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NEB expressions

a scientific update

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mRNA FACILITY

www.basefacility.org.au
+ mRNA design
+ DNA template

mRNA Synthesis Democratized with Open-source Approach by BASE Facility Researchers

By Lydia Morrison, Marketing Communications Manager, New England Biolabs

New England Biolabs Sales Manager of Australia & New Zealand, Jenny Brown, interviewed Professor Timothy Mercer and Associate Professor Seth Cheetham from the BASE mRNA Facility at the University of Queensland, Australia to find out more about their recently published novel protocol for mRNA synthesis in Nature Protocols, utilizing standard laboratory techniques and equipment to produce high-purity mRNA suitable for in vitro and in vivo preclinical studies.

Jenny Brown: Please tell us about the BASE facility.

Seth Cheetham: The BASE facility is a national facility that provides researchers around Australia with high-quality mRNA. We provide an end-to-end service, from mRNA design through to final formulation. This enables people to start using mRNA in their research to develop new vaccines

and therapies.

In addition to supporting scientists with mRNA, we also have our own internal research program, where we explore new mRNA manufacturing methods, quality control of mRNA, new approaches to deliver mRNA to tissues, and develop our own pipeline of mRNA candidates.

Timothy Mercer: Everyone thinks about mRNA in terms of medicines, vaccines and therapies, but scientists are increasingly realizing that mRNA makes a fantastic experimental reagent. We see the scientific community increasingly adopting mRNA for use in their experiments, especially in fields such as immunology and neuroscience, that have been otherwise difficult to explore.

Jenny Brown: What specific issue in mRNA manufacturing were you aiming to solve with this protocol?

Seth Cheetham: So far, mRNA manufacturing has been regarded as being a very specialized approach, which has only been accessible through specialized facilities such as the BASE facility. What we wanted to do was to develop an open-source approach to democratize mRNA access. This allows researchers around the world to produce high-quality mRNA in their own lab, and develop new vaccines and therapies.

Timothy Mercer: This protocol has really been developed with the researcher in mind. It's designed to be able to produce mRNA in a standard laboratory, using standard equipment, in an affordable manner. First, we design the mRNA using the mRNArchitect software (app.basefacility.org.au/). After that, we use a PCR approach to prepare that DNA template, which is then used for in vitro transcription to



BASE facility interviewees with NEB interviewer Jenny Brown. From left to right: Timothy Mercer, Jenny Brown, Seth Cheetham. Photo courtesy of Luke Brown, Run Media.

synthesize the mRNA. Finally the mRNA can be formulated within the lipid nanoparticle at the end for in vivo delivery, or within your

in vitro experiments, depending on what that final application is.

Jenny Brown: What are some of the technical hurdles labs commonly face when making mRNA?

Seth Cheetham: One of the issues in mRNA manufacturing was that it relied on plasma DNA, which is extracted from bacterial cells.

Timothy Mercer: A big challenge for plasmids is the bioburden, the contamination that they can sometimes introduce within the process. When you're making mRNA, you want to remove any of those contaminants, and so excluding the plasmid removes one of those primary sources of contaminants.

Seth Cheetham: We wanted to move away from this approach by using synthetic templates. So, we used PCR amplification to produce our templates either from a synthetic piece of DNA or from plasmid, which removes the need to grow large amounts of bacteria. This makes the process both cleaner and faster, and

results in a higher quality mRNA.

Jenny Brown: Who specifically do you think it will benefit the most? What type of researcher?

Timothy Mercer: I think all researchers have a lot to benefit from mRNA. I envision mRNA assuming a position alongside plasmids and proteins in terms of experimental tool.

