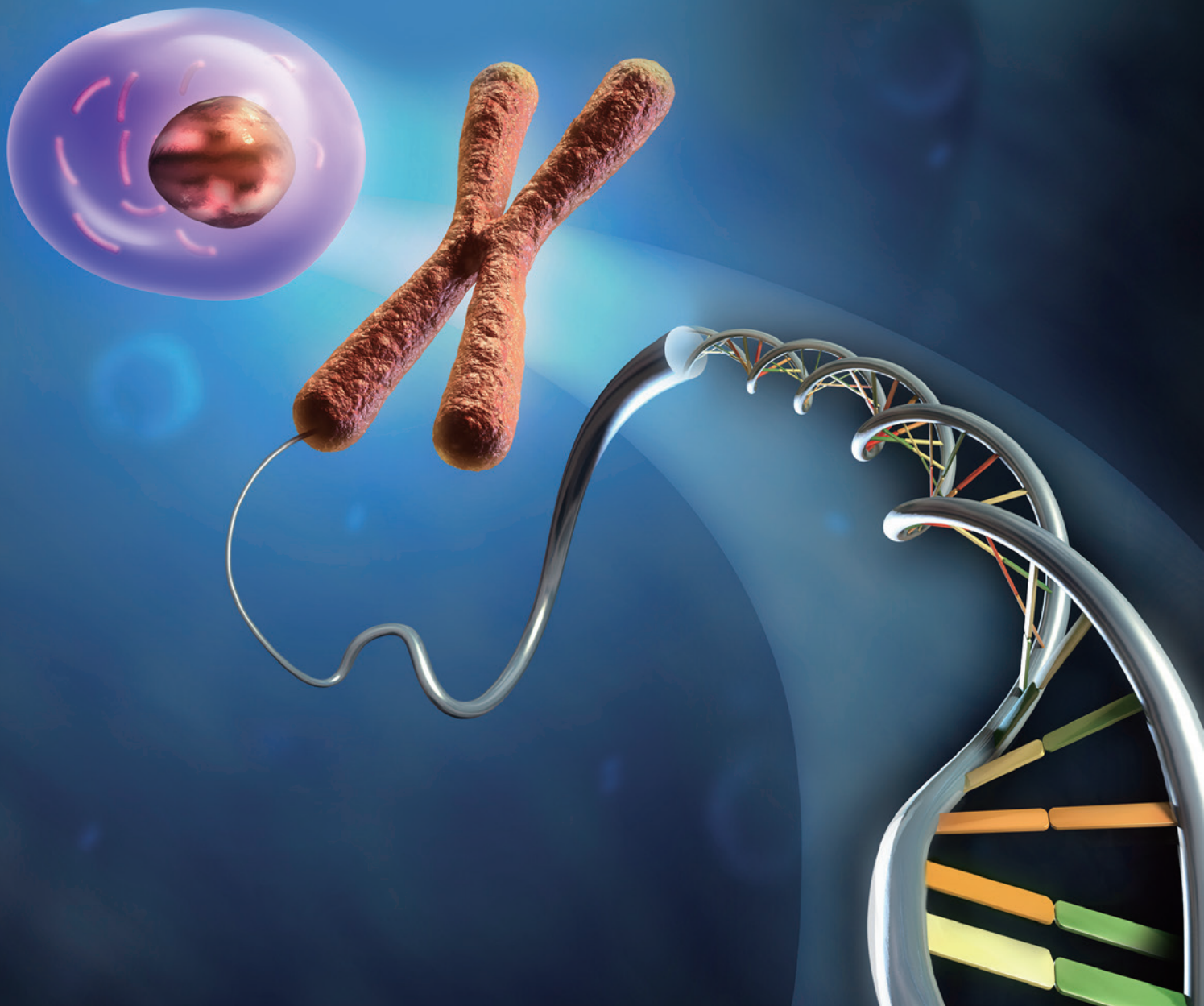
DANAGEN

SAMPLE COLLECTION / PRESERVATION AND PURIFICATION OF NUCLEIC ACIDS

Product Guide



DANAGEN

DANAGEN-BIOTED is a Spanish company engaged in the developing of Molecular Biology products used clinical and basic research, biotechnology and agricultural applications.

Our goal is to offer high-quality products to help you improve your workflows. The method used for the isolation and purification of nucleic acid from biological samples and reaction mixtures is critical to the success of subsequent downstream molecular applications. Considering this, DANAGEN have developed a portfolio of DNA/RNA collection/stabilization, DNA/RNA purification, and DNA/RNA clean-up products for the simple and rapid recovery of high-yield, inhibitor-free DNA from diverse sample sources.

