**Nucleic Acid and Protein Sample Preparation:**

Take the DNA from a plant, store it on an FTA® Card, track plant mutations and create a gene library. Just two applications of many.
Nucleic Acid and Protein Sample Preparation

Whatman has been manufacturing quality paper products since 1740 and is recognized as the world leader in filter separation technologies and products.

With all this knowledge and remarkable testimonies to quality, Whatman has taken its products to a new level, in the genomics/proteomics industry. Our area of expertise in this evolving industry lies in sample preparation, where our FTA Cards - an innovative patented technology for collecting, transporting, purifying and archiving DNA and RNA all on a single card stored at room temperature - have become market leaders.

The nucleic acid sample preparation products incorporate unique Whatman technologies, which offer several outstanding advantages to molecular biologists. These include the encapsulation of solid media into devices, DNA separation products, services and products designed for the collection, transportation, purification and analysis of nucleic acids. All of these new Whatman products create breakthrough applications that yield accurate results much faster than previously possible. Offering an extensive, leading-edge product range and an efficient contract service means that all your DNA processing requirements are met by one established provider.

Whatman offers an extensive range of products to facilitate genomic studies of humans, animals, plants and microorganisms. Collection, storage and analysis of DNA and RNA all benefit from the use of FTA and other Whatman tools.

Collection, Storage and Purification

FTA Technology

Collect, Transport, Archive and Isolate Nucleic Acids - All at Room Temperature

FTA Cards utilize patented Whatman FTA Technology that simplifies the handling and processing of nucleic acids.

FTA Cards contain chemicals that lyse cells, denature proteins and protect nucleic acids from nucleases, oxidation and UV damage. FTA Cards rapidly inactivate organisms, including blood-borne pathogens, and prevent the growth of bacteria and other microorganisms. Try FTA, and you'll soon find it's an indispensable part of your DNA toolbox. US Patent Nos. 5496562, 5756126, 5807527, 5972386, 5985327 and other patents pending.

Nucleic Acid and Protein Sample Preparation

Features and Benefits

- Capture nucleic acid in one easy step
- Captured nucleic acid is ready for downstream applications in less than 30 minutes
- Nucleic acids collected on FTA Cards are stable for years at room temperature
- FTA Cards are stored at room temperature before and after sample application, reducing the need for laboratory freezers
- Suitable for virtually any cell type
- Indicating FTA Cards change color upon sample application to facilitate handling of colorless samples
- FTA Cards are available in a variety of configurations to meet application requirements
- Custom configurations are available on request

Applications

- Forensics
- Transgenics
- Transfusion Medicine
- Plasmid Screening
- Food and Agriculture Testing
- Drug Discovery
- Genomics
- STR Analysis
- Animal Identification
- Diagnostics
- Pharmacogenomics
- Molecular Biology

Capture Nucleic Acids in One Easy Step

Simply apply your sample to the FTA Card. Cell membranes and organelles are lysed and the released nucleic acids remain immobilized and are stabilized for transport, immediate processing or long-term room temperature storage.

Since captured nucleic acids are stabilized, FTA Cards facilitate sample collection in remote locations and simplify sample transport. For example, you can collect samples deep in a rain forest without worrying about immediate refrigeration. Ship your samples back to the lab without expensive special handling or dry ice, and process at your convenience.

Indicating FTA Cards are recommended for colorless samples. These FTA Cards change from pink to white when sample is applied, verifying the location of the sample.
FTA Cards Used With Virtually Any Sample Type

- Blood
- Cultured Cells
- Bacteria
- Plasmids
- Microorganisms
- Solid Tissue
- Viral Particles
- M13 Plaques...and more

Captured Nucleic Acid is Ready for Downstream Applications In Less than 30 Minutes
Captured nucleic acids are ready for purification when you are. Just take a punch from the FTA Card, wash with FTA Purification Reagent and rinse with TE-1 buffer. DNA on the washed punch is ready to use in applications such as PCR, SNP analysis and RT-PCR. Since PCR products remain in solution, the punch can be used for multiple amplifications.

Store Nucleic Acids at Room Temperature for Years
Genomic DNA stored on FTA Cards at room temperature for over 14 years (and counting) has been successfully amplified by PCR.

Sample integrity is optimized when FTA Cards are stored in a Multi-Barrier Pouch with a Desiccant Packet.

FTA Cards offer a compact room-temperature storage system that reduces the need for precious freezer space.

FTA Classic Card
Four sample areas for application of up to 500 µL whole blood or 100 µL plant homogenate per card. Convenient for multiple applications of the same specimen or collection of multiple animal or plant samples on one card. Different samples can be processed independently.

