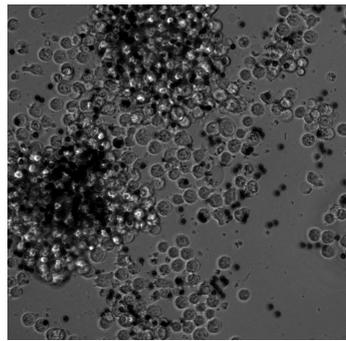
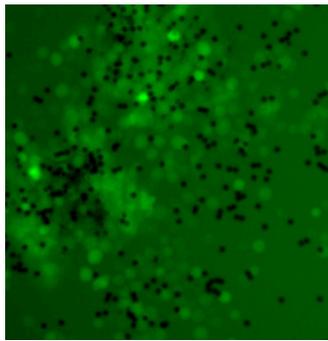
- Optimized IVT process with a high mRNA:DNA ratio of 200:1
- mRNA concentration up to 10 mg/mL
- High purity, mRNA >95%, circRNA >85%, saRNA >80%
- Process development, GMP manufacturing, and QC
- LNP encapsulation flow rate 80 mL/min



One-stop RNA-LNP CDMO Services



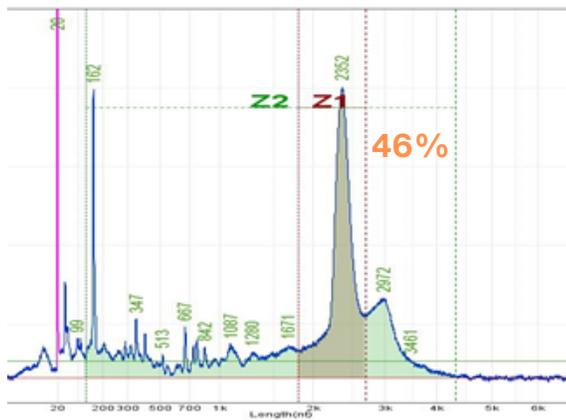
High transduction efficiency of mRNA-LNP in primary T cells.



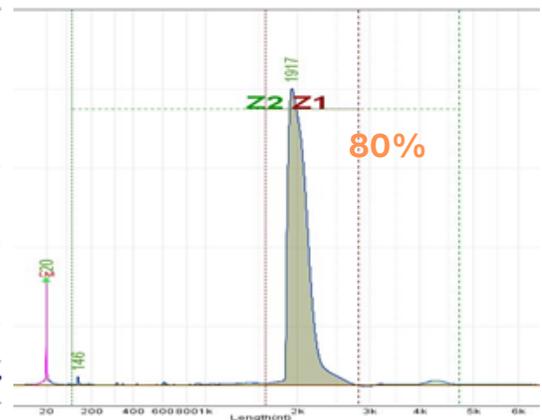
NeonGreen mRNA LNP were added to activated human primary T cells.
Left: fluorescence | Right: Phase contrast.

80% of circRNA purity achieved after process optimization

Conventional PIE Process

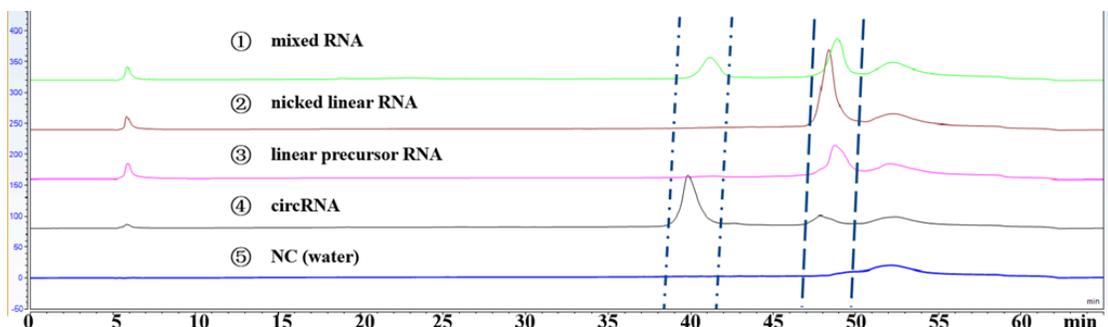


Optimized circRNA Process



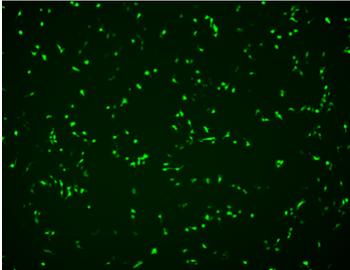
Reverse Phase HPLC (RP-HPLC): Analytical Method for circRNA Purity Assessment

RP-HPLC can effectively separate circRNA from small contaminants, linear RNAs.

