

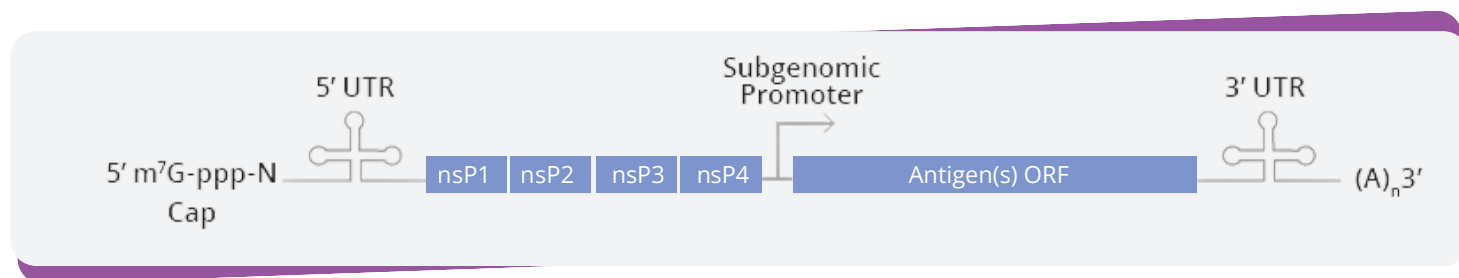
End-To-End mRNA Services at Curia



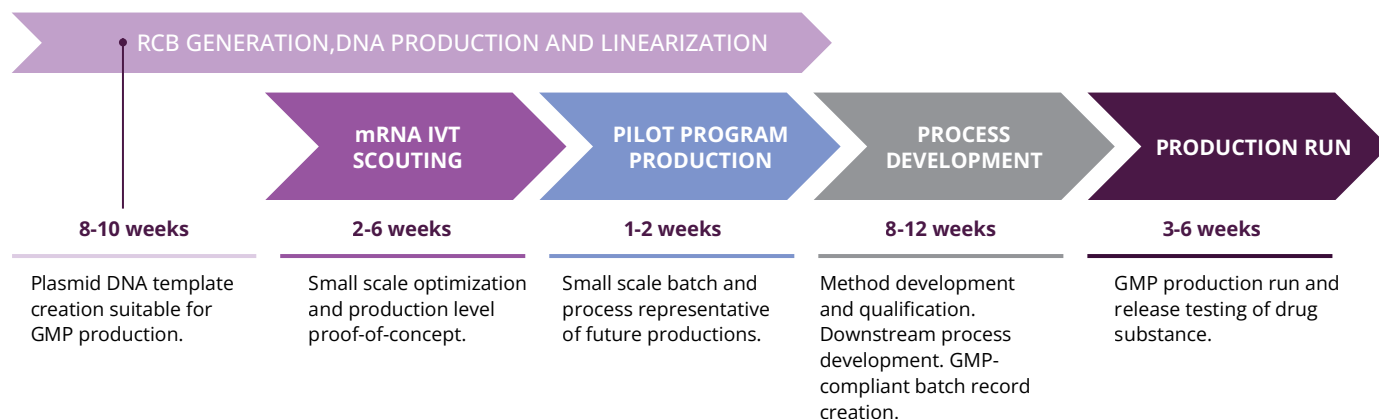
Curia's experience in both chemistry and biologics has produced high quality mRNA up to 16 kb in length in the clinic. Our U.S. based end-to-end capabilities meet your manufacturing needs for batch release of mRNA drug substance and LNP formulation and fill/finish.

Drug Substance Development & Manufacturing

- DNA template production
- Cell-free, enzymatic synthesis
- Co-transcriptional and enzymatic capping
- Modified and native nucleotides
- Short and long RNAs
 - Non-amplifying RNA: typically 1-6 kb
 - Self-amplifying RNA (saRNA): typically 9-16 kb
- Manufacturing to support clinical development
- ISO7 suite dedicated to mRNA production
- GMP compliant, single use equipment
- 0.1 to 40 L scale
- Free of animal-derived raw materials
- Full assays and analytics for batch release