Indicating FTA Classic Card
Same as FTA Classic Card with a color indicator that changes from pink to white when sample is applied. Recommended for use with colorless samples such as buccal or cultured cells.

FTA Mini Card
Two sample areas for application of up to 250 µL whole blood or 50 µL plant homogenate per card. Convenient for protocols that require different locations for testing and archiving samples. Different samples can be processed independently.

Indicating FTA Mini Card
Same as FTA Mini Card with a color indicator that changes from pink to white when sample is applied. Recommended for use with clear samples such as buccal or cultured cells.

FTA Micro Card
One sample area for application of up to 125 µL whole blood or 25 µL plant homogenate per card. Recommended when only one sample is needed.

Indicating FTA Micro Card
Same as FTA Micro Card with a color indicator that changes from pink to white when sample is applied. Recommended for use with clear samples such as buccal or cultured cells.

FTA Gene Card
An FTA Card enclosed in a rigid card frame. Three sample areas for application of up to 225 µL whole blood or 30 µL plant homogenate per card. Can be utilized in many automatic dispensing/pipetting systems when used with the FTA Gene Card Tray (WB100030).

PlantSaver® FTA Card
Plant friendly FTA Card, in a Classic Card format. Features a laminated flap that allows you to vigorously pound the plant sample into the FTA matrix without damaging the FTA Card.

FTA Plant Kit
Includes: 20 FTA PlantSaver cards, 2.0 mm UniCore Punch with cutting mat, 2 x 25 mL FTA purification reagent, 1 pair of nitrile gloves and 1 cutting mat and round bottom test tube for sample application, instructions.

FTA Starter Pack
Includes: 1 FTA Classic Card, 1 FTA Mini Card, 1 FTA Micro Card, 1 Indicating FTA Mini Card, 1 FTA Indicating Micro Card, 2 foam-tipped applicator swabs, 1 multi-barrier pouch with desiccant, 25 mL FTA purification reagent, 2 Harris Uni-Core Punches with cutting mat, instructions.
### Features and Benefits

- **Capture nucleic acid in one easy step**
- **Captured nucleic acid is easily released for multiple downstream applications in less than 30 minutes**
- **Sample processing requires a simple water elution procedure to isolate DNA eliminating the cost of using a purification kit**
- **DNA collected on FTA Elite Cards are stable for years at room temperature**
- **FTA Elite Cards are stored at room temperature before and after sample application, reducing the need for laboratory freezers**
- **FTA Elite rapidly inactivates organisms including blood borne pathogens and eliminates the risk of contamination for the individuals handling the sample**
- **FTA Elite Cards are available in a variety of configurations to meet application requirements**
- **Custom configurations are available on request**

### Collect and Isolate Samples Quickly and Easily

2. Punch out a 3 mm sample with a sterile punch and place it in a sterile microcentrifuge tube.
3. Rinse punch in 500 µL of dH2O by vortexing 3x for 5 seconds.
4. Using a sterile pipette, remove water; centrifuge 5 seconds; shake pipette excess.
5. Add 5-10 µL template to PCR reaction mixture.

---

### Ordering Information - FTA Nucleic Acid Collection, Storage and Purification

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Cards/Pack</th>
<th>Sample Area/Card</th>
<th>Maximum Volume/Card (µL)</th>
<th>Maximum Total Volume/Card (µL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB120067</td>
<td>FTA Kit</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>WB120068</td>
<td>FTA Plant Kit</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>WB120061</td>
<td>FTA Starter Pack</td>
<td>N/A</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>WB120050</td>
<td>FTA Classic Card</td>
<td>25</td>
<td>125</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>WB120051</td>
<td>FTA Classic Card</td>
<td>100</td>
<td>125</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>WB120056</td>
<td>Indicating FTA Classic Card</td>
<td>25</td>
<td>125</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>WB120066</td>
<td>Indicating FTA Classic Card</td>
<td>100</td>
<td>125</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>WB120055</td>
<td>FTA Mini Card</td>
<td>25</td>
<td>125</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>WB120055</td>
<td>FTA Mini Card</td>
<td>100</td>
<td>125</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>WB120066</td>
<td>Indicating FTA Mini Card</td>
<td>25</td>
<td>125</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>WB120066</td>
<td>Indicating FTA Mini Card</td>
<td>100</td>
<td>125</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>WB120100</td>
<td>FTA Micro Card</td>
<td>25</td>
<td>125</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>WB120110</td>
<td>FTA Micro Card</td>
<td>100</td>
<td>125</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>WB120088</td>
<td>FTA Gene Card</td>
<td>25</td>
<td>75</td>
<td>225</td>
<td>225</td>
</tr>
<tr>
<td>WB120088</td>
<td>FTA Gene Card</td>
<td>100</td>
<td>75</td>
<td>225</td>
<td>225</td>
</tr>
<tr>
<td>WB120265</td>
<td>PlantSaver FTA Card</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>WB120065</td>
<td>PlantSaver FTA Card</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>WB120217</td>
<td>FTA Card/Pouch/Desiccant</td>
<td>1000</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

