



Monarch[®] RNA Cleanup Kits and Total RNA Miniprep Kit

From New England Biolabs

NOW AVAILABLE AT MEDSTORE



Monarch[®] Kits for RNA Cleanup

The Monarch RNA Cleanup Kits provide a fast and simple silica column-based solution for cleanup and concentration of RNA after enzymatic reactions (including in vitro transcription (IVT), DNase I treatment, capping and labeling), as well as after RNA isolation (e.g., TRIzol[®] extraction). Kits are available in three different binding capacities: 10 µg, 50 µg and 500 µg, each containing unique columns designed to prevent buffer retention and ensure no carryover of contaminants.

PRODUCT	NEB#	LIST PRICE	PROMOTIONAL PRICE*
NEW Monarch RNA Cleanup Kit (10 µg)	T2030S - 10 preps	\$73.00	\$51.10
	T2030L - 100 preps	\$308.00	\$278.60
NEW Monarch RNA Cleanup Kit (50 µg)	T2040S - 10 preps	\$68.00	\$47.60
	T2040L - 100 preps	\$378.00	\$264.60
NEW Monarch RNA Cleanup Kit (500 µg)	T2050S - 10 preps	\$78.00	\$54.60
	T2050L - 100 preps	\$635.00	\$444.50

Advantages:

- Clean up RNA with simple bind/wash/elute protocol, utilizing a single wash buffer
- Elute in as little as **6 µl** (NEB #T2030) or **20 µl** (NEB #T2040)
- Bind up to 500 µg of RNA (NEB #T2050)
- Adjust cutoff size down to 15 nt with a slight protocol modification
- Order only what you need, with kit components, including columns and buffers, available separately

Monarch Kit Specifications:

MONARCH RNA CLEANUP KIT	NEB #T2030 (10 µg)	NEB #T2040 (50 µg)	NEB #T2050 (500 µg)
Binding Capacity	10 µg	50 µg	500 µg
RNA Size Range	≥ 25 nt (≥ 15 nt with modified protocol)		
Typical Recovery	70–100%		
Elution Volume	6–20 µl	20–50 µl	50–100 µl
Purity	$A_{260/280} > 1.8$ and $A_{260/230} > 1.8$		
Protocol Time	5 minutes of spin and incubation time		10–15 minutes of spin and incubation time
Common Downstream Applications	RT-PCR, RNA library prep for NGS, small RNA library prep for NGS, RNA labeling	RT-PCR, RNA library prep for NGS, formation of RNP complexes for genome editing, microinjection, RNA labeling, transfection	RT-PCR, RNA library prep for NGS, RNA labeling, RNAi, microinjection, transfection



*TERMS & CONDITIONS: Offer valid in Canada only. Expires March 31st, 2019. Discount is eligible for products listed on this flyer. Promotion not valid for cash or cash equivalent towards purchase(s). No substitutions. Offer may not be applied to existing, pending or prior orders. One or more of these products are covered by patents, trademarks and/or copyrights owned or controlled by New England Biolabs, Inc. For more information, please email us at gbd@neb.com. The use of these products may require you to obtain additional third party intellectual property rights for certain applications. SYBR[®] is a registered trademark of Molecular Probes, Inc., now owned by Life Technologies, Inc. TRIzol[®] is a registered trademark of Molecular Research Center, Inc. NANODROP[™] is a trademark of Thermo Fisher Scientific. DROPSENSE[™] is a trademark of Perkin Elmer, Inc.

Monarch[®] Total RNA Miniprep Kit

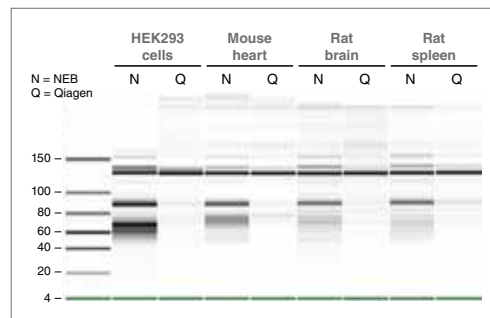
The Monarch Total RNA Miniprep Kit is a comprehensive solution for sample preservation, cell lysis, gDNA removal, and purification of total RNA from a wide variety of biological samples, including cultured cells, blood, and mammalian tissues. Additionally, tough-to-lyse samples, such as bacteria, yeast, and plant, can be processed with just a few additional steps. Cleanup of enzymatic reactions or purification of RNA from TRIzol[®]-extracted samples is also possible using this kit. Purified RNA has high quality metrics, including $A_{260}/280$ and $A_{260}/230$ ratios ≥ 1.8 , high RIN scores, and minimal residual gDNA. Captured RNA ranges in size from full-length rRNAs down to intact miRNAs. Additionally, differential binding conditions allow selective capture or exclusion of the sub-200 nucleotide RNA pool that includes miRNA, 5S rRNA, and tRNA. Purified RNA is suitable for downstream applications, such as RT-qPCR, cDNA synthesis, RNA-seq, Northern blot analysis, etc.