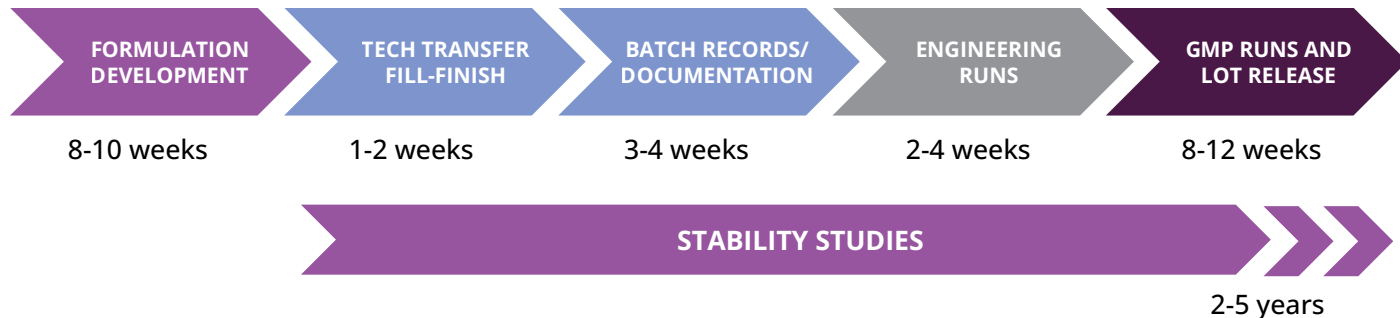


- Expertise in self-amplifying mRNA production as the first domestic manufacturer into phase I trials
- Multiple GMP campaigns completed in sequence
- Priority partner to core suppliers for material acquisition



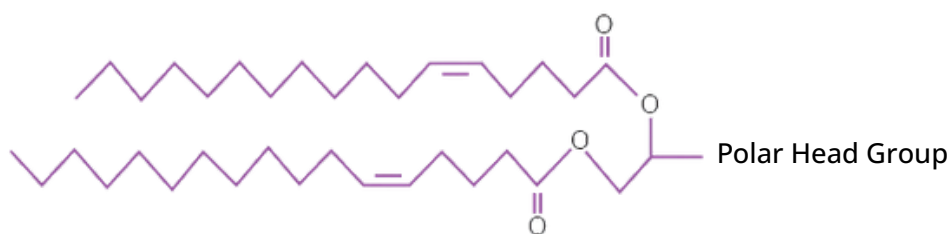
Drug Product Formulation Development & Manufacturing

- EU Grade A environment
- Vial size: 2-30 cc
- Fill volume: 0.2-32 mL
- Expertise and equipment to support multiple LNP methodologies (solvent injection, microfluidics, etc.) and associated analytics
- Max batch size:
 - Liquid: 20,000 units
 - Lyophilized: 1,200 - 5,000 (2 cc to 20 cc)
- Onsite analytics for in-process testing and batch release



Lipid Manufacturing

DEVELOPMENT	COMMERCIAL MANUFACTURING	FLEXIBLE OPTIONS
<ul style="list-style-type: none"> • International plants focused on process development and analytical services • Scale-up to 10 kg (non-GMP and GMP) • MF-UF-NF, chromatography development (1 L to 500 L) • Focus on custom ionizable, PEG and phospholipids • Extensive analytical capabilities 	<ul style="list-style-type: none"> • Multiple lines for manufacturing • Multiple chromatographic columns in various sizes - semi- automated - 14 L to 500 L each for normal phase, reverse phase, and ionic bed • Cold storage for lipids and packaging configurations to accommodate various volume split needs 	<ul style="list-style-type: none"> • Site selection based on the unique process, analytical, and chromatographic needs of each program • Multiple teams and parallel activities are planned to compress timelines when appropriate • Expedition of any regulatory needs • Established RM supply chain



Inoizable Cationic PEG-conjugates Phospholipids Steroid analogs

Client Testimonial

“Our collaboration with Curia helped us manufacture a new class of self-replicating RNAs which have the potential to deliver improved bioactivity, tolerability and efficacy profiles as compared to other RNA technologies. Curia scaled up a process for longer RNAs that enabled large-scale production at yields, purity and potency to support Replicate’s Phase 1 clinical trial.”

—————> Nathaniel Wang, Ph.D., co-founder and CEO of Replicate Bioscience