1 Includes: 25 FTA Micro Cards, 2 x 25 mL FTA purification reagent, 2 x Uni-Core Punches with cutting mat, instructions
2 Includes: 20 FTA PlantSaver cards, 2.0 mm Uni-Core Punch and cutting mat, 2 x 25 mL FTA purification reagent, 1 pair of nitrile gloves with 1 cutting mat and round bottom test tube for sample application, instructions.
Nucleic Acid and Protein Sample Preparation

Use FTA Elute for a wide range of applications:

- Multiple PCR
- Sequencing
- SNP Analysis
- STR Analysis
- HLA Typing
- Whole Genome Amplification
- Quantitative PCR

FTA Elute Classic Card
Four sample areas for application of sample per card. Convenient for multiple applications of the same specimen or collection of multiple samples on one card. Different samples can be processed independently.

FTA Elute Micro Card
One sample area for application of sample per card. Recommended when only one sample is needed.

Ordering Information - FTA Elute Technology

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Cards/Pack</th>
<th>Sample Areas/Card</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB120403</td>
<td>FTA Elute Classic Card</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>WB120405</td>
<td>FTA Elute Classic Card</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>WB120401</td>
<td>FTA Elute Micro Card</td>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td>WB120410</td>
<td>FTA Elute Micro Card</td>
<td>100</td>
<td>1</td>
</tr>
</tbody>
</table>

FTA® Reagent and Accessories

For Collection, Storage, Processing and Shipping FTA Cards

FTA Purification Reagent
- For purification of nucleic acids stored on FTA Cards
- Ensures superior quality DNA for PCR or SNP analysis
- Removes heme, PCR inhibitors and other potential contaminants
- Non-toxic, hypoallergenic aqueous solution

FTA Gene Card Tray
- Holds 2 FTA Gene Cards for use in automatic dispensing/pipetting systems
- Tray footprint conforms to SBS Standards

Harris Micro Punches (1.2 mm, 2.0 mm or 3.0 mm) and Cutting Mat
- Recommended for the precise punching of FTA Cards. No sample carryover when recommended procedures are used. Tips provide up to 2000 punches. Polished steel tip is case hardened and can be sterilized. The cutting mat ensures clean sample cuts and extends the life of the cutting tip.
- 1.2 mm punch recommended for use with FTA Cards containing whole blood and samples with high DNA content
- 2.0 mm punch recommended for use with FTA Cards containing buccal cells, plasmids and other samples with lower DNA content
- 3.0 mm punch recommended for use with FTA Elute Cards

Harris Uni-Core Punches
- Disposable punch recommended for punching of FTA Cards. No sample carryover when recommended procedures are used.
- 1.2 mm punch recommended for use with FTA Cards containing whole blood and samples with high DNA content
- 2.0 mm punch recommended for use with FTA Cards containing buccal cells, plasmids and other samples with lower DNA content
- 3.0 mm punch recommended for use with FTA Elute Cards

Sterile Foam Tipped Applicator
- For the collection of saliva and buccal cells
- Non-abrasive foam head is same size as sample area on indicating FTA Cards to facilitate sample application
Clone Archiving

Whatman offers a unique patented technology to collect, store, back-up and process clone samples. This revolutionary FTA technology is available in two formats: 96 Well card and 384 Well plate.

CloneSaver® Card

FTA Technology in 96 Well Format for High-Throughput Applications

Designed for the collection, long-term storage and purification of plasmid and BAC DNA from bacterial clones in a 96 Well format.

Clone Archiving

Whatman offers a unique patented technology to collect, store, back-up and process clone samples. This revolutionary FTA technology is available in two formats: 96 Well card and 384 Well plate.

CloneSaver® Card

FTA Technology in 96 Well Format for High-Throughput Applications

Designed for the collection, long-term storage and purification of plasmid and BAC DNA from bacterial clones in a 96 Well format.

Clone Archiving

Whatman offers a unique patented technology to collect, store, back-up and process clone samples. This revolutionary FTA technology is available in two formats: 96 Well card and 384 Well plate.

