

AllPrep® DNA/RNA Kits

For simultaneous purification of genomic DNA and total RNA from the same cell or tissue sample

AllPrep DNA/RNA Kits are designed for purifying both genomic DNA and total RNA from a single cell or tissue sample. Since there is no need to divide the sample into two for separate purification procedures, maximum yields of DNA and RNA can be achieved. The purified DNA and RNA are eluted separately and ready to use in any downstream application. The kits are available in spin-column format for micro- and mini-sized samples and in 96-well format.

AllPrep DNA/RNA Kits offer:

- High-quality genomic DNA and total RNA from the same sample
- High yields of DNA and RNA from precious samples
- Short, streamlined protocols
- Highly standardized workflow

DNA and RNA from the same sample

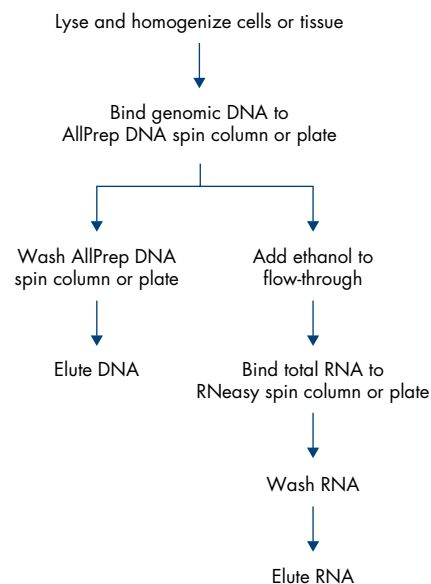
A simple workflow allows the purification of high-quality DNA and RNA from the same sample (see flowchart and Figures 1–2). Both cultured cells and easy-to-lyse tissues can be processed, either at low-throughput using spin columns or at high-throughput using 96-well plates (Table 1).

Table 1. AllPrep DNA/RNA Kits

Kit	Format	Starting material	Time
AllPrep DNA/RNA Micro Kit	Spin column	≤5 x 10 ⁵ cells or ≤5 mg tissue	<40 minutes
AllPrep DNA/RNA Mini Kit	Spin column	≤10 ⁷ cells or ≤30 mg tissue	<40 minutes
AllPrep DNA/RNA 96 Kit	Spin column	≤2 x 10 ⁶ cells or ≤10 mg tissue*	<60 minutes

* Only half this amount is possible when processing plates using a vacuum and centrifuge instead of just a centrifuge.

AllPrep DNA/RNA Procedure



Complete solution for systems biology

The kits form part of QIAGEN's solution for preparing multiple analytes from the same sample. These include Allprotect Tissue Reagent, which stabilizes DNA, RNA, and protein in tissues, and RNAprotect® Cell Reagent, which stabilizes DNA and RNA in cells. Both reagents deliver immediate stabilization at room temperature. For tissues, the TissueRuptor® and Tissuelyser II provide fast disruption at low- to high-throughputs.

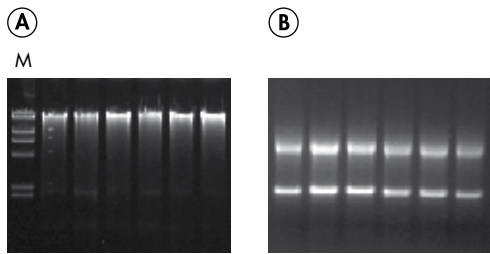


Figure 1. Simultaneous purification of genomic DNA and total RNA. Genomic DNA and total RNA were purified from 10 mg samples of rat liver using the AllPrep DNA/RNA Mini Kit. **A** Purified DNA samples were analyzed on a 0.8% agarose gel. **B** Purified RNA samples were analyzed on a 1.2% formaldehyde agarose gel. **M**: markers.