PRODUCT	NEB#	LIST PRICE	PROMOTIONAL PRICE*
Monarch Total RNA Miniprep Kit	T2010S - 50 preps	\$333.00	\$233.10

Advantages:

- Use with a wide variety of sample types
- Purify RNA of all sizes, including miRNA & small RNAs > 20 nucleotides
- Elute in as little as **30 µl**
- Efficiently remove DNA using provided **DNase I** and **gDNA removal columns**
- Process blood and tissue with included **Proteinase K** and stabilization reagent
- Protocols also available for RNA fractionation and cleanup
- Save money with value pricing for an all-in-one kit

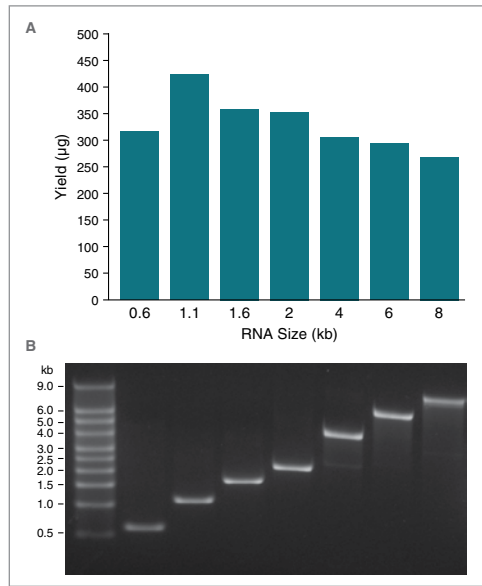
The Monarch Total RNA Miniprep Kit successfully purifies small RNAs below 200 nucleotides, enabling a more accurate representation of the total RNA pool



RNA preps were performed on HEK293 cells, mouse heart, rat brain, or rat spleen using the Monarch Total RNA Miniprep Kit (N) (NEB #T2010) and the RNeasy[®] Mini Kit from Qiagen (Q). Equivalent amounts were resolved on a Bioanalyzer 2100 using the Small RNA chip. Monarch-purified RNA contains significantly more RNA in the sub-200 nucleotide pool.

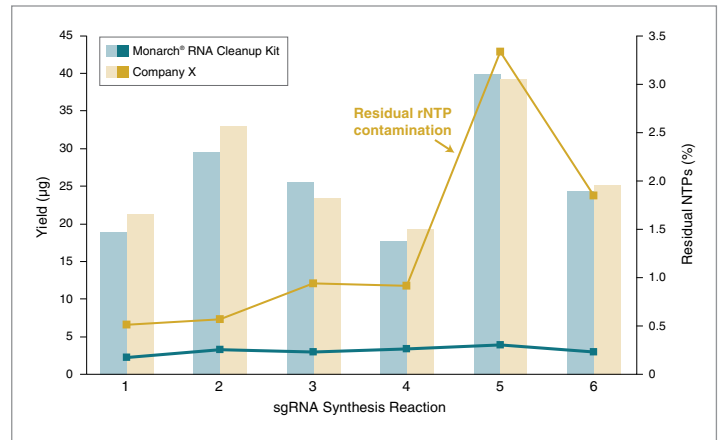
Monarch[®] Kits for RNA Cleanup

The Monarch RNA Cleanup Kit (500 µg) is suitable for cleaning up large quantities (>250 µg) of RNA from *in vitro* transcription reactions



A. RNA transcripts of varying sizes (0.6–8 kb) were synthesized using the HiScribe[™] T7 Quick High Yield RNA Synthesis Kit (NEB #E2050) using 1.5–1.8 µg of DNA template for 2 hours at 37°C. 40 µl of each *in vitro* transcription (IVT) reaction was cleaned up using the Monarch RNA Cleanup Kit (NEB #T2050). RNA yields were calculated from the resulting A260, measured using a Nanodrop[™] spectrophotometer and ranged from 268–425 µg of RNA per IVT reaction. B. RNA integrity (200 ng/lane) was assessed on a 1% agarose-TBE gel stained with SYBR[®] Gold.