For the best option for all of your extraction needs, we offer multiple nucleic acid extraction chemistries including magnetic beads, silica membranes and salting out. These three different methods are available in a wide range of different kits and configurations. We can work with you to customize our products, protocols or procedures to best fit the special testing needs of your product.

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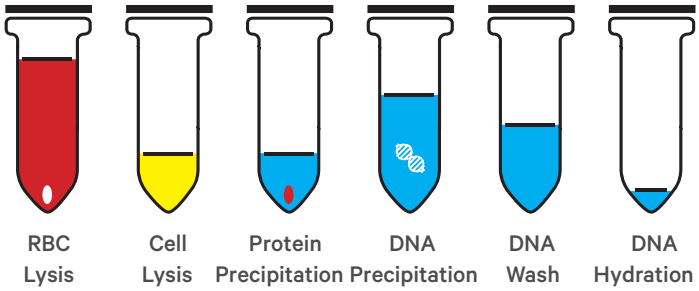
GENOMIC DNA / BLOOD

DANAGENE Blood DNA Kit

DANAGENE Blood DNA kit is designed for the rapid large-scale preparation of **highly pure genomic DNA from up to 10 ml whole blood.**

The kit can be used for DNA extraction from fresh o frozen blood collected in tubes containing citrate, heparine or EDTA. For a high yield, tubes containing EDTA are recommended.



Features:

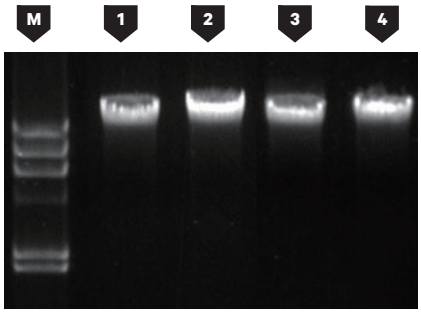
- Reproducible,fast and non-expensive method.
- This method can be scaled allowing to process large amounts of samples simultaneously.
- Safe method, as it removes completely the need of using toxic reagents.
- Typical yield of 35 µg/ml of blood with an A260/280 of 1.7-1.9.
- It is completed in 45-60 minutes.

This kit is based on a simple and fast lysis and protein elimination process without using toxic reagents, organic solvents or enzymatic treatments.

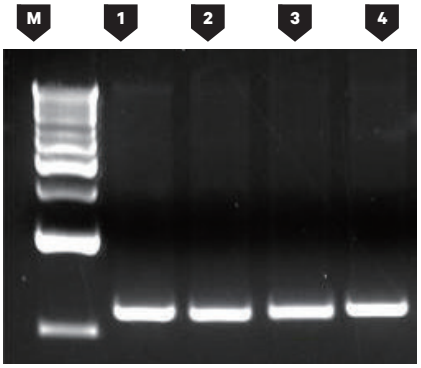
Applications:

DNA purified using this kit is highly stable and suited for use in a wide range of applications such as:

- DNA archiving.
- PCR and quantitative real-time PCR.
- SNP analysis.
- Southern Blotting.
- Sequencing.



Genomic DNA analysis in agarose gel. Purified from whole blood using the DANAGENE BLOOD DNA Kit.



PCR amplification was performed on DNA isolated from blood.
600 bp amplicon was obtained.

“ We can supply you with the necessary reagents for the automated DNA purification for large samples in the **AUTOPURE LS Robot.**

Product	Product Description	Preps
0601	DANAGENE Blood DNA KIt	100 ml Blood
0602	DANAGENE Blood DNA KIt	200 ml Blood

AUTOPURE LS Components

Product	Product Description	Preps
SRBC	RBC Lysis Solution	9000 ml
LS	Cell Lysis Solution	3800 ml
SPP	Protein Precipitation Solution	3800 ml
SH	DNA Hydratation Solution	1000 ml

GENOMIC DNA / BLOOD

DANAGENE SPIN Blood DNA Kit

This kit is designed for the rapid purification of **highly pure genomic DNA from whole blood, serum, plasma, body fluids and dried blood spots.** This kit combines the advantages of a silica-based system with a microspin format.

Animal o human blood samples, fresh or frozen material, may be processed conveniently.

Features:

- For rapid purification of high-quality, ready-to-use DNA from blood.
- Sample size: 300 µl whole blood, serum, plasma ,body fluids and dried blood spots.
- No organic extraction or alcohol precipitation.
- Complete removal of contaminants and inhibitors for reliable downstream applications.
- Typical yield: 4- 6 µg genomic DNA.
- Elution volume: 50-200 µl.
- High quality DNA obtained that can be directly used in PCR, Southern, any enzymatic reaction, cloning, etc.