CloneSaver® Card

FTA Technology in 96 Well Format for High-Throughput Applications

Designed for the collection, long-term storage and purification of plasmid and BAC DNA from bacterial clones in a 96 Well format.
**Nucleic Acid and Protein Sample Preparation**

**Prepare BAC and Plasmid DNA with Amazing Ease**
- Apply 5 µL bacterial culture, resuspended colony or glycerol stock. Cells are lysed and plasmid or BAC DNA is stabilized for long-term storage or immediate processing.
- Bacteriophages are inactivated
- DNA is easily accessible for downstream applications
- Store up to 96 samples on each card

**Store Sample DNA for Years at Room Temperature**
Plasmid DNA stored on CloneSaver Cards is stable at room temperature for at least four years...and counting.

DNA is Easily Accessible for Downstream Applications

**Transformation**
Plasmid DNA can be eluted or used directly on a punch to transform bacteria either by electroporation or heat-shock methods.

**PCR**
Immobile plasmid DNA on a CloneSaver Card punch can be used directly in a PCR. The PCR products remain in solution, do not bind to the punch and are easily recoverable. Plasmid DNA can also be eluted for PCR or other studies.

**Sequencing**
Plasmid DNA eluted from a CloneSaver punch can be amplified by rolling circle amplification, such as GE Healthcare’s (formerly Amersham Biosciences) Templifi™ and then sequenced without the need for culture regrowth and plasmid purification.

**CloneSaver Resealable Multi-Barrier Pouches**
Used for transporting or storing the CloneSaver Card. The pouch is constructed with seven laminated layers that protect the card from exposure to gas or liquid contamination. There is a zip-lock resealable closure for easy access to the CloneSaver Card. The tamper-evident seal maintains sample security and the outer paper surface can be used for labeling or writing.

**SPOT CloneSaver Holder**
SPOT CloneSaver Holder is a rigid frame that allows automated spotting to standard CloneSaver Cards. It keeps the card flat for uniform and precise spotting of biological samples. The 96 Well card is easily inserted into the SBS-compatible frame, which can then be placed onto a liquid-handling deck just like a multiwell plate.

The SPOT CloneSaver Holder is compatible with standard liquid handlers manufactured by companies such as Beckman Coulter and Tecan Instruments.

**CloneSaver Starter Kit**
Includes: 2 CloneSaver Cards, 2 Uni-Core Punches (2 mm) with cutting mat and instructions.

**EasyClone™ 384 Plate**
The Whatman EasyClone 384 Plate replaces traditional freezer storage methods and offers a first of its kind, single device for entire sample archiving and purification workflow, enabling faster DNA mining and discovery.

The EasyClone 384 Plate can be used by biotechnology, pharmaceutical, government and academic laboratories for archiving, shipping and purifying clones - all at room temperature.
GenSpin™ Genomic DNA Purification Kit

**Features and Benefits**

- Simple, single tube protocol. Purify single stranded DNA from whole blood and cultured cells in less than 25 minutes.
- FTA technology lyses cells, denatures proteins and inactivates viral contaminants. Allows room temperature storage of DNA and safe sample transport and handling prior to purification.
- High quality DNA. Enables full length PCR amplification.
- Highly efficient method. Enables purification of DNA for up to 80 amplification reactions from a 50 µL blood sample.
- No precipitation steps. DNA is ready for immediate analysis.

**Ordering Information - GenSpin Genomic DNA Purification Kits**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB120005</td>
<td>GenSpin Genomic DNA Purification Kit</td>
<td>50 purifications</td>
</tr>
<tr>
<td>WB120111</td>
<td>GenSpin Sample Kit</td>
<td>5 purifications</td>
</tr>
</tbody>
</table>

---

**DNA/Protein Purification**

Whatman offers a line of DNA purification kits to simplify your testing processes.

**GenSpin™ Genomic DNA Purification Kit**

The GenSpin Purification Kit is designed to purify high quality, PCR-ready, single-stranded DNA in solution from whole blood and cultured cells in as little as 25 minutes.

This simple protocol uses a single micro centrifuge tube and small sample volume (5-50 µL) to produce high quality DNA for amplification by PCR. DNA for up to 80 amplification reactions can be obtained from a 50 µL fresh or anticoagulant-treated blood sample.

GenSpin incorporates patented FTA technology, which lyses cell and nuclear membranes on contact. The DNA is reversibly entrapped within this type of FTA filter matrix and can be stored for weeks at room temperature prior to purification. Cellular debris and proteins are removed by washing with GenSpin buffer and TE-1 buffer using a centrifuge. The purified DNA is released from this specialized filter matrix by heat elution and is ready for immediate PCR amplification.