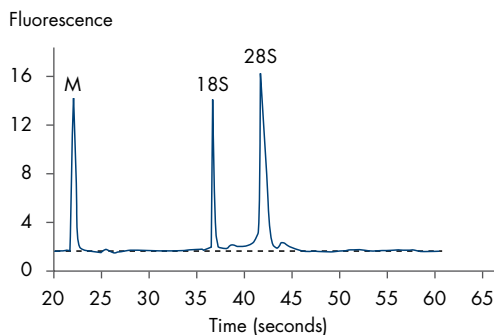


Figure 2. High-quality total RNA. Total RNA was purified from 1×10^6 Jurkat cells using the AllPrep DNA/RNA Mini Kit and analyzed on the Agilent® 2100 bioanalyzer. The RIN value was 10, indicating intact RNA. **M**: marker; **18S**: 18S rRNA; **28S**: 28S rRNA.

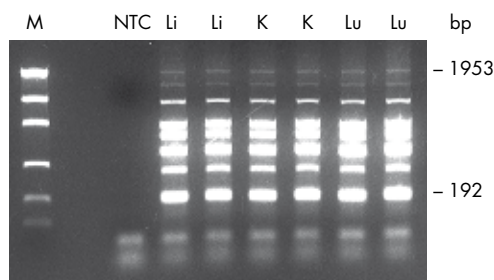


Figure 3. Multiplex PCR of 8 targets. Genomic DNA was purified from mouse tissues using the AllPrep DNA/RNA Mini Kit. Multiplex PCR of 8 targets (192–1953 bp; GC content in the range of 19–61%) was performed using 100 ng DNA per sample. **M**: markers; **NTC**: no template control; **Li**: liver; **K**: kidney; **Lu**: lung.

AllPrep DNA/RNA Micro and Mini Kits

The AllPrep DNA/RNA Micro Kit is specially designed for purifying genomic DNA and total RNA from very tiny samples, including laser-microdissected cryosections. For larger samples, the AllPrep DNA/RNA Mini Kit is the kit of choice.

Benefits of AllPrep DNA/RNA Micro and Mini Kits:

- Processing of individual samples in less than 40 minutes
- DNA and RNA from the same precious sample
- Maximum yields even from tiny samples
- High-quality DNA and RNA for any application

The purified genomic DNA has an average length of 15–30 kb (Figure 1), depending on homogenization conditions, and is well suited for any application, including Southern, dot, and slot blot analyses, DNA methylation analysis, PCR and multiplex PCR (Figure 3). The purified total RNA is ready to use in any application, such as RT-PCR, real-time RT-PCR, differential display, cDNA synthesis, Northern, dot, and slot blot analyses and microarray analysis (Figure 4).

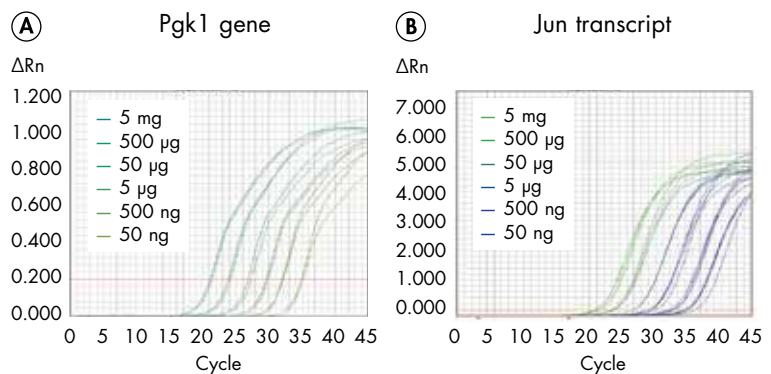


Figure 4. Wide dynamic range. Genomic DNA and total RNA were purified from 10-fold serial dilutions of rat kidney homogenate using the AllPrep DNA/RNA Micro Kit; at each dilution, DNA was purified from duplicates, and RNA was purified from 4 replicates. **A** Real-time PCR analysis of the *Pgl1* gene and **B** real-time RT-PCR analysis of the *Jun* transcript showed reliable quantification over a wide dynamic range, from 5 mg down to 50 ng tissue.