Applications:

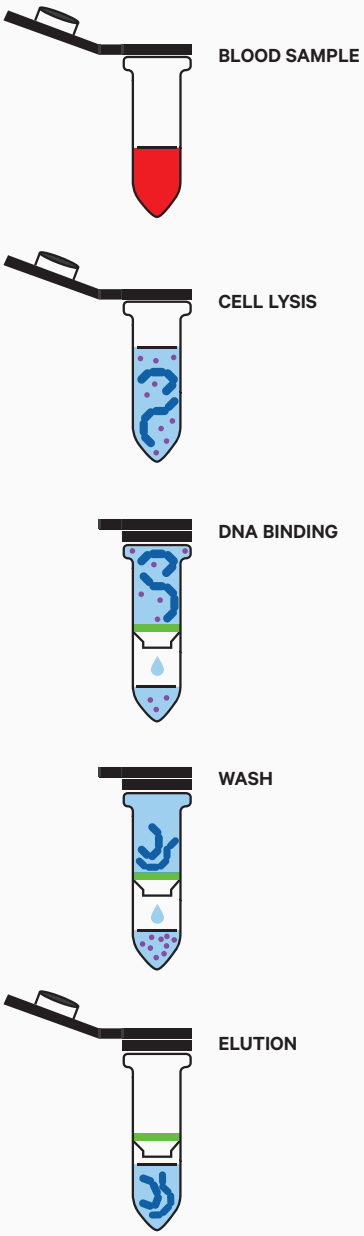
- Genomic, bacteria , viral DNA isolation.
- DNA from whole blood (human or animal blood, fresh or frozen).
- DNA from whole blood treated with citrate, EDTA, heparin.
- DNA from serum, plasma, buffy coat, platelets, body fluids, and dried blood spots.

Product	Product Description	Preps
0606.1	DANAGENE Blood DNA KIt	50
0606.2	DANAGENE Blood DNA KIt	250

Procedure:

You can process the whole blood or DNA isolation from leukocytes with a previous lysis of erythrocytes (kit contains the RBC Lysis Buffer).

Lysis is achieved by incubation of whole blood in a solution containing large amounts of chaotropic ions in the presence of proteinase K at 70°C. Appropriate conditions for binding DNA to the silica membrane are created by addition of ethanol to the lysate. Contaminants are removed by washing with two different buffers. Pure genomic DNA is finally eluted under low ionic strength conditions in a slightly alkaline elution buffer.



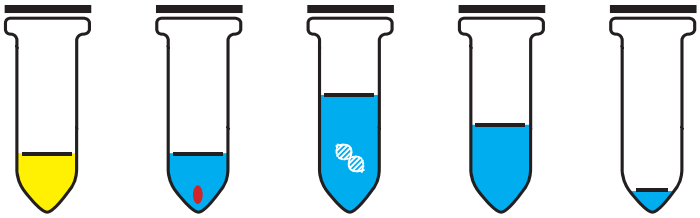
GENOMIC DNA / TISSUE AND CELLS

DANAGENE Genomic DNA Kit

We presented a different kits designed for an efficient and fast purification of highly **pure genomic DNA from a wide variety of samples including:**

- **DANAGENE Genomic DNA Cell Kit:** For purification of archive-quality DNA from cell cultures and cell suspensions.
- **DANAGENE Genomic DNA Tissue Kit:** For purification of archive-quality DNA from tissues.
- **DANAGENE Genomic DNA Mouse Tail Kit:** For purification of archive-quality DNA from mouse tails.
- **DANAGENE Genomic DNA Bacteria Kit:** For purification of archive-quality DNA Gram-positive or Gram-negative bacteria.
- **DANAGENE Genomic DNA Yeast Kit:** For purification of archive-quality DNA from yeast.

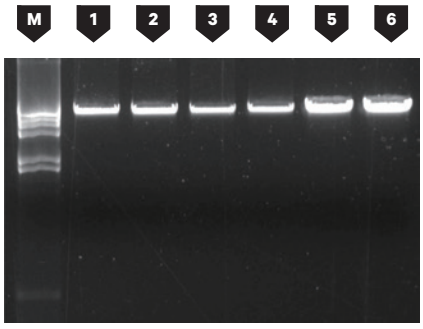
For another different samples you can contact with our Technical Service for establish one working protocol.



