Product Profile

QIAamp® Fast DNA Tissue Kit

For rapid isolation of genomic DNA from solid tissue samples

Genotyping and other DNA analyses using PCR or next-generation sequencing require a suitable amount of high-quality genomic DNA as starting material. The most common bottleneck to obtaining high-quality DNA is tissue lysis. Fibrous or other hard-to-lyse tissues require lengthy and tedious protocols that often result in low yields of low-quality DNA. The QIAamp Fast DNA Tissue Kit, based on proven QIAGEN® technologies, overcomes this bottleneck by providing innovative disruption tubes that significantly improve yield and shorten the overall time to result.

The QIAamp Fast DNA Tissue Kit provides:

- Yield improvements of 5–10-fold compared to standard methods
- Reduced lysis time from hours to just 15 minutes
- High-integrity DNA suitable for PCR and NGS applications
- Complete removal of inhibitors
- Automated extraction on the QIAcube®

Get results faster with our new disruption protocol

The QIAamp Fast DNA Tissue Kit uses a novel combination of mechanical, chemical and enzymatic lysis. Each kit is supplied with disruption tubes that contain a special stainless steel bead with a unique shape that aids tissue disruption more thoroughly than other methods. Firstly, the tissue sample and reagent mix are added to the tubes and homogenized using a common benchtop vortexer (with appropriate adapters) or in a bead mill, such as the TissueLyser II or LT, followed by a short lysis in the same tube. DNA is then extracted from the lysate using proven QIAamp technology. The pretreatment reduces the total DNA extraction time from several hours to just 30 minutes (Figure 1). ▷

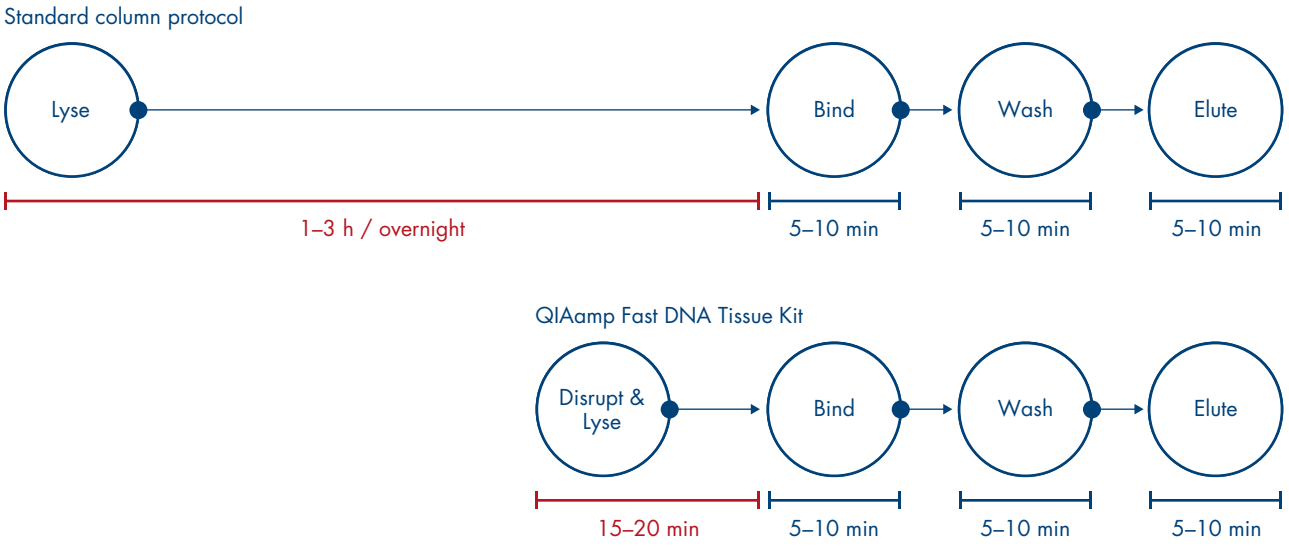

Figure 1. Time is saved with the QIAamp Fast DNA Tissue Kit compared to standard methods.

