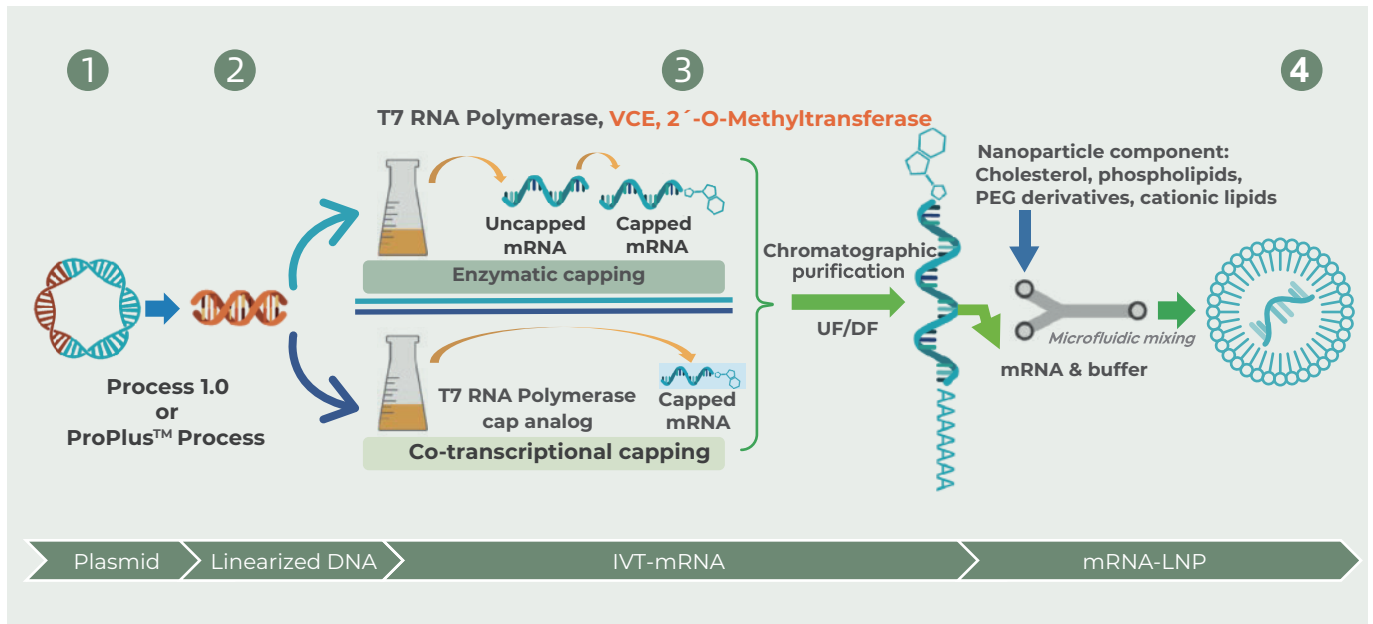


mRNA Vaccine Manufacturing Process



mRNA Plasmid Platform

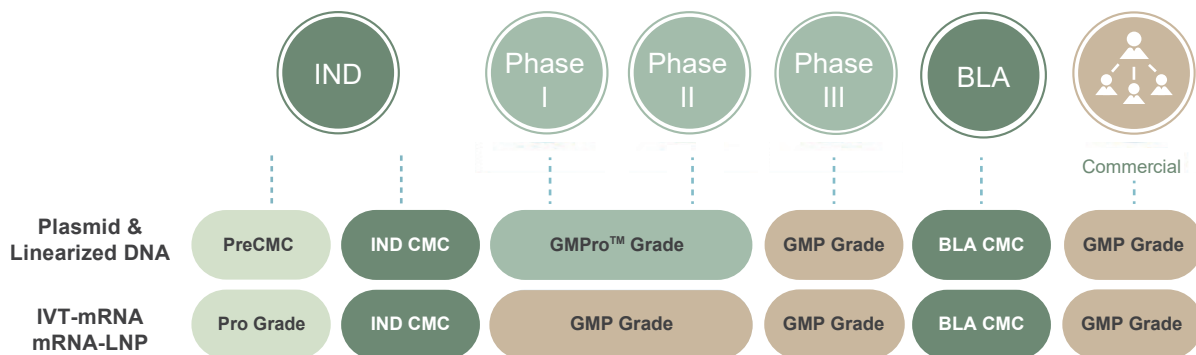
- Process 1.0 and **ProPlus™ process**: provide best solution for clients
- Leading **linearized DNA platform**
- **50+** ongoing projects
- **20+** IND clearances (US, China, Japan, Korea, etc.)
- **1st BLA & commercial project** in China