The process includes a cell lysis with an anionic detergent that solubilizes the necessary cell components, the contaminant RNA can be removed with a RNase treatment. The cell proteins are removed by precipitation, which allows to leave the genomic DNA in solution. Finally, the genomic DNA is isolated by a precipitation with isopropanol.

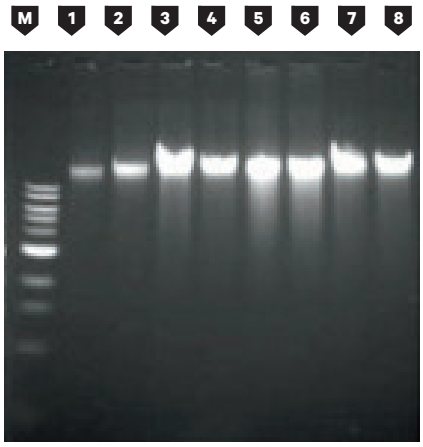
Features:

- Reproducible, fast and non-expensive method.
- Convenient and scalable purification procedure.
- Safe method, as it removes completely the need of using toxic reagents.
- Allows to process different biological samples.
- A high quality DNA is obtained, with an A260/280 of 1.7 - 1.9 ratio.



Genomic DNA analysis in agarose gel. Prepared with DANAGENE Genomic DNA Kits:

1. Mouse Brain.
2. Mouse Intestine.
3. Mouse Liver.
4. Mouse Kidney.
5. Mouse Heart.
6. Mouse Lung.



Genomic DNA analysis in agarose gel. From different samples.

1. Human hair.
2. Urine.
3. Mouse Tall.
4. Drospphila melanogaster.
5. Semen.
6. Blood stain.
7. E.coli.
8. Sacharomyces cerevisiae.

Applications:

DNA purified using this kit is highly stable and suited for use in a wide range of applications such as:

- DNA archiving.
- PCR and quantitative real-time PCR.
- SNP analysis.
- Southern Blotting.
- Next Generation Sequencing.

Product	Product Description	Tissue processed per kit
0603.1	DANAGENE Genomic DNA Tissue Kit	1 gr/50 preps of 20 mg
0603.11	DANAGENE Genomic DNA Tissue Kit	4 gr / 200 preps of 20 mg
0603.12	DANAGENE Genomic DNA Tissue Kit	33 gr/1650 preps of 20 mg

Product	Product Description	Cells processed per kit
0603.2	DANAGENE Genomic DNA Cell Kit	50 preps of 3-5 x 10^6
0603.21	DANAGENE Genomic DNA Cell Kit	200 preps of 3-5 x 10^6
0603.22	DANAGENE Genomic DNA Cell Kit	1650 preps of 3-5 x 10^6

Product	Product Description	Mouse Tail processed per kit
0603.3	DANAGENE Genomic DNA Mouse Tail Kit	200 preps of 0.5-1.0 cm
0603.31	DANAGENE Genomic DNA Mouse Tail Kit	1650 preps of 0.5-1.0 cm

Product	Product Description	Volume culture processed per kit
0603.5	DANAGENE Genomic DNA Bacteria Kit	200 ml
0603.6	DANAGENE Genomic DNA Yeast Kit	200 ml

GENOMIC DNA / TISSUE AND CELLS

DANAGENE SPIN Genomic DNA Kit

This kit is designed for the rapid purification of highly pure **genomic DNA from a wide variety of samples,** including blood, cultured cells, animal tissue, mouse tail, bacteria and yeast.

This kit combines the advantages of a **silica-based system with a microspin format.**

For another different samples you can contact with our Technical Service for establish one working protocol

Features:

- MicroSpin columns with glass fiber membrane technology.
- Tipical yield: 20- 35 µg genomic DNA.
- Binding capacity: 60 µg.
- Sample size: 200-300 µl whole blood, 200 µl buffy coat; 25 mg tissue; 10^2- 10^7 cells; 0,5- 1.0 cm mouse tail ; 10^8 yeast; 10^9 bacteria (Gram + or Gram -); For the rest of samples or special applications contact our technical service.
- Elution volume: 50-200 µl.
- High quality DNA obtained that can be directly used in PCR, Southern, any enzymatic reaction, cloning, etc.