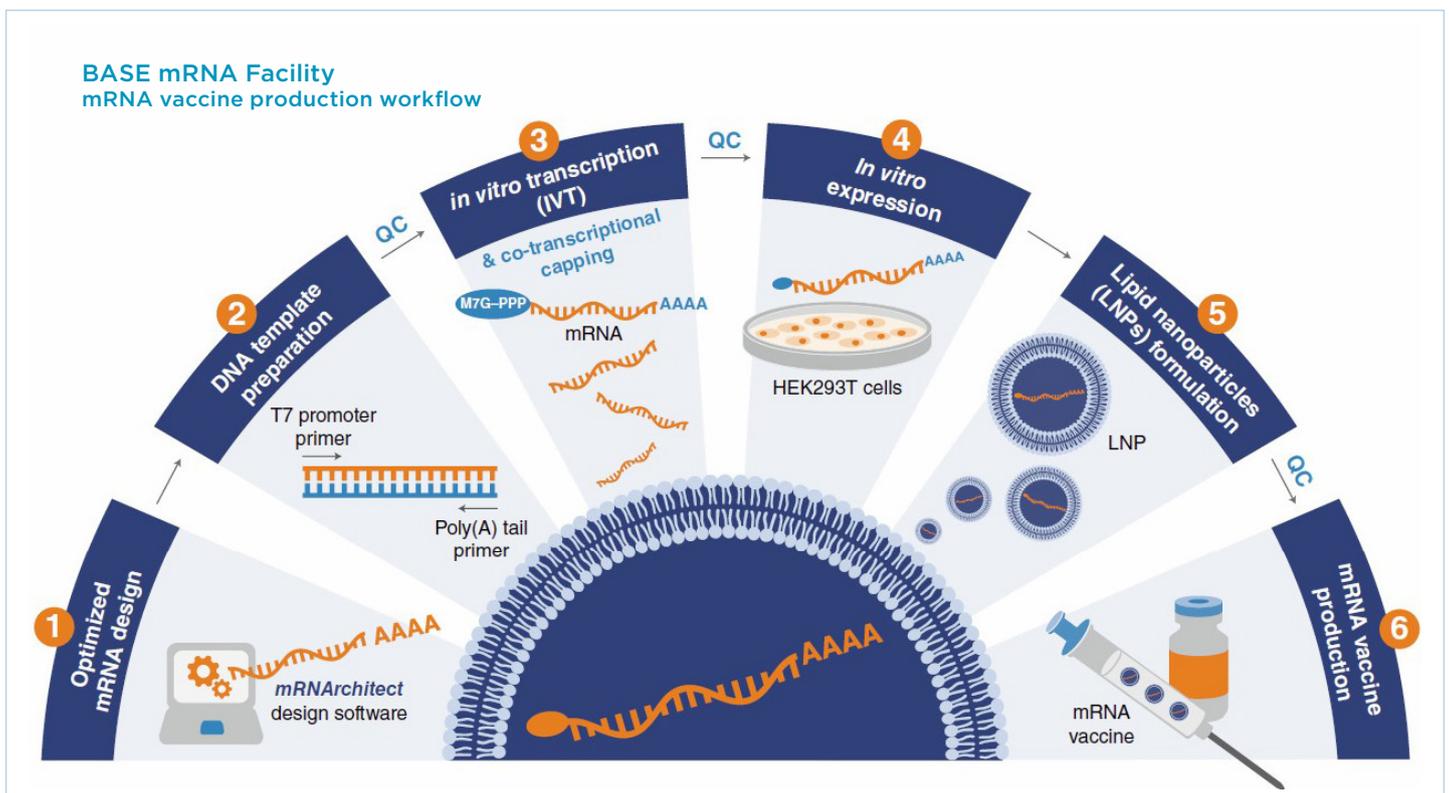
We support a lot of scientists who work with non-dividing or fickle or difficult cells, and they are getting really good results using mRNA. It's a really powerful tool to express genes in those difficult cell lines experimental models.

Jenny Brown: What global impacts do you see this protocol having?

Timothy Mercer: We hope that this protocol allows people to start adopting and producing mRNA within their lab. In some ways, it demystifies the process of making mRNA. This protocol is pretty easy-to-follow and provides guidelines to make sure you produce good, high-quality and non-contaminated mRNA. We just hope it gets adopted by different scientists all over the world, so they can start generating their own mRNA and start using it in their experiments.

Read the Publication

Leighton, L.J., Chaudhary, N., Tompkins, H.T. et al. The design, manufacture and LNP formulation of mRNA for research use. *Nat Protoc* 20, 3552–3581 (2025).
<https://doi.org/10.1038/s41596-025-01174-4>



This novel mRNA synthesis workflow relies on PCR for DNA template preparation, which is then used for in vitro transcription to synthesize the mRNA. Finally the mRNA can be formulated within the lipid nanoparticle at the end for final applications.

Migrate to Monarch



Choose Monarch for uncompromising quality of your nucleic acid purification

Monarch nucleic acid purification kits provide fast and reliable isolation and purification of high-quality DNA and RNA from a variety of sample types. Technologies used include best-in-class silica columns, silica-coated mag beads, or glass-beads for the isolation of high molecular weight DNA. The resulting nucleic acids are highly pure and ready for sequencing, cloning, PCR, and other enzymatic applications.

The Monarch nucleic acid purification portfolio can serve your needs, whether you are isolating nucleic acids from biological samples, cleaning up DNA and RNA from enzymatic reactions, extracting DNA fragments from gels, or purifying plasmids. Monarch DNA and RNA kits use purposefully reduced-plastic columns and bottles and come in compact packaging, providing environmental responsibility without compromising on performance.

Advantages

- Highly pure and concentrated nucleic acids
- Fast and easy workflows
- Column- and bead-based formats
- Kits for every application
- Less plastic and reduced packaging

25%
DISCOUNT

DNA purification with NEB:
Enjoy now an exclusive **25% discount** on your purchase of Monarch DNA Kits! Simply enter the promo code **"LUMO2026"** when ordering.

*The 25% discount is applicable to the list price of the Monarch DNA Kits listed in this issue. It is valid until June 30, 2026, and cannot be combined with other discounts. The offer is available only in selected countries. For more details, please contact your local distributor.



For more information, visit www.NEBMonarch.com



Interested in giving Monarch a try? Request a free sample from your local distributor.

