

# QIA Cube



**Year of Purchase:**

**Cost:**

## Performance

### Highly pure plasmid DNA

The QIAcube together with the QIAprep Spin Miniprep Kit enables fully automated purification of up to 20 µg molecular biology grade plasmid DNA. The fully automated purification procedure — including lysis — provides yields of plasmid DNA comparable to the manual procedure (see figure [DNA yields comparable to the manual procedure](#)). Purified DNA is suitable for use in routine molecular biology applications, such as fluorescent sequencing, cloning, or transfection of robust cells (see figure [Reliable sequencing results](#)).

### High-quality genomic DNA

Using the QIAamp DNA Blood Kit, the QIAcube enables purification of reproducible yields of highly pure genomic DNA (see figure [Reproducible DNA yields](#)). DNA purified using the QIAcube performs well in sensitive PCR even when large amounts of eluate are used, demonstrating the high purity of the DNA (see figure [High PCR performance](#)).

### Efficient purification of viral nucleic acids

The QIAcube together with the QIAamp MinElute Virus Spin Kit enables efficient purification of viral nucleic acids. To evaluate the risk of sample-to-sample carryover during and between runs, the QIAamp MinElute Virus Spin procedure was subjected to rigorous testing using an alternating checkerboard setup of negative and highly positive plasma samples ( $1 \times 10^8$  IU/ml of a typical DNA virus). All of the highly positive samples were detected. All negative samples, in the checkerboard runs and the all-negative runs were unresponsive (see table “No sample carryover detected”).

Negative and highly positive ( $1 \times 10^8$  IU/ml typical DNA virus) plasma samples arranged in an alternating sequence on the QIAcube were purified using the QIAamp MinElute Virus Spin Kit and analyzed by real-time RT-PCR. Mean  $C_T$  value for positive samples was 19. Samples with  $C_T > 45$  were regarded as negative. Under these conditions sample carryover was not detected.

No sample carryover detected	1	2	3	4	5	6	7	8	9	10	11	12
Run 1	19.5	X	19.4	X	18.8	X	X	19.0	X	19.1	X	19.8
Run 2	X	19.1	X	18.9	X	18.8	18.7	X	19.2	X	18.9	X
Run 3	X		X	X	X	X	X	X	X	X	X	X

### Pure, high performance RNA

Together with the QIAcube, the RNeasy Mini Kit enables efficient automated purification of total RNA from animal cells, demonstrated by consistent RNA yields (see figure [Consistent yields of RNA](#)). The quality of RNA purified using the QIAcube is comparable to the manual procedure (see figure [Comparison of automated and manual RNA purification](#)).

### High-quality proteins

The QIAcube and Ni-NTA Spin Kit provide reliable purification of highly pure 6xHis-tagged proteins (see figure [Highly reproducible protein purification](#)). Purified proteins are suitable for many applications, including functional investigations, crystallization pre-studies for determination of three-dimensional structure, assays involving protein–protein and protein–DNA interactions, and immunization to produce antibodies.

### Efficient cleanup of DNA fragments

The QIAcube makes DNA cleanup easier than ever. Proven QIAquick technology together with optimized protocols enables direct purification of double- or single-stranded DNA fragments, from 100 bp to 10 kb. Primers, nucleotides, enzymes, and other impurities are efficiently removed and recovery of DNA is comparable to the manual procedure (see figure [High recovery of PCR products](#)).

### Principle

The QIAcube enables continued use of well-established QIAGEN spin-column kits and eliminates the need for tedious manual steps. The innovative QIAcube controls integrated components including a centrifuge, heated shaker, pipetting system, and robotic gripper. This enables the QIAcube to fully automate more than 40 QIAGEN spin-column kits.

The QIAcube is preinstalled with a variety of protocols for purification of RNA, genomic DNA, plasmid DNA, viral nucleic acids, and proteins, plus DNA and RNA cleanup. All standard protocols in the expanding range can also be downloaded free of charge. In addition, customized protocols tailored to meet your specific application demands can also be requested.

### Procedure

The QIAcube enables purification of highly pure nucleic acids or proteins using a simple lyse, bind, wash, elute procedure (see [flowchart](#)). Over 40 QIAGEN spin-column kits can be automated on the QIAcube.

### Unparalleled ease of use

The QIAcube takes ease of use to a new level. No external PC is required, saving valuable laboratory space. An integrated touch screen simplifies protocol selection, and clear on-screen messages guide the user through worktable setup. For increased ease of use and high process safety, labware and accessories fit onto the worktable only in the correct orientation. In addition, a fully automated load check helps to ensure that samples, reagents, and labware are correctly loaded.

### New dedicated kits for DNA and RNA preps

Dedicated QIAcube Kits further simplify automated spin preps on the QIAcube and increase convenience. Kits are currently available for purification of RNA, genomic DNA, and viral RNA.

Rotor-adapters supplied with the kits are preloaded with spin columns and elution tubes, delivering greater convenience and time savings. Furthermore, ease of use is increased and user errors minimized. Waste is reduced as the content of the dedicated kits is tailored to purification on the QIAcube and tubes required for the manual procedure are not included.

## Applications

The QIAcube is highly suitable for academic research laboratories as well as pharmaceutical, biotechnology, and biomedical research laboratories performing applications, such as:

- Sequencing/sequencing analysis
- Gene expression analysis
- Genotyping
- Proteomics