**Ordering Information - EasyClone 384 Plate**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Quantity/Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB120069</td>
<td>EasyClone 384 plate</td>
<td>50</td>
</tr>
</tbody>
</table>

---

**Nucleic Acid and Protein Sample Preparation**

Relying on proven Whatman FTA technology, which allows for the collection, storage and purification of DNA from a variety of biological samples, EasyClone consists of a 384 Well storage and extraction plate with a piercable foil bottom and FTA disks pre-cut into each well. The design and format of the EasyClone 384 plate enables the genomics market to use FTA as a replacement for both purification kits and freezer storage.
Features and Benefits

- Simple, single tube protocol. Eliminates need for organic solvents, liquid nitrogen and time-consuming precipitation steps.
- Fast purification of DNA. Purify DNA in less than 30 minutes for quick sample screening. Up to 50 amplifications from only 10 mg of plant material.
- PCR-ready double-stranded DNA. Reliable amplification of DNA for a wide range of applications including cultivar screening and identification of genetically modified plants.
- FTA technology protects DNA from degradation. Enables room temperature storage for weeks.

Table 1. Comparison of GenSpin Plant and a Common Manual DNA Isolation Method

<table>
<thead>
<tr>
<th>Extraction Time</th>
<th>GenSpin Plant 25 minutes</th>
<th>Manual Method* 90 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homogenization</td>
<td>Room Temperature</td>
<td>Liquid Nitrogen</td>
</tr>
<tr>
<td>Precipitation/Resuspension</td>
<td>Not Required</td>
<td>Required</td>
</tr>
<tr>
<td>All Reagents Aqueous</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Archiving Capability</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>PCR of Low-Copy Loci</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Double-Stranded DNA</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>gDNA Isolation from Other Cell Types (bacteria, blood)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Pathogen Inactivation</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

* Manual method (Dellaporta et. al. 1983) does not include time required for full resuspension after DNA precipitation.


Table 2. Plant Species - Typical DNA Yields from 10 mg of Young Leaf Tissue

<table>
<thead>
<tr>
<th>Plant Species</th>
<th>Double-Stranded DNA Yield (µg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa</td>
<td>800</td>
</tr>
<tr>
<td>Arabidopsis thaliana</td>
<td>110</td>
</tr>
<tr>
<td>Barley*</td>
<td>670</td>
</tr>
<tr>
<td>Brassica sp.</td>
<td>800</td>
</tr>
<tr>
<td>Cen A</td>
<td>120</td>
</tr>
<tr>
<td>Cotton</td>
<td>450</td>
</tr>
<tr>
<td>Potato</td>
<td>2200</td>
</tr>
<tr>
<td>Rice</td>
<td>120</td>
</tr>
<tr>
<td>Ryegrass</td>
<td>340</td>
</tr>
<tr>
<td>Soybean*</td>
<td>500</td>
</tr>
<tr>
<td>Spinach</td>
<td>340</td>
</tr>
<tr>
<td>Tobacco</td>
<td>1100</td>
</tr>
<tr>
<td>Tomato</td>
<td>1800</td>
</tr>
<tr>
<td>Wheat*</td>
<td>710 (contd)</td>
</tr>
</tbody>
</table>
**Features and Benefits**

- Optimized buffer system provides high DNA yields
- Versatile kit allows isolation of DNA from a variety of sources
- Samples are eluted in TE-1 buffer or water, ready for further assays without ethanol precipitation
- Uniform glass rods minimize shearing of DNA

### Elutip-d® Purification Minicolumns

**High Recovery of DNA**

The Elutip-d minicolumns are designed for purification of DNA with high recovery rates. They provide a simple and convenient method for purification of DNA in the 15-base to 50 Kb range.

The Elutip-d columns are ideal for removal of unincorporated nucleotides and other contaminants from radiolabeling reactions to reduce background levels and increase sample activity. They also provide an excellent method for isolation of nucleic acids from low-melt agarose gels.