The right technology for your application

Monarch Spin Columns

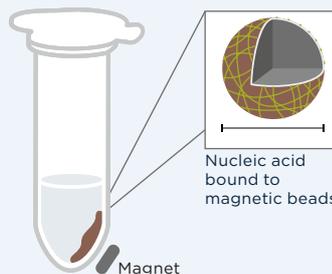
For fast and simple standard applications using centrifuges or vacuum manifolds.



Monarch Spin Columns offer the best-in-class silica column technology. The optimized design minimizes buffer retention and salt carryover, delivering highly pure and concentrated nucleic acids for your downstream needs.

Monarch Mag Beads

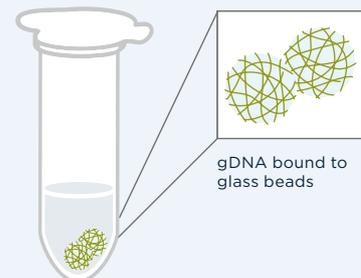
For high-throughput applications, compatible with manual and automated workflows.



Monarch Mag Beads feature a silica-coated surface for efficient nucleic acid binding and a submicron size that maximizes surface area. Their superparamagnetic core enables a fast magnetic response, ensuring easy handling and smooth integration into automated workflows.

Monarch Glass Beads

For the purification of extremely high molecular weight DNA.



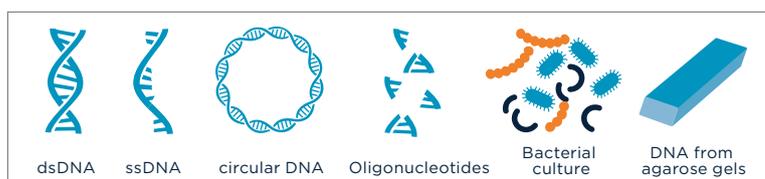
The Monarch Glass Bead-based kits utilize an optimized process that combines gentle cell lysis with a tunable fragment length generation, followed by precipitation of the extracted high molecular weight DNA onto the surface of large glass beads.

The ideal Monarch solution for your needs

DNA isolation and purification

Monarch DNA Purification Kits from NEB combine speed, reliability, and exceptional purity to meet the diverse needs of modern molecular biology workflows, whether you prefer the simplicity of spin columns or the flexibility of magnetic beads.

DNA input material

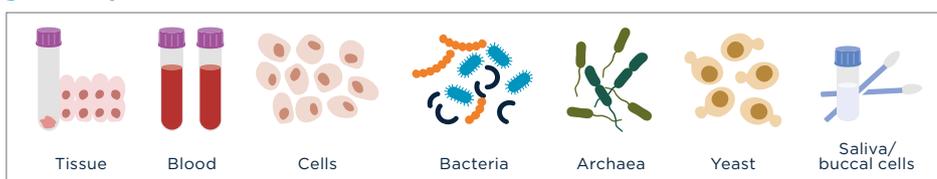


	MONARCH SPIN PCR & DNA CLEANUP KIT (5 µg)	MONARCH SPIN HIGH-CAPACITY DNA CLEANUP KIT (100 µg)	MONARCH MAG PCR & DNA CLEANUP KIT (5 µg)	MONARCH SPIN PLASMID MINIPREP KIT	MONARCH SPIN DNA GEL EXTRACTION KIT
Main specification	Purify DNA in 5 minutes and elute in as little as 5 µl	Purify and concentrate up to 100 µg DNA	Purify and concentrate DNA using magnetic beads	Easily purify plasmids with convenient colored buffer system	Extract excellent DNA yields and elute in as little as 5 µl
NEB#	T1130S/L	T1135V/S/L	T4130V/S/L	T1110S/L	T1120S/L
Kit size	50/250 preps	10/50/200 preps	10/100/400 preps	50/250 preps	50/250 preps
Technology	Spin column	Spin column	Magnetic beads	Spin column	Spin column
Input material	dsDNA, ssDNA, circular/linear DNA, oligonucleotides	dsDNA, ssDNA, circular/linear DNA, oligonucleotides, gDNA	dsDNA, ssDNA, circular/linear DNA, oligonucleotides, gDNA	Bacterial culture	dsDNA from agarose gels
Binding capacity	5 µg	100 µg	5 µg	20 µg	5 µg
Nucleic acid size	50 bp–25 kb (oligonucleotide protocol: ssDNA >16 nt, dsDNA >12 nt)	40 bp–25 kb (oligonucleotide protocol: ssDNA >12 nt, dsDNA >10 nt, gDNA protocol: ≥25 kb)	50 bp–25 kb (oligonucleotide protocol: ssDNA ≥18 nt, dsDNA ≥14 nt, gDNA protocol: ≥25 kb)	up to 25 kb	100 bp–25 kb
Elution volume	5–20 µl	50–200 µl	25–50 µl	30 µl	≥ 5 µl
Protocol time	5 min	Approx. 10 min	Approx. 20 min	Approx. 10 min	10–15 min, depending on gel melting time