Extract more DNA and gain more insights

As well as speeding up the total time to extract DNA, the mechanical disruption step and thorough lysis protocol increase DNA yield. Improvements in yield from different tissue types have been evaluated using the QIAxpert® and a fluorometric assay. The results show that the QIAamp Fast DNA Tissue Kit is capable of extracting up to tenfold more DNA compared to standard methods, while also providing one of the fastest protocols (Figure 2).

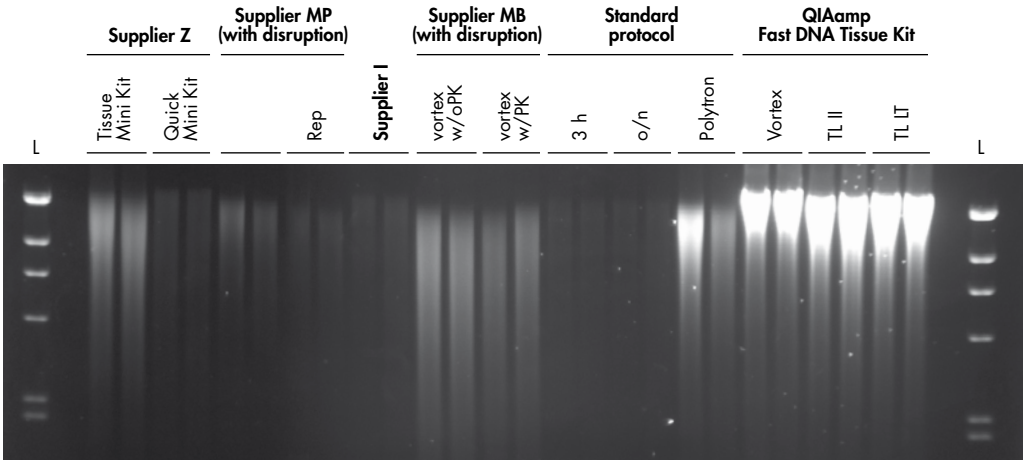

Figure 2. Yield analysis of genomic DNA extracted using different protocols. gDNA was isolated from 10 mg of rat liver tissue using different protocols. For each sample, 8 µl was loaded on a 0.7% TAE gel. The gel was run for 16 h at 25 V. Ladder = Lambda Hind*III*.

Higher DNA integrity for NGS applications

Most NGS applications require high-molecular-weight DNA (>10 kb) to allow for larger spans to be sequenced and assembled with bioinformatic tools. Some disruption methods may fragment the DNA through shearing, which can affect downstream analysis. Compared to other kits that show high fragmentation down to a few kb, the QIAamp Fast DNA Tissue Kit allows you to obtain DNA between 25 and 50 kb (Figure 3) and is therefore very well suited to any PCR or NGS application.