### GenSpin Plant DNA Purification Kits

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB1200046</td>
<td>GenSpin Plant DNA Purification Kit</td>
<td>50 Purifications</td>
</tr>
<tr>
<td>SWB1200046</td>
<td>GenSpin Plant DNA Purification Sample Kit</td>
<td>5 Purifications</td>
</tr>
</tbody>
</table>

**GenSpin Plant DNA Purification Kit Contents**

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>GenSpin Purification Tube with Filter Basket</td>
</tr>
<tr>
<td>50</td>
<td>GenSpin Collection Tube</td>
</tr>
<tr>
<td>2 bottles</td>
<td>Homogenization Buffer 25 mL</td>
</tr>
<tr>
<td>1 bottle</td>
<td>Wash Reagent 60 mL</td>
</tr>
<tr>
<td>1 bottle</td>
<td>Rinse Reagent 60 mL</td>
</tr>
<tr>
<td>1</td>
<td>Instruction Booklet</td>
</tr>
</tbody>
</table>

### Elu-Quik® DNA Purification Kit

The Elu-Quik kit provides a convenient and versatile method for purifying DNA from 500-base to 200 Kb. The kit is recommended for the isolation of genomic DNA from whole cells and tissues, as well as purification of single- and double-stranded fragments from gel slices or plasmid minipreps.

The Elu-Quik Kit relies on the affinity of DNA for glass particles in the presence of sodium perchlorate binding buffer. After several washing steps to remove contaminants and cellular debris, the DNA is eluted from the glass in TE-1 buffer or water. The highly pure DNA is ready for further experiments without the need for ethanol precipitation. The optimized buffers in the kit provide high yields, and unique rod-shaped glass particles reduce shearing of genomic DNA. Yields typically are greater than 650 µg from 10^8 cells.

* Extraction of these plant species requires the addition of DTT to Homogenization Buffer DNA yields can vary depending on plant species, tissue age and growing conditions Double-stranded DNA was quantified using PicoGreen® Reagent

### Ordering Information - GenSpin Plant DNA Purification Kits

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB1200046</td>
<td>GenSpin Plant DNA Purification Kit</td>
<td>50 Purifications</td>
</tr>
<tr>
<td>SWB1200046</td>
<td>GenSpin Plant DNA Purification Sample Kit</td>
<td>5 Purifications</td>
</tr>
</tbody>
</table>

**Ordering Information - Elu-Quik DNA Purification Kit**

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elu-Quik DNA Purification Kit® includes:</td>
<td>10 462 620</td>
</tr>
<tr>
<td>5 mL Glass Concentrate in Binding Buffer</td>
<td></td>
</tr>
<tr>
<td>125 mL Sodium Perchlorate Binding Buffer</td>
<td></td>
</tr>
<tr>
<td>20 mL Lysis Buffer</td>
<td></td>
</tr>
<tr>
<td>125 mL Wash Buffer Concentrate (2x)</td>
<td></td>
</tr>
<tr>
<td>125 mL Salt Reduction Buffer</td>
<td></td>
</tr>
</tbody>
</table>

* For 250 isolations

* DNA yields can vary depending on plant species, tissue age and growing conditions
* Double-stranded DNA was quantified using PicoGreen® Reagent
Assembly of the Elutrap System is very easy. Gel slices are placed in the middle of the Elutrap device, which is then placed into a horizontal electrophoresis chamber. Molecules migrate from the gel slice into a trap area formed by BT1 and BT2 membranes. The membrane placement is adjustable, allowing final elution trap volumes to be optimized for the particular assay. The Elutrap System can also be used for concentration of dilute solutions.

Features and Benefits
- Versatile system can be used for nucleic acids and proteins
- Purifies nucleic acids 14-bases to 150 Kb; proteins larger than 3-5 kD
- No salt cushions or special buffers required for elution
- Adjustable trap allows optimization of final sample volume
- Electrophoresis chamber holds up to four Elutraps simultaneously

**Ordering Information - Elutrap Electroelution System**

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elutrap Starter Kit</td>
<td>10 447 724</td>
</tr>
<tr>
<td>1 Elutrap Device, 1 Electrophoresis Chamber</td>
<td>10 447 725</td>
</tr>
<tr>
<td>4 Elutrap Devices, 1 Electrophoresis Chamber, 50 BT1 Membranes, 50 BT2 Membranes</td>
<td>10 447 705</td>
</tr>
<tr>
<td>BT1 - 100 µk</td>
<td>10 404 080</td>
</tr>
<tr>
<td>BT2 - 100 µk</td>
<td>10 404 092</td>
</tr>
</tbody>
</table>

Nucleic Acid and Protein Sample Preparation

The Elutrap System is designed to isolate nucleic acids and proteins from agarose or polyacrylamide gel slices by electroelution. Samples are purified with excellent recovery into volumes as low as 200 µL, without requiring sample pretreatment or special buffers.