Sample	Amount	DNA µg
Human whole blood	200 µl	3-6
Lymphocytes	5 x 10^6	15-25
HeLa Cells	2 x 10^6	15-25
Liver	25 mg	15-30
Brain	25 mg	15-30
Lung	25 mg	5-10
Heart	25 mg	5-10
Kidney	25 mg	10-25
Spleen	10 mg	5-25
Mouse tail	0.5-1.0 cm	5-25
Rat tail	0.6 cm	20-35
Bacteria	10^9	3-5
Yeast	10^8	10-15

Product	Product Description	Preps
0605.1	DANAGENE SPIN Genomic DNA Kit	50
0605.2	DANAGENE SPIN Genomic DNA Kit	250
0605.3	DANAGENE SPIN Genomic DNA Kit	1000

Procedure:

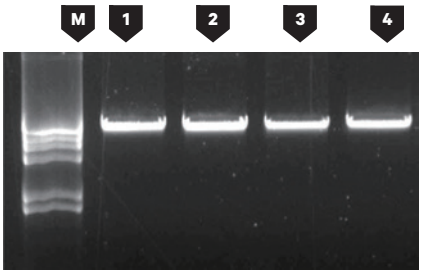
The process includes a cell lysis by incubation of the sample in a solution containing SDS and proteinase K at 55°C. Appropriate conditions for binding of DNA to the glass fibre membrane are created by addition of large amounts of chaotropic ions to the lysate. Contaminants are removed by efficient washing with wash buffer. Pure genomic DNA is finally eluted with an elution buffer and it's ready to use for subsequent reactions.

GENOMIC DNA / TISSUE AND CELLS

DANAGENE MICROSPIN Genomic DNA Kit

This kit is designed for the efficient isolation of **genomic and mitochondrial DNA from small samples, such as different kinds of cells and tissues, laser-microdissected samples, small amounts of blood** using a special column design.

For another different samples you can contact with our Technical Service for establish one working protocol.



DNA isolation from 4 samples of 50 µl of fresh blood using the DANAGENE MICROSPIN DNA Kit.

Features:

- Silica-membrane technology with specials MicroSpin columns.
- Rapid purification of high-quality DNA from small samples quantities.
- No organic extraction or alcohol precipitation.
- Complete removal of contaminants and inhibitors for reliable downstream applications.
- Elution volume: 10-20 µl.
- High quality DNA obtained that can be directly used in PCR, Southern, any enzymatic reaction, cloning, etc.

Applications:

- DNA isolation from tissue (e.g., mouse or human tissues, laser micro-dissections).
- DNA isolation from cells (e.g., cultured cells).
- DNA isolation from clinical samples (e.g., blood samples, biopsy samples).
- DNA isolation from forensic samples (e.g., dried blood spots, buccal swabs).

Product	Product Description	Preps
0607.1	DANAGENE MICROSPIN Genomic DNA kit	50
0607.2	DANAGENE MICROSPIN Genomic DNA kit	250

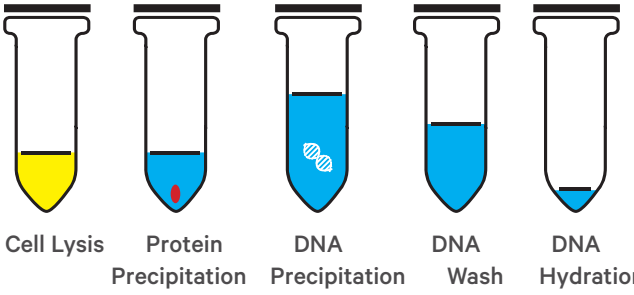
GENOMIC DNA / SALIVA

DANAGENE SALIVA / SWABS DNA Kits

We presented a different kits for an efficient and fast purification of highly pure genomic DNA from a wide variety of **saliva samples** including:

- **DANAGENE SALIVA DNA KIT:**
  1. Saliva samples.
  2. Preserved Saliva samples with our **DANASALIVA Sample Collection Kit.** Ref. 0603.43
  3. Preserved Saliva samples with the ORAGENE self collection kits (DNAGenotek).

- **DANAGENE SWABS DNA Kit**
  1. Danagene's buccal swabs.
  2. Preserved buccal swabs with our **DANASWABS Sample Collection Kit.** Ref.0616



The process includes a cell lysis with an anionic detergent that solubilizes the necessary cell components, proteinase K and RNase. The cell proteins are removed by precipitation, which allows to leave the genomic DNA in solution. Finally, the genomic DNA is isolated by a precipitation with isopropanol.

Features:

- DNA from saliva is equivalent to DNA from blood for downstream applications.
- Improve patient care and compliance with painless, non-invasive sample collection and decreases costs.
- Reproducible, fast and non-expensive method.
- Safe method, as it removes completely the need of using toxic reagents.

Applications:

DNA purified using this kit is highly stable and suited for use in a wide range of applications such as:

- DNA archiving.
- PCR and quantitative real-time PCR.
- SNP analysis.
- Southern Blotting.
- Next Generation Sequencing.