Other AllPrep Kits in spin-column format are also available. For systems biology applications, the AllPrep DNA/RNA/Protein Mini Kit provides simultaneous purification of DNA, RNA and protein from cells and tissues. For gene expression analysis experiments, the AllPrep RNA/Protein Kit is the ideal solution, allowing purification of RNA and native protein from cultured cells.

AllPrep DNA/RNA 96 Kit

The AllPrep DNA/RNA 96 Kit is well suited for high-throughput purification of genomic DNA and total RNA from up to 96 samples. The 96-well purification plates of the kit are rapidly and conveniently processed using either a centrifuge or a combination of vacuum and centrifuge.*

Benefits of the AllPrep DNA/RNA 96 Kit:

- Processing of 96 samples in less than 60 minutes
- DNA and RNA from the same sample
- Streamlined protocols for 96-well plates
- Highly reproducible DNA and RNA yields

By allowing the analysis of DNA and RNA from the same sample, the AllPrep DNA/RNA 96 Kit is the ideal tool for sample preparation in genomics and systems biology. Efficient purification of high-quality DNA and RNA from different tissue types is achieved (Figures 5–6 and Table 2), and without the need for additional RNase or DNase digestion (Figure 7).

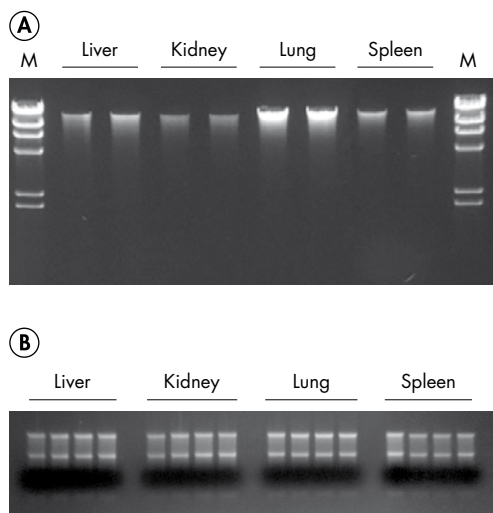


Figure 5. Reproducible purification of DNA and RNA in 96-well format.

Genomic DNA and total RNA were purified from mouse tissues using the AllPrep DNA/RNA 96 Kit. **A** Purified DNA samples were analyzed on a 0.8% agarose gel. **B** Purified RNA samples were analyzed on a 1.2% formaldehyde agarose gel. **M**: GelPilot® Lambda HindIII Marker.

Table 2. High-quality RNA from tissues

Rat tissue	RIN value
Liver	9.4
Lung	9.5
Spleen	9.6
Thymus	10.0

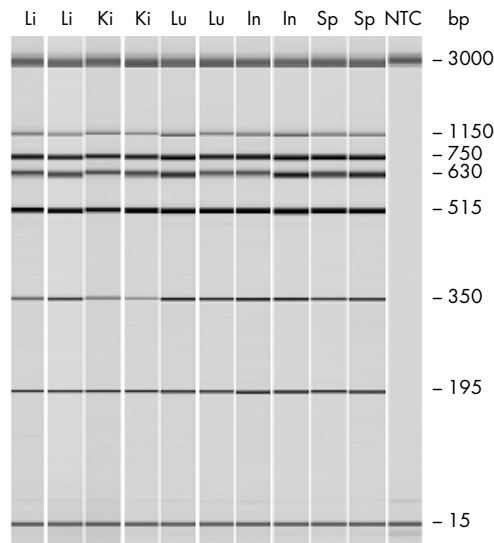


Figure 6. High-quality DNA for reliable multiplex PCR analysis. Genomic DNA was purified from mouse tissues using the AllPrep DNA/RNA 96 Kit. Six targets (195–1150 bp) were amplified by multiplex PCR and then analyzed on the QIAxcel system. **Li**: liver; **Ki**: kidney; **Lu**: lung; **In**: intestine; **Sp**: spleen; **NTC**: no template control (shows upper and lower markers).