Features and Benefits
- High recovery of single- and double-stranded DNA
- Eliminates contaminants that can cause high background or interfere with sample activity
- Sample is eluted in a small volume
- 100 µg capacity

**Ordering Information - Elutrap Purification Minicolumns**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity/Pack</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elutrap-d Starter Kit</td>
<td>15 Columns</td>
<td>10 462 615</td>
</tr>
<tr>
<td>Elutrap-d Columns</td>
<td>50</td>
<td>10 462 617</td>
</tr>
<tr>
<td>Elutrap-d Columns</td>
<td>250</td>
<td>10 462 618</td>
</tr>
<tr>
<td>Elutrap-d Prefilters</td>
<td>50</td>
<td>10 484 224</td>
</tr>
</tbody>
</table>

Elutrap® Electroelution System

**Ordering Information - Elutrap Electroelution System**

- Elutrap Starter Kit includes:
  - 1 Elutrap Device, 1 Electrophoresis Chamber
  - 50 BT1 Membranes, 50 BT2 Membranes
- 1 Elutrap Device, 1 Electrophoresis Chamber

- Elutrap System Starter Kit includes:
  - 1 Elutrap Device, 1 Electrophoresis Chamber
  - 50 BT1 Membranes, 50 BT2 Membranes

- Elutrap System Kit - 4-pack includes:
  - 4 Elutrap Devices, 1 Electrophoresis Chamber
  - 50 BT1 Membranes, 50 BT2 Membranes

- Replacement Membranes
  - BT1 - 100 µk: 10 404 080
  - BT2 - 100 µk: 10 404 092

Elution of Nucleic Acids and Proteins from Gel Slices

The Elutrap System can be used with most horizontal gel electrophoresis chambers. The Elutrap Electrophoresis Chamber allows for the most efficient flow of current through the device and can be used for up to four samples simultaneously.

The Elutrap-d column matrix binds nucleic acids in high quantities upon sample application under low salt conditions. Contaminants are washed through the column and the purified DNA is then eluted with high salt. The eluted sample is ready for use in a variety of assays that require high purity of the nucleic acid.

Elutrap-d columns are used with standard syringes. Optional prefilters contain non-binding cellulose acetate membranes and are designed to increase efficiency by removing gel pieces that could otherwise clog the column.

Features and Benefits
- High recovery of single-and double-stranded DNA
- Eliminates contaminants that can cause high background or interfere with sample activity
- Sample is eluted in a small volume
- 100 µg capacity

**Ordering Information - Elutrap Electroelution System**

- Elutrap Starter Kit includes:
  - 1 Elutrap Device, 50 BT1 Membranes, 50 BT2 Membranes
- Elutrap System Starter Kit includes:
  - 1 Elutrap Device, 1 Electrophoresis Chamber, 50 BT1 Membranes, 50 BT2 Membranes
- Elutrap System Kit - 4-pack includes:
  - 4 Elutrap Devices, 1 Electrophoresis Chamber, 50 BT1 Membranes, 50 BT2 Membranes

- Replacement Membranes
  - BT1 - 100 µk: 10 404 080
  - BT2 - 100 µk: 10 404 092

Nucleic Acid and Protein Sample Preparation

The Elutrap-d column matrix binds nucleic acids in high quantities upon sample application under low salt conditions. Contaminants are washed through the column and the purified DNA is then eluted with high salt. The eluted sample is ready for use in a variety of assays that require high purity of the nucleic acid.

Elutrap-d columns are used with standard syringes. Optional prefilters contain non-binding cellulose acetate membranes and are designed to increase efficiency by removing gel pieces that could otherwise clog the column.

Features and Benefits
- High recovery of single- and double-stranded DNA
- Eliminates contaminants that can cause high background or interfere with sample activity
- Sample is eluted in a small volume
- 100 µg capacity
Nucleic Acid and Protein Sample Preparation

PCR Cleanup UNIFILTER®

Process 96 or 384 samples quickly with greater than 85% recovery. The Whatman PCR Cleanup UNIFILTER eliminates time-consuming precipitations and labor-intensive resin purifications. Purified DNA is ready for sequencing, hybridization assays and microarrays.

The PCR Cleanup UNIFILTER can be used with both vacuum and centrifuge techniques. (Centrifugation is recommended for final elution with the 384 Well UNIFILTER.)