Product	Product Description	Preps
0603.4	DANAGENE SALIVA DNA Kit	50
0603.41	DANAGENE SALIVA DNA Kit	160

Product	Product Description	Preps
0616.100	DANAGENE SWABS DNA Kit	100
0616.500	DANAGENE SWABS DNA Kit	500
0616.1000	DANAGENE SWABS DNA Kit	1000

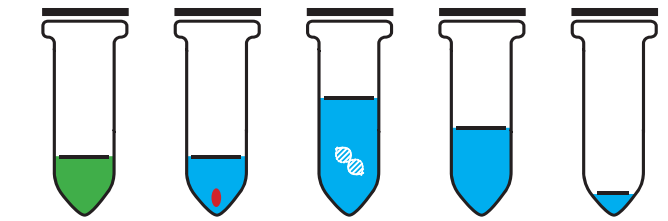
GENOMIC DNA / PLANT

DANAGENE PLANT DNA Kit

This kit provides a method for an efficient and fast **genomic DNA extraction from plant cells and tissues, or fungi.**

It is known that plants contain quantities of different substances (polyssaccharides, polyphenols, etc) and that plants with the same or related genus can present enormous variabilities in their biochemical composition, for such reason, it becomes difficult to standardise on a single DNA extraction method for all plants.

To solve this problem and to be able to cover the biggest number of plants, DANAGENE uses a **PVP solution** that can bind the polyssacharides and polyphenols that are released by the cell lysis and has the capability of forming complexes with the nucleic acids to degrade them or to precipitate with them.



The process includes a sample homogenization in an extraction Buffer and the PVP solution. The lysis is completed with the incubation in a Lysis Buffer and RNase at 37°C for 30 minutes. Cell proteins and cell debris are removed by a protein removing Buffer that allows to leave the genomic DNA in solution. Finally, the genomic DNA is isolated by a precipitation with isopropanol.

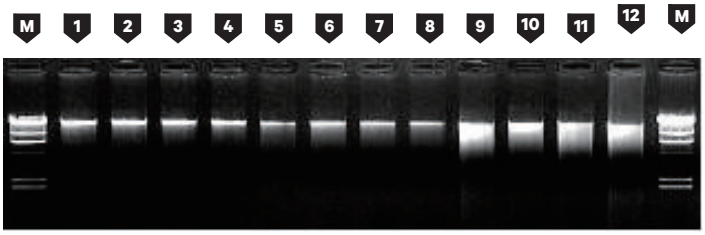
Features:

- Reproducible, fast and non-expensive method.
- Convenient and scalable purification procedure.
- Safe method, as it removes completely the need of using toxic reagents.
- It is completed in 45-60 minutes.
- It contains a PVP solution that allows working with plants with a high content polyssacharides and polyphenols compounds.

Applications:

DNA purified using this kit is highly stable and suited for use in a wide range of applications such as:

- DNA archiving.
- PCR and quantitative real-time PCR.
- SNP analysis.
- Southern Blotting.
- Next Generation Sequencing.



Genomic DNA from different plants. Genomic DNA was isolated using DANAGENE PLANT DNA Kit from 20-40 mg of the following leaves or trees:

1. Corn.
2. Orange tree.
3. Olive tree.
4. Tomato.
5. Lemon.
6. Eucaliptus.
7. Corn.
8. Orange tree.
9. Olive tree.
10. Tomato.
11. Lemon.
12. Eucaliptus.

Product	Product Description	Preps
0604.1	DANAGENE PLANT DNA Kit	50
0604.2	DANAGENE PLANT DNA Kit	200

GENOMIC DNA / PLANT

DANAGENE SPIN PLANT DNA Kit

This kit provides a method for an efficient and fast **genomic DNA extraction from tissues of plants and fungi using MiniSpin columns.**

The kit includes two optimized, alternative lysis buffers based on the established CTAB and SDS lysis methods. As plants are very heterogenous and contain a lot of different metabolites like polyphenols, polysaccharides, or acidic components, DANAGENE SPIN PLANT Kit **offers two different lysis procedures for optimal processing of various samples.**

In addition we also use a PVP solution that can bind the polyssacharides and polyphenols.

Features:

- Silica Membrane Technology using MiniSpin columns.
- Choice of two optimized lysis buffers and PVP solution.
- High-purity DNA: typical A260/A280 ratio 1.6 - 1.9.
- Plant genomic DNA isolated in 30 minutes

Applications:

- Isolation of genomic DNA from: fresh / frozen / lyophilized plant tissue and fungi.
- Isolated DNA is ready for downstream applications such as PCR, real-time PCR, genotyping and Next generation sequencing.