Genomic DNA and high molecular weight DNA isolation

NEB offers two approaches for the extraction and purification of gDNA: the Monarch Spin gDNA Purification Kit, which is a silica spin column-based process and the Monarch HMW DNA Extraction Kits, which utilize a novel glass bead-based process for purification of extremely high molecular weight DNA.

gDNA input material



	MONARCH SPIN GDNA EXTRACTION KIT	MONARCH HMW DNA EXTRACTION KIT FOR CELLS & BLOOD	MONARCH HMW DNA EXTRACTION KIT FOR TISSUE
Main specification	Purify high-quality, genomic DNA from several sample types	Achieve DNA from cells & blood in the Megabase size range	Achieve DNA from tissue samples in the Megabase size range
NEB#	T3010S/L	T3050S/L	T3060S/L
Kit size	50/150 preps	5/50 preps	5/50 preps
Technology	Spin column	Glass beads	Glass beads
Input material	Cells, blood, tissue, bacteria, yeast, saliva, buccal swabs, gDNA requiring cleanup	Cells, blood	Tissue (e.g. mammalian, insect, amphibian, nematode), bacteria, yeast
Binding capacity	30 µg	not limited by glass beads	not limited by glass beads
Nucleic acid size	up to 80 kb (peak size > 50 kb)	100 kb to megabase range	100 kb to megabase range
Elution volume	≥35 µl	100 µl	100 µl
Protocol time	Varies by sample type	30 min for cells, 60 min for blood	90 min

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We've had great success with obtaining HMW DNA for long read sequencing from a variety of cell types, using less input and obtaining a comparable yield... It is straightforward and easy to use.

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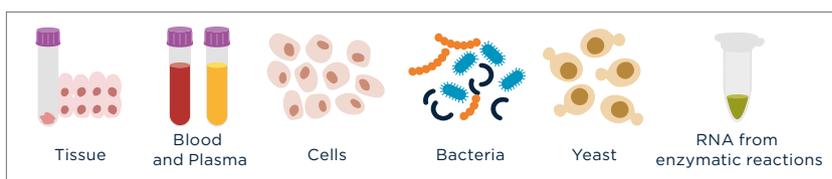
Inswasti Cahyani & Matt Loose, DeepSeq, University of Nottingham

Transform your RNA purification experience

RNA isolation and purification

NEB provides high-performance, easy-to-use RNA cleanup kits using silica-based spin columns. Compared to traditional methods such as phenol/chloroform extraction, precipitation, or gel purification, spin columns offer a faster, user-friendly way to clean and concentrate RNA.

RNA input material



	MONARCH SPIN RNA ISOLATION KIT (MINI)	MONARCH SPIN RNA CLEANUP KIT (10 µg)	MONARCH SPIN RNA CLEANUP KIT (50 µg)	MONARCH SPIN RNA CLEANUP KIT (500 µg)
Main specification	Purify RNA from multiple sample types and elute in as little as 10 µl	Efficiently purify and concentrate RNA after enzymatic reactions	Efficiently purify and concentrate RNA after enzymatic reactions	Efficiently purify and concentrate RNA from large-scale <i>in vitro</i> transcription reactions
NEB#	T2110V/S/L	T2030S/L	T2040S/L	T2050S/L
Kit size	10/50/200 preps	10/100 preps	10/100 preps	10/100 preps
Technology	Spin column	Spin column	Spin column	Spin column
Input material	Cells, tissues (e.g. insect, mammalian), plants, bacteria, yeast, blood, plasma	RNA from enzymatic reactions	RNA from enzymatic reactions	RNA from large-scale <i>in vitro</i> transcription reactions
Binding capacity	100 µg	10 µg	50 µg	500 µg
Nucleic acid size	≥20 nt total RNA (including small RNA, miRNA, mRNA, lncRNA, rRNA)	≥25 nt (modified protocol: ≥15 bp)	≥25 nt (modified protocol: ≥15 bp)	≥25 nt (modified protocol: ≥15 bp)
Elution volume	≥10 µl	≥6 µl	≥20 µl	≥50 µl
Protocol time	Varies by sample type	5 min	5 min	10–15 min, depending on elution incubation

Viral DNA and RNA isolation

The Monarch Mag Viral DNA/RNA Extraction Kit provides a rapid and reliable magnetic bead-based process for extracting viral nucleic acids from saliva and respiratory swab samples.

	MONARCH MAG VIRAL DNA/RNA EXTRACTION KIT
Main specification	Isolate viral nucleic acids using magnetic beads
NEB#	T4010S/L/X
Kit size	100/600/3×600 preps
Technology	Magnetic beads
Input material	Viruses (enveloped and non-enveloped dsDNA and ssRNA), saliva, respiratory swabs
Binding capacity	3 µg
Nucleic acid size	suitable for typical viral genome sizes
Elution volume	33–100 µl
Protocol time	Varies by protocol



RNA purification with NEB:

Enjoy now an exclusive 25% discount on your purchase of Monarch RNA Kits! Simply enter the promo code "LUMO2026" when ordering.