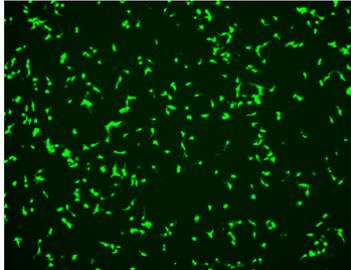


Enhanced saRNA Expression by Four Folds - Lower dose needed

WT saRNA



nsP Optimized saRNA

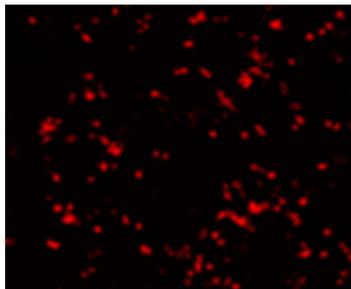
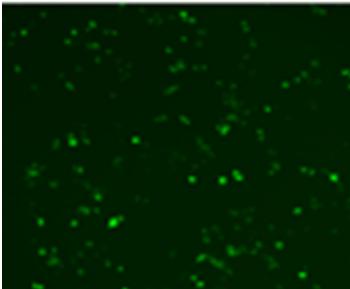


Protein expression from our optimized saRNA backbone is 4 times higher than that of the wild type.

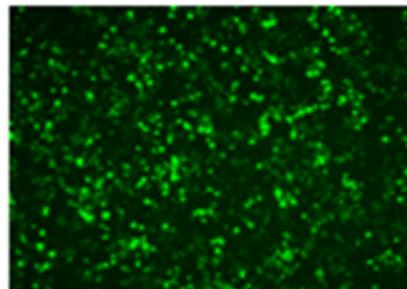
GFP saRNA produced from the wild-type and our nsP optimized backbones was transfected into 293T cells separately.

Poly-cistronic expression of saRNA

1ug Polycistronic saRNA (>10 kb)

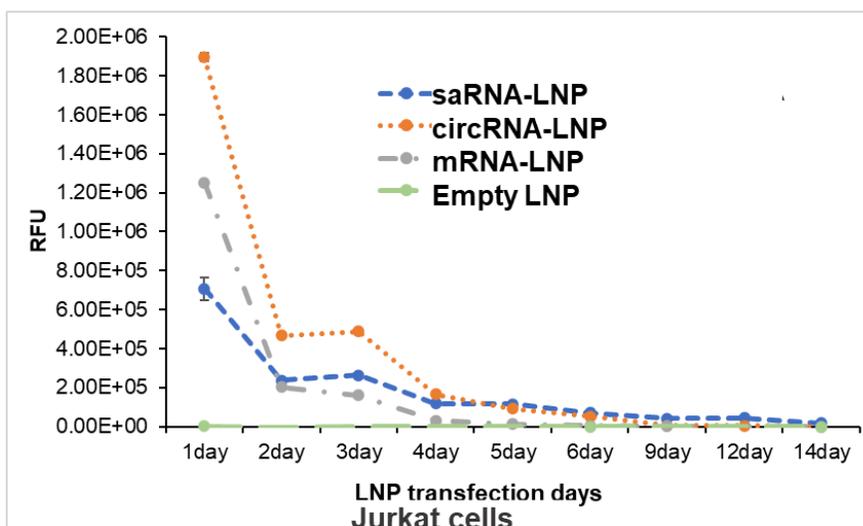


1ug Linear mRNA (1kb)



- Same amount of saRNA and mRNA was used
- saRNA molar concentration is 10 times lower than that of mRNA

Protein Expression Duration of mRNA, circRNA, and saRNA



Leading with Innovation, Excelling in Quality

RIGOROUS QUALITY CONTROL: THE UBRIGENE STANDARD

uBriGene presents a rigorous, data-driven quality control paradigm. Our QC matrix, reflecting encapsulation efficiency and nucleic acid integrity, aligns with stringent regulatory requirements. These metrics are not only markers of fidelity but also indicators of our commitment to reproducibility and scalability in mRNA therapeutic production.

	QC Item	QC Method
Quantity	mRNA purity	OD260/OD280
Identification	Capping efficiency	CE
	Length of Poly(A) tail	CE
Purity	Incomplete RNA test	HPLC
	dsDNA	ELISA
	RNA polymerase residual test	ELISA
	DNA template residual test	Fluorescence stain method
	T7-RNA polymerase residual test	ELISA
	DNase 1 residual test	ELISA
	RNase Inhibitor Residue test	ELISA
Safety	Sterility test	Direct culture method
	Bacteria endotoxin	Gel-clot method



Canada

1255-13351 Commerce Parkway,
Richmond, BC V6V 2X7

contact@ubrigene.com
www.ubrigene.com
1800 663 2528

United States

20400 Century Blvd,
STE 125, Germantown,
MD 20874

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China

B16, 2nd floor
Ai North tower
No. 218 Xinghu street
Suzhou Industrial Park
Jiangsu Province 210000