Product	Product Description	Preps
0611.1	DANAGENE SPIN PLANT DNA Kit	50
0611.2	DANAGENE SPIN PLANT DNA Kit	200

Plant samples are first disrupted/homogenized and then lysed in a highly optimized buffer system, containing chaotropic salt, denaturing agent and detergents. A choice of two lysis buffers based on the established CTAB or SDS method are provided.
Crude lysate are cleared by centrifugation and the cleared lysate is then mixed with the Binding Buffer and processed through a MiniSpin column containing a silica membrane to which the plant genomic DNA binds.

Contaminants and impurities such a salts, metabolites and cellular components are removal by simple washing steps with two different buffers. High-quality purified plant genomic DNA is then eluted in a low Elution Buffer. The DNA is ready-to-use for a wide variety of applications.

GENOMIC DNA / FOOD-STOOL

DANAGENE SPIN FOOD-STOOL Kit

This kit has been optimized for an efficient and fast purification of total DNA from:

1. Fresh feces or preserved with our DANASTOOL Sample Collection Kit

2. Various food samples (raw material and processed food).

After the samples have been homogenized, the DNA can be extracted with the extraction buffer, lysis mixtures should be cleared by centrifugation or filtration in order to remove contaminants and residual cellular debris. The clear supernatant is then mixed with the binding buffer, proteinase K and isopropanol to create conditions for optimal binding to the silica membrane column. After washing with two different buffers for efficient removal of potential PCR inhibitors, DNA can be eluted in low salt buffer or water, and is ready-to-use in subsequent reactions.

DNA extracted from human stool. DNA was purified from 6 human stool samples (100 mg) using the DANAGENE SPIN FOOD-STOOL

The DANASTOOL Sample Collection Kit Plus contains the system for collecting stool samples + DNA isolation kit

Features:

- Silica Membrane Technology using MiniSpin columns.
- Sample size: up to 200mg.
- Complete removal of contaminants and inhibitors fro reliable downstream applications.
- Simultaneous extraction of microbial DNA and host DNA.

Applications:

- DNA extracted from fecal specimens is an important tool in different areas of molecular genetic research reaching from cancer diagnostics to population genetic studies.
- DNA from complex matrices, processed food, soya, chocolat, cereals, meat, animal feed.
- Detection of genetically modified material in food products.
- Detection of specific DNA in animal feed.

Product	Product Description	Preps
0609.1	DANAGENE SPIN FOOD-STOOL Kit	50
0609.2	DANAGENE SPIN FOOD-STOOL Kit	200

Product	Product Description	Preps
0617.50	DANASTOOL Sample Collection Kit Plus	50
0617.250	DANASTOOL Sample Collection Kit Plus	200

GENOMIC DNA / FOOD-STOOL

DANAGENE SPIN FOOD-STOOL “Bacteria” Kit

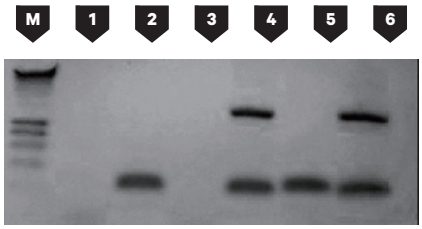
This kit has been optimized for an efficient and fast **PCR-ready bacterial DNA** extraction (Listeria, Salmonella, E.coli, etc) **from pre-enrichment or enrichment culture** from different **food samples, raw materials** or **feces** using glass fiber membrane MicroSpin columns which selectively bounds the DNA.

Detection of very low levels of bacterial contamination in foods and feces necessitates these samples to be cultured for a few hours in an appropriate enrichment broth. The use of culture enrichment prior to PCR analysis serves many purposes, including:

1. Dilution of PCR inhibitory substances present in the sample matrix.
2. Multiplication of the target organism to provide detectable concentrations.
3. Dilution of dead cells.
4. Possibility of isolating the target organism for complementary tests.

Features:

- Silica Membrane Technology using MiniSpin columns.
- Complete removal of PCR inhibitors.
- PCR and Real Time PCR-ready DNA.
- Sample size: from 1 ml of pre-enrichment or enrichment medium of different food samples.



PCR detection of Salmonella ssp. Salmonella ssp. amplification experiments were done using the DNA obtained in the previous extraction. 2 different PCR Mix were used, one of them amplifies a 285 bp fragment from the invA gene from Salmonella (lanes 2 and 5); the other MIX amplifies the gene invA and as internal control the bacterial 16S rRNA gene from the bacteria, resulting a 1300 bp fragment (lanes 4 and 6).