Ordering Information - 96 Well Dye Terminator Removal UNIFILTER

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Well Format</th>
<th>Well Volume (µL)</th>
<th>Plate Material</th>
<th>Well Bottom</th>
<th>Quantity/Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>7700-2801</td>
<td>96</td>
<td>800</td>
<td>Polystyrene</td>
<td>Filter, LDD</td>
<td>25</td>
</tr>
<tr>
<td>7701-5750</td>
<td>96</td>
<td>750</td>
<td>Natural Polypropylene</td>
<td>Round</td>
<td>25</td>
</tr>
</tbody>
</table>

* Long drip director

Ordering Information - 384 Well Dye Terminator Removal UNIFILTER

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Well Format</th>
<th>Well Volume (µL)</th>
<th>Plate Material</th>
<th>Well Bottom</th>
<th>Quantity/Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>7700-1101</td>
<td>384</td>
<td>100</td>
<td>Polystyrene</td>
<td>N/A</td>
<td>50</td>
</tr>
<tr>
<td>7701-1100</td>
<td>384</td>
<td>100</td>
<td>Clear Polyethylene</td>
<td>N/A</td>
<td>50</td>
</tr>
</tbody>
</table>

*Does not comply with SBS standards

Dye Terminator Removal UNIFILTER®

96 Well and 384 Well

The Whatman Dye Terminator Removal plates are available in 96 Wells and 384 Well formats. These plates can be used with gel filtration media for high-throughput sequencing reaction cleanup, including removal of dye blobs.

They are constructed from rigid polystyrene that can withstand centrifugation. Laboratory packing of gel filtration media is less expensive than pre-packed plates or spin columns.

Ordering Information - 96 Well Dye Terminator Removal UNIFILTER

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Well Format</th>
<th>Well Volume (µL)</th>
<th>Plate Material</th>
<th>Well Bottom</th>
<th>Quantity/Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>7700-2801</td>
<td>96</td>
<td>800</td>
<td>Polystyrene</td>
<td>Filter, LDD</td>
<td>25</td>
</tr>
<tr>
<td>7701-5750</td>
<td>96</td>
<td>750</td>
<td>Natural Polypropylene</td>
<td>Round</td>
<td>25</td>
</tr>
</tbody>
</table>

* Long drip director

Ordering Information - 384 Well Dye Terminator Removal UNIFILTER

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Well Format</th>
<th>Well Volume (µL)</th>
<th>Plate Material</th>
<th>Well Bottom</th>
<th>Quantity/Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>7700-1101</td>
<td>384</td>
<td>100</td>
<td>Polypropylene</td>
<td>N/A</td>
<td>50</td>
</tr>
</tbody>
</table>

* Long drip director

GenXTrak™ Purification Service

Whatman provides a comprehensive contract service for the purification, quantification and normalization of DNA. The service is specifically designed to meet the individual needs of the client on a confidential basis at all stages of the project.

Please note: This service is only available in Europe.
This microplate has a cellulose acetate membrane with a special support, which clears non-chaotropic bacterial lysates, and long drip directors. Without further purification, the DNA is clean enough for further enzymatic manipulation. Cellulose acetate acts as both a depth filter and a fine particle filter. The 0.45 μm pores do not block because of the depth effect of the membrane. Cellulose acetate is also inert and does not bind either DNA or protein.

### Ordering Information - Plasmid/BAC Sample Preparation

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Well Format</th>
<th>Volume</th>
<th>Plate</th>
<th>Irradiated</th>
<th>Quantity/Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>7701-5205</td>
<td>96</td>
<td>2 mL</td>
<td>Polypropylene</td>
<td>Yes</td>
<td>25 (individually bagged)</td>
</tr>
<tr>
<td>7720-2830</td>
<td>96</td>
<td>800 µL</td>
<td>Clear Polystyrene</td>
<td>Lysate Clarification</td>
<td>25</td>
</tr>
<tr>
<td>7700-2810</td>
<td>96</td>
<td>800 µL</td>
<td>Clear Polystyrene</td>
<td>DNA Binding</td>
<td>25</td>
</tr>
<tr>
<td>7701-1100</td>
<td>384</td>
<td>100 µL</td>
<td>Clear Polystyrene</td>
<td>N/A</td>
<td>50</td>
</tr>
<tr>
<td>7700-2808</td>
<td>96</td>
<td>100 µL</td>
<td>Clear Polystyrene</td>
<td>0.45 μm CA *</td>
<td>25</td>
</tr>
<tr>
<td>7701-5205</td>
<td>96</td>
<td>2 mL</td>
<td>Natural Polypylene</td>
<td>N/A</td>
<td>25</td>
</tr>
<tr>
<td>7701-5750</td>
<td>96</td>
<td>750 µL</td>
<td>Natural Polypylene</td>
<td>N/A</td>
<td>25 (individually bagged)</td>
</tr>
</tbody>
</table>

* CA = cellulose acetate