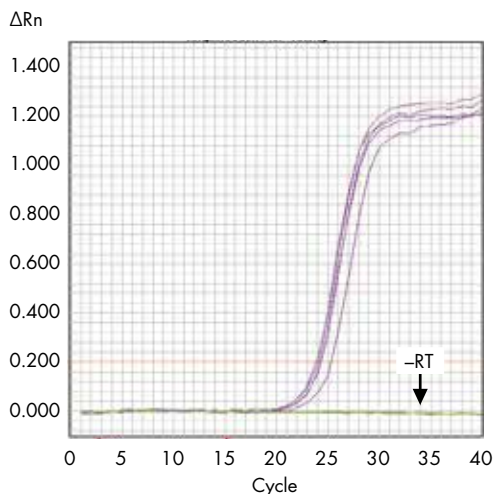


Figure 7. RNA with no genomic DNA contamination.

Total RNA was purified from rat kidney using the AllPrep DNA/RNA 96 Kit. Real-time RT-PCR analysis of the PGK1 transcript was performed using a primer–probe set that could amplify and detect both mRNA and genomic DNA sequences. The flat amplification plot for the no RT control (**–RT**) indicates the absence of genomic DNA.

* For processing of QIAGEN® 96-well plates, the QIAvac 96 vacuum manifold and the QIAGEN 96-Well-Plate Centrifugation system are available (see back page for ordering information).

Ordering Information

Product	Contents	Cat. no.
AllPrep DNA/RNA Micro Kit (50)	For 50 micropreps: Includes AllPrep DNA Spin Columns, RNeasy® MinElute® Spin Columns and Buffers	80284
AllPrep DNA/RNA Mini Kit (50)	For 50 minipreps: Includes AllPrep DNA Spin Columns, RNeasy Mini Spin Columns and Buffers	80204
AllPrep DNA/RNA 96 Kit (4)	For 4 x 96 preps: Includes AllPrep 96 DNA Plates, RNeasy 96 Plates and Buffers	80311
Accessories		
QIAvac 96 – for vacuum processing of 96-well plates		
QIAvac 96	Vacuum manifold; includes QIAvac 96 Top Plate, Base, Waste Tray, Plate Holder, Rack of Collection Microtubes	19504
QIAGEN 96-Well-Plate Centrifugation system – for spin processing of 96-well plates		
Centrifuge 4-15C	Universal laboratory centrifuge with brushless motor	Inquire
Plate Rotor 2 x 96	Rotor for 2 QIAGEN 96-well plates*	81031
Allprotect Tissue Reagent – for immediate stabilization of DNA, RNA and protein in animal and human tissues		
Allprotect Tissue Reagent (100 ml)	100 ml Allprotect Tissue Reagent, Allprotect Reagent Pump	76405
RNAprotect Cell Reagent – for immediate stabilization and convenient transport of sorted or cultured cells		
RNAprotect Cell Reagent (250 ml)	250 ml RNAprotect Cell Reagent	76526
TissueRuptor – for low-throughput disruption of a wide range of biological samples using disposable probes		
TissueRuptor	Handheld rotor–stator homogenizer, 5 TissueRuptor Disposable Probes	Inquire
TissueRuptor – for low-throughput disruption of a wide range of biological samples using disposable probes		
Tissuelyser II	Universal laboratory mixer-mill disruptor	85300

* The Plate Rotor 2 x 96 is available exclusively from QIAGEN and its distributors. Under the current liability and warranty conditions, the rotor may only be used in Centrifuges 4-15C and 4K15C from QIAGEN, and freely programmable models of

AllPrep Kits, Allprotect Tissue Reagent, RNAprotect Cell Reagent, TissueRuptor and Tissuelyser II are intended for research use. No claim or representation is intended to provide information for the diagnosis, prevention or treatment of a disease.

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