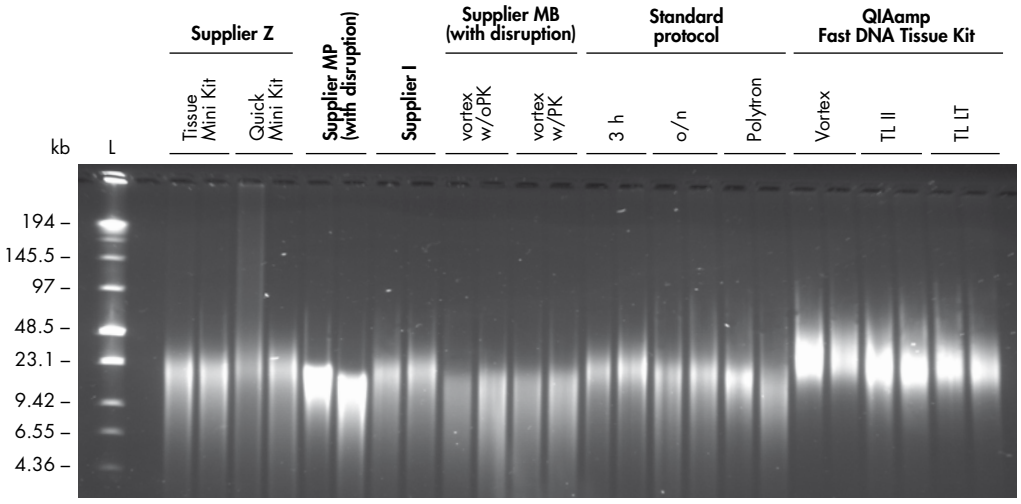

Figure 3. PFGE analysis. Rat kidney tissue was used to isolate genomic DNA using different protocols. A Clamped Homogeneous Electric Field (CHEF) was used to analyze the integrity of gDNA obtained using different protocols. A 1% agarose gel was run with 0.5x TBE with 6V/cm and switch time of 1–12 s. The run time was 16 h at 11°C. Equal amounts of DNA were loaded on the gel.

Efficiently eliminate inhibitors and ensure accuracy in your downstream experiments

A critical step for any PCR-based workflow is the removal of inhibitors. The QIAamp Fast DNA Tissue Kit removes inhibitors as efficiently as the standard QIAamp DNA Mini Kit (Figure 4), ensuring that the DNA you extract is suitable for any PCR, genotyping or sequencing application.

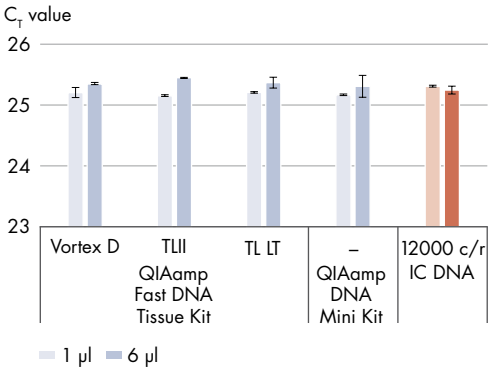

Figure 4. Inhibitors are efficiently removed. Internal controls were amplified in the presence of DNA isolated from 10 mg porcine ear-punches using the QIAamp Fast DNA Tissue Kit or QIAamp DNA Mini Kit. When 1 or 6 µl of eluate were spiked in, amplification of the internal control was unaffected, showing that no inhibitors were present in the eluates.
IC: Internal Control.

Ordering Information

Product	Contents	Cat. no.
QIAamp Fast DNA Tissue Kit	For 50 preps: QIAamp spin Columns, QIAGEN Proteinase K, RNase A, Tissue Disruption Tubes, Buffers	51404
TissueLyser		
TissueLyser II	Bead mill, 100–120/220–240 V, 50/60 Hz; requires the TissueLyser Adapter Set 2 x 24 or TissueLyser Adapter Set 2 x 96	85300
TissueLyser Adapter Set 2 x 24	2 sets of adapter plates and 2 racks for use with 2 ml microcentrifuge tubes on the TissueLyser II	69982
TissueLyser LT	Compact bead mill, 100–240 V AC, 50–60 Hz; requires the TissueLyser LT Adapter, 12-Tube	85600
TissueLyser LT Adapter, 12-Tube	Adapter for disruption of up to 12 samples in 2 ml microcentrifuge tubes on the TissueLyser LT	69980
QIAcube and QIAcube accessories		
QIAcube	Robotic workstation for automated purification of nucleic acids or proteins using QIAGEN spin-column kits, 1-year warranty on parts and labor	9001292*

* QIAcube (110 V) cat. no. 9001292, or QIAcube (239V) cat. no. 9001293.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at **www.qiagen.com** or can be requested from QIAGEN Technical Services or your local distributor.