

IVT mRNA Synthesis Services

High-quality mRNA serves as a crucial tool in various scientific, medical, and biotechnological applications, especially in the mRNA vaccine and therapy development. The reliability and purity of the mRNA are essential for achieving accurate and reproducible results.

In vitro transcribed (IVT) mRNA synthesis lies in its ability to provide researchers and biotechnologists with a customizable, rapid, and controlled method for generating high-quality mRNA molecules for diverse applications.

At GenCefe Biotech, we specialize in providing cutting-edge IVT mRNA synthesis services. Our state-of-the-art facilities and experienced team ensure the production of high-quality synthetic mRNA tailored to meet your specific research or discovery needs.

Service Features

- One-stop solution: from codon optimization, gene synthesis, plasmid preparation, to in vitro transcription of mRNA and purification
- Flexible customized specifications: various modifications, end-capping, quantity, purity are available
- Strict quality control: standard QC items and a variety of customized QC items can be provided according to customer requirements

Service Workflow



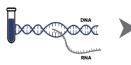














QC and Delivery:

Codon Optimization: Proprietary Al-aided

codon optimization technology platform effectively improves protein expression

Gene Synthesis:

Track record of synthesizing gene sequences of various difficulties and lengths; 100% accuracy verified by Sanger sequencing

Plasmid Preparation:

Flexible preparation specifications, generate ready-to-use linearized plasmid DNA for in vitro transcription

In Vitro Transcription: Self-developed RNA polymerase significantly

Comprehensive purification methods improves transcription to ensure high-purity efficiency mRNA products; customized QC items are available upon request

5' Cap	Poly A Tail	Modifications
Cap0 (m7GpppN)	110±5 nt A Tail	Pseudouridine
Cap1 (m7GpppNm)	Custom Tail	N1-Me-pUTP (m1Ψ)
Cap2 (m7GpppNmNm)	No Tail	5-methoxy-U
Uncapped		N6-methyl-A
		Unmodified

Service Specifications

Step	Description	Turnaround Time	Deliverables	
Gene Synthesis	Codon optimization Gene Synthesis and cloning into vector	Starting		
Plasmid Preparation	Plasmid preparation Plasmid linearization	-		
	20 μg-2 mg	1-2 weeks	for the synthesized gene Lyophilized or liquid mRNA*	
IVT mRNA	5 mg	2-3 weeks	S	
	>5 mg	Get a Quote		
Standard QC items	Appearance, mRNA length, sequence accuracy, RNA concentration, / A260/280			
Customized QC items (optional, extra charge)	Purity, PolyA tailing efficiency, capping efficiency, template DNA residue, protein residue, RNase residue, dsRNA detection, endotoxin content, bioburden	Get a Quote	СоА	

^{*} LNP-encapsulated mRNA cannot be lyophilized and can only be shipped in liquid form at low temperatures, which will incur additional dry ice and shipping costs.

Off-the-shelf mRNA Products:

Product Name	Size	Turnaround Time
copGFP mRNA	100 μg/tube	3-5 days
mCherry mRNA	100 μg/tube	3-5 days
Luciferase mRNA	100 μg/tube	3-5 days
Cas9 mRNA	100 μg/tube	3-5 days

GenCefe Biotech

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