**6-Month
One-stop Solution
for IND Filing**

mRNA Platform

- IVT-mRNA: enzymatic and co-transcriptional capping
- LNP encapsulation: microfluidic technology
- mRNA QC: comprehensive, in-house, **compliant with the requirement in US, EU and CN**
- **3 mRNA IND clearances**

ProBio Service Overview – from Plasmid to mRNA



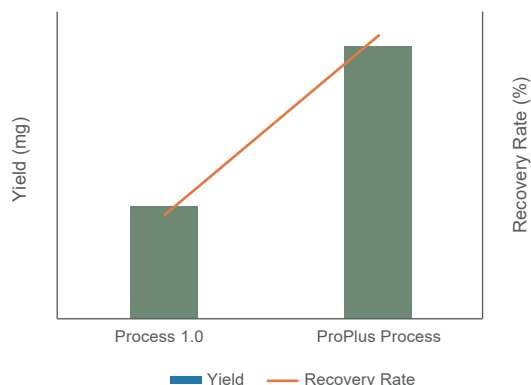
Plasmid ProPlus™ Process

ProPlus™ process has

- Less plasmid purification steps (in process control instead of full QC release)
- Optimized linearized DNA purification

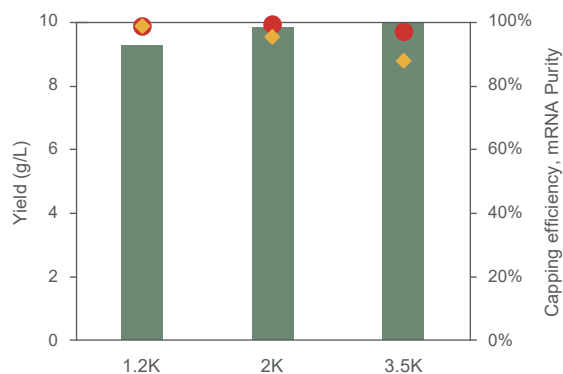
Advantage

- Improve recovery rate, **reduce product loss**
- Lower price: reduces **20%~50%**
- Shorter turnaround time: as fast as **5 weeks** (50% of Process 1.0)
- ProPlus™ process for low copy plasmid; Process 1.0 for high copy plasmid



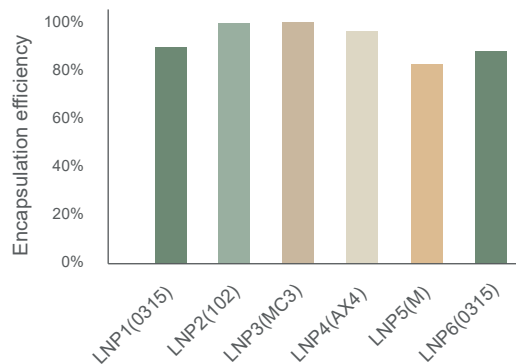
IVT-mRNA Platform

- Suitable for mRNA with different lengths 1.2K ~ 3.5K
- Two capping methods (co-transcriptional and enzymatic capping methods): capping efficiency >90%, up to 99%



mRNA-LNP Platform

- Universal LNP platform with excellent critical quality attributes
- Encapsulation efficiency up to 99.7%



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