*The 25% discount is applicable to the list price of the Monarch RNA Kits listed in this issue. It is valid until June 30, 2026, and cannot be combined with other discounts. The offer is available only in selected countries. For more details, please contact your local distributor.

Tips for Successful RNA Extractions

- 1 Prevent RNase Activity:** Process samples quickly after harvest, use preservation reagents, and always ensure you are working in nuclease-free working environments.
- 2 Inactivate RNases after harvesting your sample:** Nucleases in your sample will lead to degradation, so inactivating them is essential.
- 3 Do not exceed recommended input amounts:** Buffer volumes are optimized for the recommended input amounts. Exceeding these can result in inefficient lysis and clog the column.
- 4 Ensure samples are properly homogenized/disrupted:** Samples should be disrupted and homogenized completely to release all RNA.
- 5 For sensitive applications, ensure proper gDNA removal:** gDNA is removed by the gDNA removal column (S2C) and subsequent on-column DNase I treatment.

Listen up! The message is spreading



Advance your RNA workflows with NEB

The versatility of RNA makes it a powerful tool in transforming how we understand, diagnose, and treat disease. Over the past several years, advances in RNA research have catalyzed breakthroughs in therapeutics, personalized medicine, molecular diagnostics, infectious disease research, and agricultural biology. Therefore, advanced tools for manipulation and analysis of mRNA are more important than ever.

For many years, NEB has been invested in the research and development of tools for the manipulation and analysis of mRNA. We offer a broad portfolio of reagents for purification, sequencing, detection, synthesis, and manipulation, all of which are vetted by our own research scientists in their work. Whether you are working in an academic or industrial setting, we have the products, services, and support that will help drive your research forward.

 <p>RNA Purification Transform your RNA purification experience with Monarch</p>	 <p>RNA Synthesis Synthesize high-quality RNA with HiScribe</p>
 <p>RNA Sequencing Achieve exceptional RNA Libraries from any sample with NEBNext</p>	 <p>RNA Detection Optimize your RT-qPCR with Luna</p>

Contact your local distributor to request **NEB Literature** supporting your RNA workflows:

- RNA Technical guide
- Monarch RNA brochure
- RNA sequencing brochure
- Luna brochure
- RNA synthesis brochure
- RNA “Metro map” poster



Avoiding RNase contamination

SOURCES <ul style="list-style-type: none">Dust & airSkin & hairAqueous solutions & reagentsMost surfaces (doorknobs, keyboards)	LABORATORY PRECAUTIONS <ul style="list-style-type: none">Wear laboratory gloves and change them oftenUse RNase-free certified, disposable plasticware and solutionsDecontaminate glassware & plasticwareMaintain a separate, clean surface for RNA work	SOLUTION PREPARATION <ul style="list-style-type: none">Diethylpyrocarbonate (DEPC) treatment:<ol style="list-style-type: none">1. Add 1 ml DEPC per liter of solution.2. Stir for 1 hour.3. Autoclave for 1 hour.⊗DEPC:<ul style="list-style-type: none">• Compounds with primary amine groups (e.g., Tris)• Compounds that are not stable during autoclavingNot using DEPC?<ul style="list-style-type: none">Prepare solution with Nuclease-free Water or Milli-Q[®] waterDissolving solids:<ul style="list-style-type: none">• Use high-purity solids (e.g., DTT, nucleotides, manganese salts)• Use autoclaved DEPC-treated or Milli-Q water• Sterilize with a 0.22 µm filter
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FEATURED PRODUCT

RNase Inhibitor, Murine

- Specifically inhibits RNases A, B, and C
- Recombinant for improved resistance to oxidation
- Ideal for reactions where low DTT concentrations are required
- (e.g., Real-time PCR)
- Glycerol-free version available to support lyophilization and automation workflows



GMP-grade reagent also available. Learn more at www.neb.com/GMP

Ordering Information

PRODUCT	NEB #	SIZE
RNase Inhibitor, Murine	M0314S/L	15,000/ 3,000 units
RNase Inhibitor, Murine (Glycerol-free)	M0628S	3,000 units

Synthesize high-quality RNA with HiScribe

New England Biolabs' reagents allow the synthesis of high-quality RNA - from template generation and transcription, to capping, tailing, and cleanup. Robust in vitro RNA synthesis requires optimization of each reaction component. NEB offers six in vitro RNA synthesis kits, all optimized to generate reproducible yields of quality RNA. Additionally, individual components can be purchased for in vitro transcription and mRNA capping.

HiScribe T7 mRNA Kit with CleanCap Reagent AG (E2080): Delivers highest-yield, natural Cap-1 mRNA with options for co- or post- transcriptional poly(A) tailing and streamlined cleanup via DNase I/LiCl.

HiScribe T7 ARCA mRNA Kit with Tailing (E2060): Enables co-transcriptional ARCA capping (Cap-0) with T7 RNA Polymerase plus enzymatic poly(A) addition, including DNase I/LiCl.