The Monarch RNA Cleanup Kit (50 µg) produces sgRNA yields consistent with competitor RNA cleanup kits and with lower residual NTP contamination

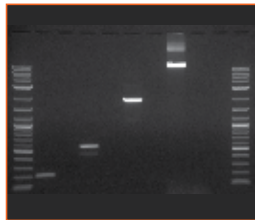


Six different sgRNA synthesis reactions from the EnGen[®] sgRNA Synthesis Kit, *S. pyogenes* (NEB #E3322) were cleaned up using either the Monarch RNA Cleanup Kit (NEB #T2040) or a competitor kit (according to manufacturer's recommendations) and eluted in 50 µl nuclease-free water. sgRNA yield was calculated from the resulting A260, measured using a Trinean DropSense[™] 16. The Monarch RNA Cleanup Kit produced sgRNA yields consistent with other commercially available RNA cleanup kits.

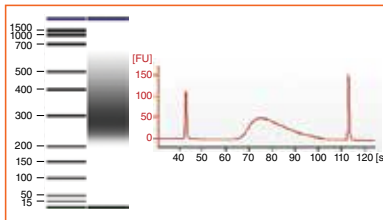
Following cleanup, residual nucleotides (NTPs) were measured by LC-MS and are reported as percent area NTPs (rATP+rCTP+rGTP+rUTP)/percent area sgRNA. The NEB Monarch RNA Cleanup Kit consistently outperforms other commercially available RNA cleanup kits in the removal of residual NTPs from sgRNA synthesis reactions.

Monarch[®] Total RNA Miniprep Kit

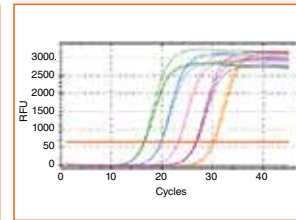
A. RT-PCR, HeLa



B. RNA library prep, rat liver



C. RT-qPCR, Tomato leaf



	HeLa	NIH 3T3	Human whole blood	PBMC	Rat liver	Rat brain	Rat kidney	Mouse muscle	Mouse heart	Rat spleen	Tomato leaf	Corn leaf	<i>S. cerevisiae</i>	<i>E. coli</i>	<i>B. cereus</i>
RIN	9.8	9.8	8.0	7.6	9.2	8.8	8.6	9.4	8.9	9.2	8.0	7.9	9.9	9.8	10
A _{260/280}	2.01	2.08	2.04	2.04	2.06	2.07	2.04	2.06	2.09	2.06	2.10	2.09	2.05	2.11	2.11
A _{260/230}	2.21	2.23	2.11	2.35	2.07	2.18	2.14	2.22	2.41	2.25	2.38	2.30	2.36	2.41	2.46

Total RNA from a broad array of sample types was purified using the Monarch Total RNA Miniprep Kit (NEB #T2010). Aliquots were run on an Agilent[®] Bioanalyzer[®] 2100 using the Nano 6000 RNA chip (*S. cerevisiae* RNA was run using a plant Nano assay). RIN values and O.D. ratios confirm the overall integrity and purity of the RNA. To demonstrate compatibility with downstream applications, samples were subsequently used for RT-PCR (+/- RT) (A) for detection of 4 different RNA species using ProtoScript[®] II Reverse Transcriptase (NEB #M0368)/LongAmp[®] Taq DNA Polymerase (NEB #M0323), NGS library prep (B) using NEBNext[®] Ultra[™] II RNA Library Prep Kit (NEB #E7760) and RT-qPCR (C) using Luna[®] One-Step RT-qPCR Reagents (NEB #E3005).

Howard Cukier, Ph.D.
Territory Manager, Ontario
Cell: (416) 527-2352 | hcukier@neb.com



be INSPIRED
drive DISCOVERY
stay GENUINE