CleanCap®

A Revolutionary mRNA Capping Technology

Leading the Way in mRNA™

TriLink BIOTECHNOLOGIES

part of Maravai LifeSciences

Effective mRNA Production Requires Efficient Capping

CleanCap® technology is a proprietary 5′ mRNA capping solution that enables robust, high-yield, manufacturing streamlined to be highly scalable for mRNA-based vaccine and therapeutic development. Unlike legacy methods, CleanCap offers a co-transcriptional, single-pot capping process that shortens manufacturing time and generates the optimal Cap1 structure for superior in vivo activity.

	Legacy Cap Analogs	CleanCap®
Transcriptional Yield	1.3 mg/mL	4 mg/mL
Capping Efficiency	>70%	>95%
Reduced Immunogenicity	No	Yes
Natural Cap	No	Yes
CleanCap is available for commercial licensing		

3X Transcriptional Yield

Significant yield increase compared to legacy capping agents, such as ARCA.

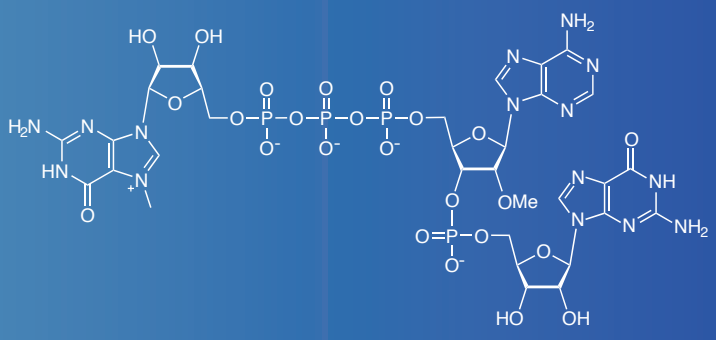
>95% Capping Efficiency

Single-pot reaction eliminates extra processing steps while maintaining high capping efficiency.

Reduced Immunogenicity

Natural Cap1 structure produces a more biologically active mRNA , evading the innate immune response to foreign RNA.

CleanCap Chemical Structure



Unmatched Efficiency and Yield

Accelerate mRNA manufacturing by cutting your capping process time in half while achieving three times the transcriptional yield (4 mg/mL) and a much-improved capping efficiency (>95%) over traditional methods.

Enzymatic Capping

- Transcription
- Diafiltration
- Capping
- Purification
- Final Processing

CleanCap

- One-Pot Transcription
- Purification
- Final Processing

CleanCap analogs support a variety of applications with consistently high capping efficiency.

CleanCap AG

- >95% capping efficiency
- Increases yield, even at large scales
- Superior in vivo activity

CleanCap AU

- Exclusively designed for self-amplifying RNA applications
- Yields the authentic alphavirus 5' end

Applications

- Infectious diseases
- Oncology
- Rare diseases
- Metabolic disorders
- Cell therapy
- Gene editing/CRISPR
- Reporter gene expression
- In vivo and ex vivo mRNA expression
- Vaccine development

Advance from Bench to Bedside with Ease

When scalable technologies are incorporated during the research stage, they allow a program to progress continually and rapidly—without the delays that can be encountered when validating new manufacturing processes. Maintaining scalability allows your project to keep to the timeline, absorb unexpected surges for product, and remain aligned with your clinical research goals. Our 118,000 sq ft facility contains multiple specialized manufacturing suites and support labs, ensuring success across a wide variety of synthesis scales.

	RESEARCH USE ONLY	FOR FURTHER PROCESSING*
Quality Standards	ISO 9001:2015	ISO 9001:2015, and additional quality provisions as described in our quality agreement
Release Documentation	Certificate of Analysis	Certificate of Analysis, Certificate of Origin, Certificate of Release
Batch Production Documentation	Synthesis sheets	Fully traceable Master Batch Record
Manufacturing Space	Controlled, unclassified	ISO 8 or 7, ISO 5 laminar flow hood final fill
Equipment Qualification	Qualification for critical systems	Installation and operational qualification of all instrumentation
Verification/Validation	n/a	Test method validation; manufacturing process verification, cleaning validation, computer system validation
Raw Materials Testing	n/a	Accept on Certificate of Analysis and testing of critical raw materials
Stability	Historical	Formal stability data

Why Partner With Us?

- >25 years of experience
- Trusted by top Pharma and Biotech companies—Including in leading COVID-19 vaccines
- Custom manufacturing grades and flexibility
- Propriety technology cuts process time in half
- Simplified supply chain
- Dedicated program team and day-to-day communication
- Reduced cost at scale

*A quality agreement is required to obtain GMP-grade raw materials. Please inquire for details.

Ver. 03.21.2022

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