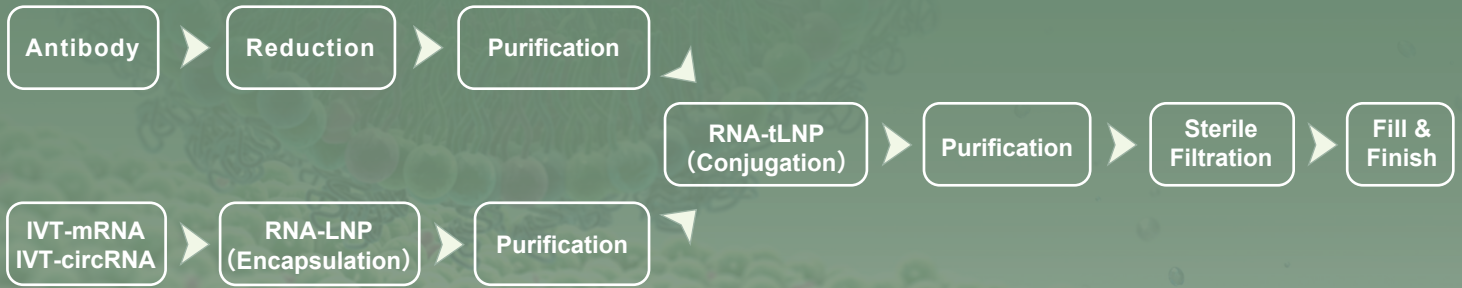


RNA-tLNP Workflow



RNA-tLNP Integrated Solution



IVT-mRNA

- Co-transcriptional/enzymatic capping
Capping efficiency > 90%
- Crude yield up to 10g/L

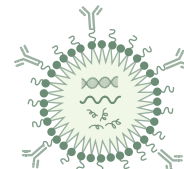
IVT-circRNA

- Proprietary circulation design technology
- Circulation efficiency up to 75%
- Purity > 85%



Antibody

- Successfully delivered multiple types of antibody fragments (Fab, scFv, VHH)
- Flexible GMP manufacturing scale — minimum batch size as low as 50 L

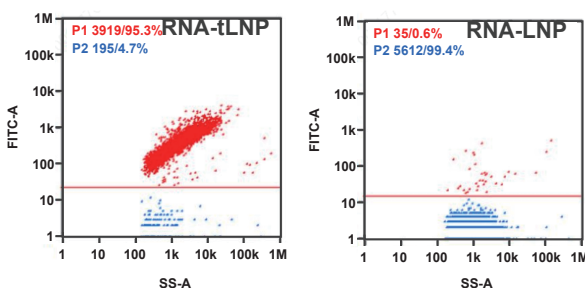


RNA-tLNP

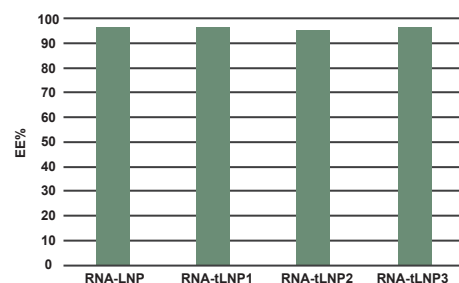
- LNP surface modification efficiency: > 95%
- Comparable encapsulation efficiency after conjugation
- Comprehensive quality analytical platform

ProBio RNA-tLNP Platform

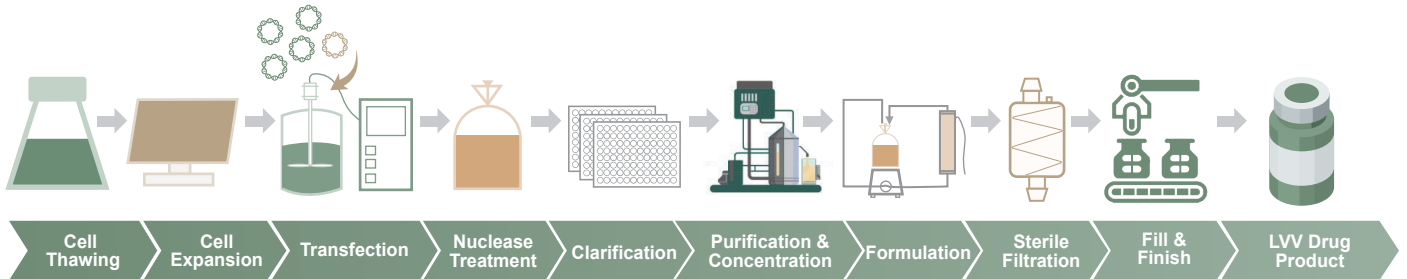
LNP surface modification efficiency: > 95%



Comparable encapsulation efficiency after conjugation



LVV DP Workflow (Serum-free Suspension Manufacturing Process)



Suspension Cell Line	Plasmid Packaging System	Upstream Process	Downstream Process
<ul style="list-style-type: none"> Proprietary cell line, no IP issue Flexible commercial licensing model FDA DMF registration 	<ul style="list-style-type: none"> Transfer plasmid Envelope plasmid Helper plasmids 	<ul style="list-style-type: none"> Serum-free suspension production process High titer and scale-up to 200L Upstream process development 	<ul style="list-style-type: none"> Downstream process development Formulation study: screen different buffers

In-house, Comprehensive LVV DP Analytical Platform

Critical Quality Attributes (CQA)		<ul style="list-style-type: none"> According to regulatory requirement, items like visible particles, container content, particulate matter, particle size, etc. are needed Specific quality standards for particulate matter and endotoxin based on LVV as drug product Comprehensive Mechanism of Action (MOA) biological activity analytical methods 	MOA (Mechanism of Action)	Analytical Methods
Appearance	Ratio of F/P titer		Intracellular gene analysis	qPCR ddPCR
Visible particulates	Residual nuclease		Expression analysis	Western Blot ELISA Flow cytometry
pH	Residual host cell protein			Functional assay
Osmolality	Residual host cell DNA			
Container content	Residual plasmid			
Particulate matter	Residual Host Transfer Gene (SV40)			
Particle size	Residual Host Transfer Gene (E1A)			
Target gene sequence of lentiviral vector (GOI)	Residual Host Cell DNA Fragment (≥200bp)			
Functional titer	Sterility			
p24 protein concentration	Endotoxin			

LVV DP Project Experience



Multi-project experience
In vivo CAR-T
Virus-like particles (VLPs)



Ongoing projects
Phase II clinical
stage (fastest)



NMPA & FDA IND
clearances



Phone / +1-732-885-9188 / +1-877-436-7274(Toll-Free)

Email / cdmo.us@probiocdm.com

Address / Building 9, 311 Pennington Rocky Hill Rd, Pennington, NJ 08534