Product Profile

QIAamp® *cador*® Pathogen Mini Kit

For isolation of viral RNA and DNA and bacterial DNA from a variety of animal sample types

The QIAamp *cador* Pathogen Mini Kit simplifies the isolation of viral RNA and DNA and bacterial DNA from a whole range of animal samples, including undiluted whole blood, serum, swabs and tissue. Using a rapid spin-column procedure, contaminants and inhibitors are removed to yield pathogen nucleic acids that are ready for use in downstream applications such as real-time PCR and RT-PCR. The procedure can be fully automated on the QIAcube®.

Benefits of the QIAamp *cador* Pathogen Mini Kit:

- Same protocol for viral RNA, viral DNA and bacterial DNA
- Suitable for a whole variety of animal samples, including whole blood, serum and tissue
- Isolates viral RNA from undiluted animal whole blood
- Efficient removal of inhibitors and contaminants
- Pure nucleic acids ready for analysis by real-time PCR or RT-PCR

Reliable, optimized protocol

The QIAamp *cador* Pathogen Mini Kit uses spin-column technology to purify viral RNA and DNA and bacterial DNA from animal fluid and tissue samples. The procedure uses optimized buffers and enzymes to lyse samples and stabilize pathogen nucleic acids. The RNA and/or DNA binds to the QIAamp silica membrane, while contaminants pass through the column. Wash buffers are used to completely remove PCR inhibitors, such as divalent cations and proteins. Pure pathogen ▷

Table 1. Key features of the QIAamp *cador* Pathogen Mini Kit

Format and processing	Mini spin columns, manual centrifuge protocol or automated centrifuge protocol using the QIAcube
Target nucleic acids	Viral RNA, viral DNA and bacterial DNA
Sample source types	Animal whole blood, serum, plasma, other fluids, swabs, washes and tissue
Sample size	Up to 200 µl or 25 mg
Preparation time	20–40 minutes
Elution volume	50–150 µl

nucleic acids are then eluted in Buffer AVE. These nucleic acids are ready for use in downstream applications such as real-time PCR and RT-PCR. In contrast to other kits based on silica membranes, up to 200 µl of undiluted animal whole blood samples can be processed with the QIAamp *cador* Pathogen Mini Kit without clogging the filter (Table 1).

Easy process, even for challenging sample types

Most common fluid samples can be directly processed using the main protocol. However, tissue samples and samples containing difficult-to-lyse bacteria require an appropriate pretreatment. The protocols for these pretreatments are all included in the kit handbook. Following pretreatment, samples undergo the same procedure as fluid samples (Figure 1), enabling parallel processing, either manually or in an automated procedure on the QIAcube.

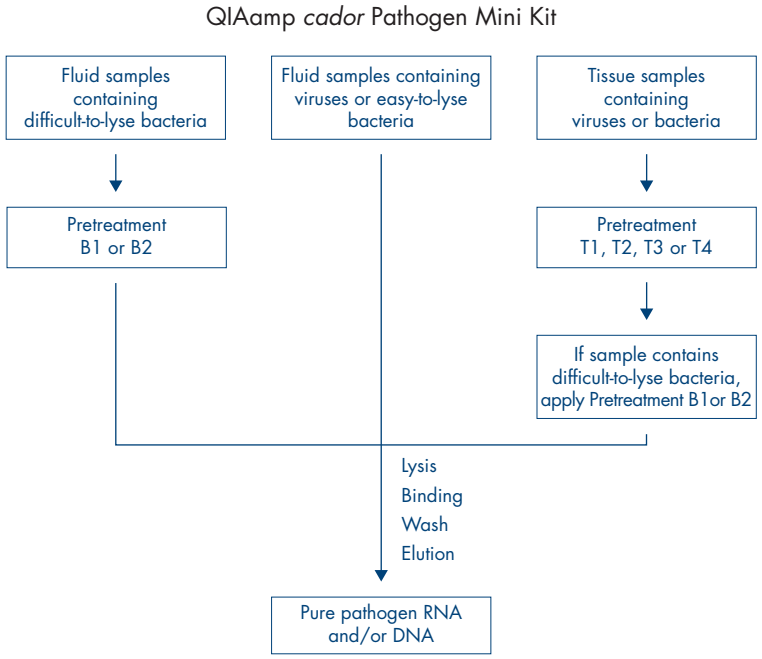

Figure 1. Processing of various sample types and targets. The QIAamp *cador* Pathogen Mini Kit enables parallel processing of all sample types after the application of efficient, dedicated pretreatments for tissue samples and samples containing difficult-to-lyse bacteria.

Comparable manual and automated purification efficiencies

Data indicates that equivalent purification efficiencies can be achieved with both the manual and automated protocols for viral RNA isolation (Figure 2). Bovine serum was spiked with RNA virus particles and the isolation protocol was run manually and on the QIAcube. Both purification protocols gave comparable real-time RT-PCR results, indicating equivalent purification efficiencies for both procedures.

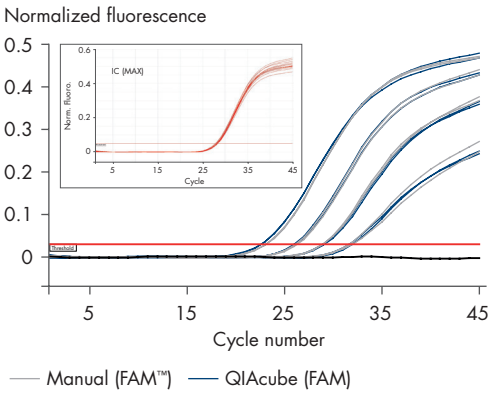

Figure 2. Comparison of manual and automated processing. Bovine serum was spiked with RNA virus particles and the isolation protocol was run manually and on the QIAcube. Real-time RT-PCR was performed. The amplification data for the purification duplicates demonstrates comparable isolation efficiency and linearity. **Gray lines:** Manual isolation. **Blue lines:** Automated isolation. **Red lines:** Internal control.

