

NUCLEIC ACID PURIFICATION

Quantum Prep AquaPure™ Genomic DNA Isolation Kits

- **SAFE, NONTOXIC AQUEOUS REAGENT METHOD**
- **SCALABLE PROTOCOL FOR MAXIMUM FLEXIBILITY**
- **YIELDS APPROXIMATELY 100 kb DNA, IDEAL FOR PCR,* SOUTHERN BLOTS AND RFLP**
- **FAST-PURIFIED DNA IN LESS THAN 60 MINUTES**

Protein-Free DNA Without Organic Solvents

The isolation of double-stranded, high molecular weight genomic DNA from whole cells and tissues is critical for successful DNA amplification, sequencing, Southern blotting, mapping, genotyping and other analytical techniques. While traditional methods of isolating genomic DNA (Proteinase K digestion with phenol/chloroform extractions) are very effective, they require handling organic solvents such as phenol and chloroform. Quantum Prep AquaPure genomic DNA isolation kits are specially formulated to isolate genomic DNA from a wide range of tissue and cell sources in only 60 minutes, using a safe and effective aqueous reagent-based protocol.

Versatile, Scalable Technique

Quantum Prep AquaPure genomic DNA isolation kits prepare genomic DNA from a variety of sources, including cultured mammalian and bacterial cells, animal and plant tissue, and whole blood. Because no spin columns or membranes are used, the Quantum Prep AquaPure method is completely scalable, to allow the processing of a wide range of sample sizes.

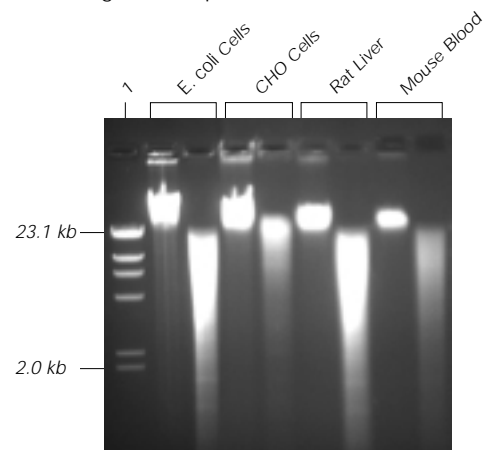


Fig. 1. Agarose gel analysis of genomic DNA prepared from the indicated sources with the AquaPure genomic DNA tissue kit and blood kit. Samples of undigested DNA (left) were digested with Eco RI (right). Lane 1: Bio-Rad high range DNA size standard.



AquaPure DNA Kit	DNA Source
Genomic DNA isolation kit	Cultured and fixed cells, gram-negative bacteria
Genomic DNA tissue kit	Animal tissue, mouse tail tissue, plant tissue, cultured and fixed cells, gram-negative bacteria
Genomic DNA blood kit	Human and mammalian whole blood and bone marrow cells, cultured and fixed cells, nucleated red blood cells

Novel Reagent Improves PCR Results

Quantum Prep AquaPure genomic DNA isolation kits use a novel salt precipitation reagent that effectively removes cytoplasmic and nuclear protein in a single step, while avoiding the use of organic solvents such as phenol and chloroform. The result is a DNA prep free from material that may inhibit PCR and other enzymatic reactions. In addition to the protein precipitation buffer, a DNA stabilizer serves to limit the activity of endogenous and exogenous DNases during the extraction process.

Rapid, Convenient Procedure

Quantum Prep AquaPure genomic DNA kits consist of ready-to-use reagents that do not require special handling, storage or toxic waste disposal. And with no time-consuming column chromatography or ultracentrifugation steps, mixing or dilution of reagents, DNA can be isolated in as little as 60 minutes.

BIO-RAD

Consistently High Quality DNA

The gentle extraction method of the AquaPure kit's reagent-based protocol minimizes DNA shearing encountered in solid-support, spin-column-based procedures, dramatically improving the recovery of long DNA fragments. The average length of purified DNA is at least 100 kb, with $A_{260/280}$ ratios of 1.5–1.9. Isolated DNA is suitable for use in PCR, Southern hybridizations, restriction digests, RFLP and other applications. To ensure reliable results, all components of AquaPure genomic DNA isolation kits are manufactured following current Good Manufacturing Practices (GMP). This ensures not only the absence of DNase, contaminating DNA or other microbial contaminants, but also verifies that each kit yields DNA that meets restriction enzyme digestibility and PCR amplification specifications.

Specifications

Sample size	Scalable; 100 cells minimum
Total prep time**	<60 minutes
Yield (varies with tissue and cell type)	0.5–10 µg DNA/mg tissue 15–45 µg DNA /ml whole blood 5 µg DNA/10 ⁶ cultured cells 10–35 µg DNA/0.5 ml bacterial culture (~5 x 10 ⁸ gram-negative bacteria)
Storage and stability	12 months at room temperature

Ordering Information

Catalog #	Description
732-6340	Quantum Prep AquaPure Genomic DNA Isolation Kit, for cultured cells and gram-negative bacteria, processes up to 100 cultured cell preps (1–2 x 10 ⁶ cells/prep), or 100 x 0.5 ml bacterial cell cultures per kit
732-6343	Quantum Prep AquaPure Genomic DNA Tissue Kit, for animal and plant tissues, cultured cells, and gram-negative bacteria, processes up to 100 x 0.5–10 mg animal and plant tissue preps, 100 cultured cell preps (1–2 x 10 ⁶ cells/prep), or 100 x 0.5 ml bacterial cell cultures per kit
732-6345	Quantum Prep AquaPure Genomic DNA Blood Kit, for human and mammalian whole blood and bone marrow, processes up to 100 x 0.3 ml whole blood samples per kit

* The Polymerase Chain Reaction (PCR) process is covered by patents owned by Hoffmann-LaRoche. Use of the PCR process requires a license.

** Additional time may be required for DNA hydration with some tissues.

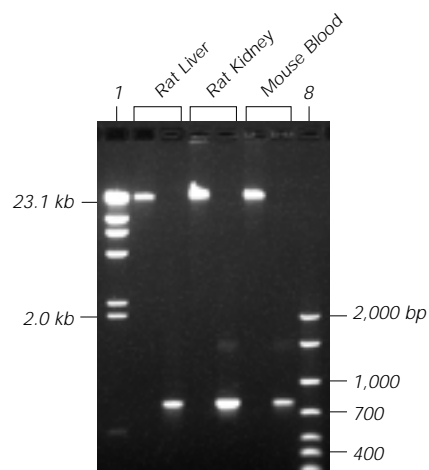
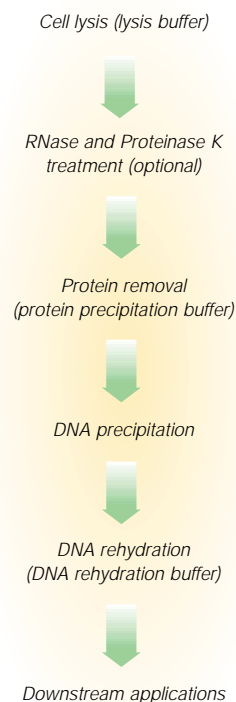


Fig. 2. PCR analysis of genomic DNA purified from indicated sources. Purified DNA (left) was amplified with a primer specific for rat *c-fos* gene (Ambion). Results indicate successful removal of contaminants that can interfere with the PCR amplification process. Lane 1: Bio-Rad high range DNA size standard. Lane 8: Bio-Rad AmpliSize® molecular ruler.



AquaPure genomic DNA isolation kits are supplied with simple, easy-to-use protocols for reliable, consistent results.

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