HiScribe T7 ARCA mRNA Kit (E2065): Provides flexible co-transcriptional ARCA capping (Cap-0) without Poly(A) Polymerase, letting you choose your preferred poly(A) tailing strategy.

HiScribe T7 High Yield RNA Synthesis Kit (E2040): Delivers robust, high-yield RNA synthesis across diverse template sizes with flexible protocols for challenging conditions and modified nucleotide incorporation.

HiScribe T7 Quick High Yield RNA Synthesis Kit (E2050): Enables fast, low-error RNA synthesis with a convenient master-mix format and included DNase I/LiCl for streamlined template removal and cleanup.

HiScribe SP6 RNA Synthesis Kit (E2070): Provides high-yield SP6-driven RNA synthesis with options for capped, labeled, or radiolabeled transcripts for versatile downstream applications.

Your mRNA synthesis workflow with NEB solutions

TEMPLATE GENERATION	IN VITRO TRANSCRIPTION	RNA CAPPING	POLY(A) TAILING	RNA PURIFICATION
 Q5[®] Hot Start High-Fidelity DNA Polymerase <small>COMING SOON</small>	HiScribe[®] T7 mRNA Kit with CleanCap[®] Reagent AG		E. coli Poly(A) Polymerase	Monarch[®] Spin RNA Cleanup Kit (10 µg)
	HiScribe T7 ARCA mRNA Synthesis Kit (with tailing)			
 phi29 DNA Polymerase	HiScribe T7 ARCA mRNA Synthesis Kit			Monarch Spin RNA Cleanup Kit (50 µg)
 TelN Protelomerase	 HiScribe T7 High Yield RNA Synthesis Components	 Faustovirus Capping Enzyme		Monarch Spin RNA Cleanup Kit (500 µg)
 dNTP solution mixes		 Vaccinia Capping System		
 BspQI*	HiScribe T7 Quick High Yield RNA Synthesis Kit	 mRNA Cap 2'-O-Methyltransferase		Lithium Chloride
 NEBuffer™ 4	HiScribe SP6 High Yield RNA Synthesis Kit	ARCA and other mRNA cap analogs		
DNA Assembly: • NEBuilder HiFi DNA Assembly • Golden Gate Assembly	T3 & SP6 RNA Polymerases	 S-Adenosylmethionine (SAM)		
	 T7 RNA Polymerase			
	Hi-T7 RNA Polymerase			

Ordering Information

PRODUCT	NEB #	SIZE
HiScribe T7 mRNA Kit with CleanCap Reagent AG	E2080S/L	20/100 rxns
HiScribe T7 ARCA mRNA Kit (with Tailing)	E2060S	20 rxns
HiScribe T7 ARCA mRNA Kit	E2065S	20 rxns
HiScribe T7 High Yield RNA Synthesis Kit	E2040S/L	50/250 rxns
HiScribe T7 Quick High Yield RNA Synthesis Kit	E2050S/L	50/250 rxns
HiScribe SP6 RNA Synthesis Kit	E2070S	50 rxns



Learn more about products for your RNA-related workflow at www.NEBrna.com

NGS Library Prep? We've got you covered

Achieve exceptional RNA Libraries with NEBNext

The NEBNext suite of products supports sequencing of multiple types of RNAs, with sample prep tools that streamline workflows, minimize inputs, improve library yields and quality, and allow you to sequence relevant RNAs.



NEBNext UltraExpress RNA Library Prep Kit

- Streamlined workflows
- For central applications and input amounts
- Save time, consumables, and costs
- Automation friendly



NEBNext Ultra II Library Prep Kits for RNA

- Flexible, modular workflows
- For demanding samples with low or high input amounts
- Directional and non-directional workflow options



NEBNext Low-bias Small RNA Library Prep Kit

- Analyze small RNA species without library prep-generated bias
- Simple and streamlined library prep workflow



NEBNext Single Cell/Low Input RNA Library Prep Kit

- For single cell or ultra-low input
- Obtain full-length, uniform transcript coverage, regardless of input amount

Scale your NGS output

NEBNext reagents have been automated for several applications on various liquid handling automation platforms.

Why NEBNext is ideal for automation

- Fewer components for easy setup
- Streamlined workflows reduce errors
- Lower bead use cuts cost per reaction
- Low input amounts still deliver strong sequencing results
- Robust reagents ensure reliable, high-yield libraries
- Reagent volumes automation compatible
- Modular design for maximum flexibility



For automated solutions for NEBNext reagents, visit www.neb.com/automation



For the full NEBNext product portfolio, visit www.neb.com/automation

Ordering Information

PRODUCT	NEB #	SIZE
NEBNext UltraExpress RNA Library Prep Kit	E3330S/L	24/96 rxns
NEBNext Ultra II Directional RNA Library Prep Kit for Illumina	E7760S/L	24/96 rxns
NEBNext Ultra II Directional RNA Library Prep with Sample Purification Beads	E7765S/L	24/96 rxns
NEBNext Ultra II RNA Library Prep Kit for Illumina	E7770S/L	24/96 rxns
NEBNext Ultra II RNA Library Prep Kit with Sample Purification Beads	E7775S/L	24/96 rxns
NEBNext Low-bias Small RNA Library Prep Kit	E3420S/L	24/96 rxns
NEBNext Single Cell/Low Input RNA Library Prep Kit for Illumina	E6420S/L	24/96 rxns



Interested in giving NEBNext a try? Request a free sample from your local distributor.