High inter- and intra-assay reproducibility

The high level of intra- and inter-assay reproducibility demonstrates the robustness of the purification protocol (Figure 3). Three replicates for each whole blood sample spiked with RNA virus particles and frozen at –20°C were processed on three different days with the QIAamp *cador* Pathogen Mini Kit. Equivalent C_T values obtained following amplification with the QuantiFast® Pathogen RT-PCR +IC Kit demonstrate a robust, reproducible protocol.

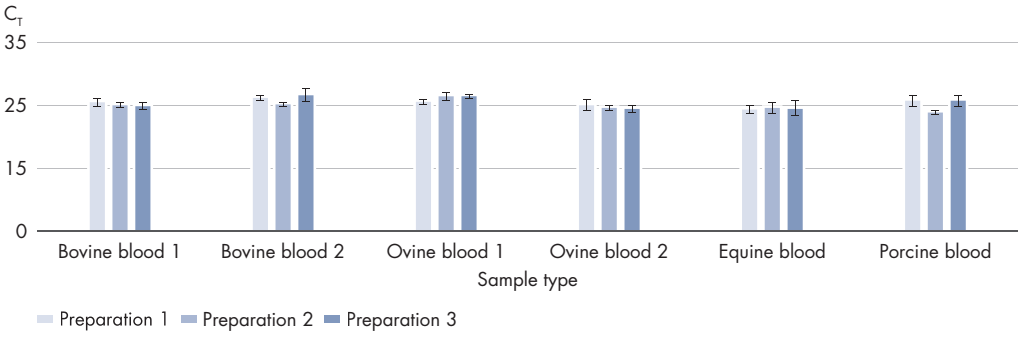

Figure 3. Highly reproducible nucleic acid isolation. Whole blood samples from various animals were spiked with RNA virus particles. The samples were processed in triplicate on three separate days and viral RNA was amplified using target-specific primers and probe. Data from the real-time RT-PCR reaction shows high reproducibility, with error bars representing ±1 S.D.

Efficient isolation of bacterial DNA from animal samples

The QIAamp *cador* Pathogen Mini Kit successfully isolates bacterial DNA from animal samples, as shown in Figure 4. Bacterial DNA from animal samples spiked with Gram-negative or Gram-positive bacteria was purified using the automated isolation protocol (including pretreatment, if necessary), and then amplified. Low C_T values indicate that even nucleic acids from difficult-to-lyse Gram-positive bacteria are efficiently purified.

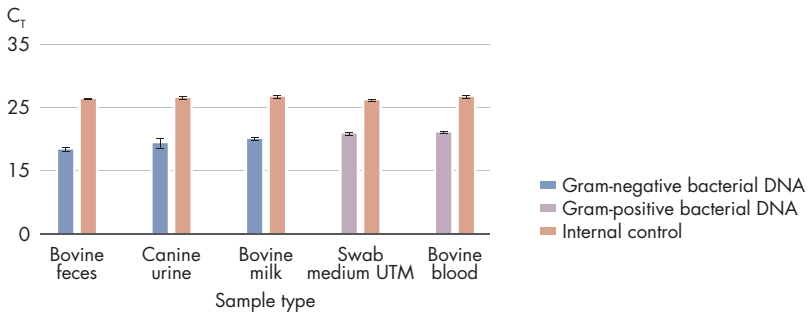

Figure 4. Successful isolation of bacterial DNA. Various animal samples were spiked with Gram-negative or Gram-positive bacteria. The appropriate pretreatments were applied for bovine blood, swab medium (universal transport medium; UTM) and bovine feces. PCR reactions were setup using the QIAgility® following purification of bacterial DNA on the QIAcube. DNA was amplified with target-specific primers and probes. The PCR data shows that isolation of bacterial DNA was successful in all cases. The error bars represent ±1 S.D. from three QIAcube runs.

Wide range of applications

The QIAamp *cador* Pathogen Mini Kit yields pure, high-quality viral RNA, viral DNA and bacterial DNA that is suitable for a wide range of downstream applications, including real-time PCR and RT-PCR for:

- Animal pathogen identification
- Animal pathogen genotyping
- Epidemiology
- Infectious disease research

Ordering Information

Product	Contents	Cat. no.
QIAamp *cador* Pathogen Mini Kit (50)	For 50 RNA/DNA preps: 50 QIAamp Mini Spin Columns, Carrier RNA, Proteinase K, Collection Tubes (2 ml), RNase-free Buffers	54104
QIAamp *cador* Pathogen Mini Kit (250)	For 250 RNA/DNA preps: 250 QIAamp Mini Spin Columns, Carrier RNA, Proteinase K, Collection Tubes (2 ml), RNase-free Buffers	54106

The QIAamp *cador* Pathogen Mini Kit is for laboratory use. It is not for use in veterinary diagnostic procedures. No claim or representation is intended to provide information for the diagnosis, prevention, or treatment of a veterinary disease.

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.

Learn more at **www.qiagen.com/cador-prep**.