Did you know that many NEB products can be purchased in large volumes and custom formats? Learn more at www.neb.com/customizedsolutions

Lighting the way.



Optimize your (RT-)qPCR with Luna

Make a simpler choice

- Convenient master mix and supermix formats and user-friendly protocols simplify reaction setup
- Non-interfering, visible tracking dye eliminates pipetting errors
- Formulated with a unique passive reference dye, compatible across a wide variety of thermal cyclers



(RT-)qPCR with NEB: Enjoy now an exclusive 25% discount on your purchase of Luna Mixes! Simply enter the promo code "LUMO2026" when ordering.

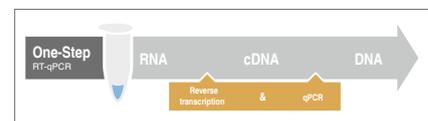
*The 25% discount is applicable to the list price of the Luna Mixes listed in this issue. It is valid until June 30, 2026, and cannot be combined with other discounts. The offer is available only in selected countries. For more details, please contact your local distributor.

Advantages

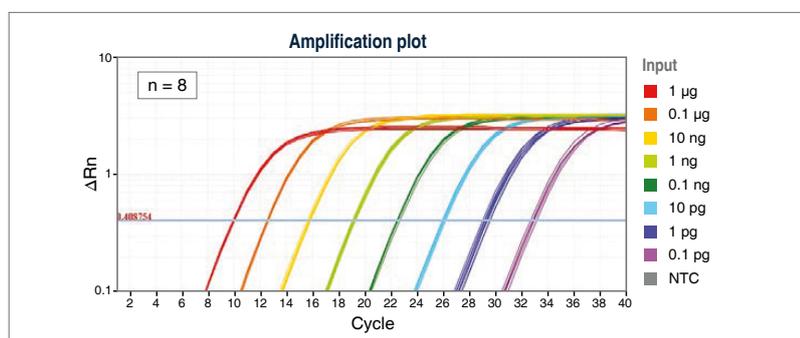
- Highest reliability and reproducibility
- Excellent sensitivity and accuracy on all templates (AT-rich, GC-rich,...)
- Simple reaction setup and fast protocols
- MIQE-Guideline validated
- Compatible with all qPCR machines

Optimize your One-Step RT-qPCR

- Luna WarmStart RT paired with Hot Start Taq enables room temperature setup and stability
- 4X option allows for more sample input, increasing sensitivity
- Available in a lyophilized format

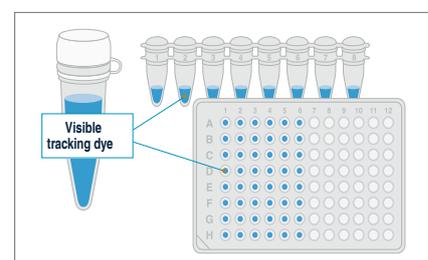


Luna products offer exceptional sensitivity, reproducibility, and qPCR performance



RT-qPCR targeting human GAPDH with a Universal One-Step RT-qPCR Kit of input template concentrations (1 μg – 0.1 pg Jurkat total RNA) with 8 replicates at each concentration, following recommended protocols, including a 10-minute RT step 5°C for the Luna WarmStart Reverse Transcriptase. NTC = non-templated control.

Luna products feature a blue tracking dye eliminating pipetting errors



Ordering Information

PRODUCT	NEB #	SIZE
Luna Universal One-Step RT-qPCR Kit	E3005S/L/X/E	200/500/1,000/2,500 rxns
Luna Universal Probe One-Step RT-qPCR Kit	E3006S/L/X/E	200/500/1,000/2,500 rxns
Luna Probe One-Step RT-qPCR Kit (No ROX)	E3007E	2,500 rxns
Luna Probe One-Step RT-qPCR 4X Mix with UDG	M3019S/L/X/E	200/500/1,000/2,000 rxns
Luna Probe One-Step RT-qPCR 4X Mix with UDG (No ROX)	M3029S/L/E	200/500/2,000 rxns
LunaScript Multiplex One-Step RT-PCR Kit	E1555S/L	50/250 rxns
LyoPrime Luna Probe One-Step RT-qPCR Mix with UDG	L4001S/P	120 rxns/ 1 x 96 wells

”

The choice of One-step kit is critical for sensitivity and at the same time a major cost factor. We recommend the NEB Luna Universal Probe One-Step RT-qPCR Kit (E3007), which is attractively priced and performs among the most sensitive One-step kits we tested.

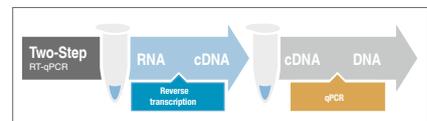
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– VIENNA COVID-19 Detection Initiative (VCDI)

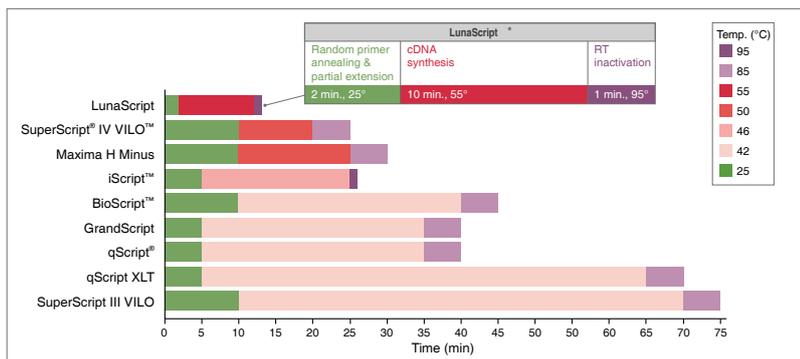
Find the right Luna product for your application

Speed up your Two-Step RT-qPCR

- LunaScript RT SuperMix is ideal for first strand cDNA synthesis with a fast 13-minute protocol
- Primer-free option enables flexibility of primers used for optimal cDNA synthesis



The LunaScript RT SuperMix offers the shortest available first-strand cDNA synthesis protocol



Ordering Information

PRODUCT	NEB #	SIZE
Luna Universal qPCR Master Mix	M3003S/L/X/E	200/500/1,000/2,500 rxns
Luna Universal Probe qPCR Master Mix	M3004S/L/X/E	200/500/1,000/2,500 rxns
LunaScript RT Master Mix Kit (Primer-free)	E3025S/L	25/100 rxns
LunaScript RT SuperMix Kit	E3010S/L	25/100 rxns
LunaScript RT SuperMix	M3010L/X/E	100/500/2,500 rxns

Easy miniaturization of your qPCRs:

In this new application note, our technology partner Hamilton shows you how to establish assay miniaturization with low-volume qPCRs using MagPip technology and the Luna Universal qPCR Master Mix.

Take advantage of the protocol to:



- boost throughput
- save reagents
- reduce plastic waste

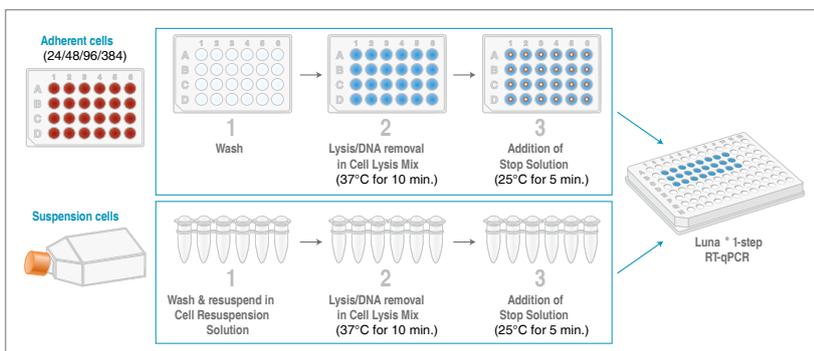


Read the application note at www.neb-online.de/qPCRAutomation

Go direct to RNA quantitation

- Direct RNA quantification from cell lines, eliminating the need for RNA extraction
- 15-minute sample preparation protocol prior to RT-qPCR

Luna Cell Ready offers an easy, direct workflow



Ordering Information

PRODUCT	NEB #	SIZE
Luna Cell Ready One-Step RT-qPCR Kit	E3030S	100 + 500 rxns
Luna Cell Ready Probe One-Step RT-qPCR Kit	E3031S	100 + 500 rxns



Interested in giving Luna a try? Request a free sample from your local distributor.



Learn more about Luna at www.LUNAQPCR.com

Save 25% on your DNA/RNA purification and (RT-)qPCRs with NEB



Enjoy now an exclusive 25% discount on your purchase of Monarch Kits and Luna Mixes! Simply enter the promo code "LUMO2026" when ordering.



Migrate to Monarch Monarch Nucleic Acid Purification Kits

Designed for performance with sustainability in mind



Lighting the way Luna (RT-)qPCR Products

Unrivalled performance for all your (RT-)qPCR needs

Further information on pages 4, 5, 6, 10, and 11.

*The 25% discount is applicable to the list price of the Monarch Kits and Luna Mixes listed in this issue. It is valid until June 30, 2026, and cannot be combined with other discounts. The offer is available only in selected countries. For more details, please contact your local distributor.

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APR 17	ESCMID Munich, Germany	JUL 04	FEBS Maastrich, Netherlands
JUN 08	EACR Budapest, Hungary	SEP 07	EMBO – The lipid code to life Dresden, Germany
JUN 13	ESHG Gothenburg, Denmark	SEP 28	DGHM Hamburg, Germany

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