Lane 1: negative control MIX1.
Lane 3: negative control MIX2

Product	Product Description	Preps
0608.1	DANAGENE SPIN FOOD-STOOL “Bacteria Kit	50
0608.2	DANAGENE SPIN FOOD-STOOL “Bacteria Kit	200

GENOMIC DNA / FFPE

DANAGENE FFPE DNA Kit

This kit is optimized for a fast method to isolate **DNA from formalin-fixed, paraffin-embedded (FFPE) tissue specimen.**

e procedure omits the use of flammable and malodorous xylene or d-limonene commonly used for desparaffinization, proprietary buffer formulation DEPARAFFINIZATION SOLUTION is used for the complete dissolution of the wax to release the tissue.

Procedure:

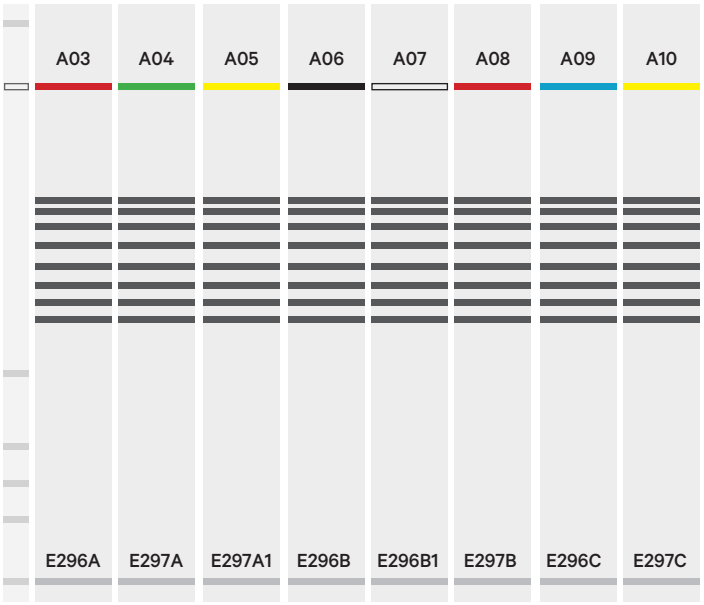
1. **Remove paraffin:** paraffin is dissolved and removal in the DEPARAFFINIZATION SOLUTION.
2. **Lyse:** sample is lysed under denaturing conditions with proteinase K.
3. **Heat:** incubation at 90ºC reverses formalin crosslinking.
4. **Bind:** DNA binds to the membrane and contaminants flow through.
5. **Wash:** residual contaminants are washed away.
6. **Elute:** concentrated DNA is elute from the membrane.

Features:

- Silica membrane technology with specials MicroSpin columns.
- Very easy paraffin removal..
- Safe method avoids xylene and other toxic.
- Complete removal of contaminants and inhibitors for reliable downstream applications.
- Low elution volume: 20-30 µl.
- The quality of DNA is suitable for the following applications as quantitative PCR or Next generation sequencing (NGS).

Applications:

- Rapid isolation of DNA from formalin-fixed, paraffin-embedded samples.
- Isolation of DNA from fresh and archived FFPE samples
- Isolation of DNA from specimen of object slides
- Typical downstream application: PCR, pPCR, NGS, NGS, STR analysis.



PCR Multiplex from 8 FFPE samples using the DANAGENE FFPE DNA Kit for the DNA isolation.

Product	Product Description	Preps
0610.1	DANAGENE FFPE DNA KIt	50

PLASMID DNA / MINIPREP

DANAGENE PLASMID MINIPREP Kit

This kit is designed for the rapid, small-scale preparation of **high-purity plasmid DNA.**

It introduces TrueBLUE Lysis control reagent a color indicator wich provides visual identification of optimum buffer mixing. This prevent common handling errors that lead to inefficient cell lysis and incomplete precipitation of SDS, genomic DNA and cell debris. This makes ideal for use by researchers who have not much experience with plasmid preparation as well as experienced scientists who want to be assured of maximum product yield.

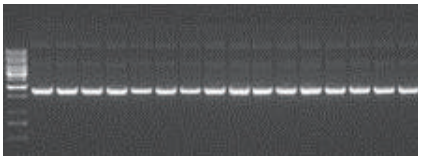
Features:

- Purify plasmid DNA within 15 minutes.
- Convenient: Plasmid silica fiber spin column.
- Plasmid Size: 1-15 kb.
- High Yield: up to 20 µg of pure plasmid DNA.
- Sample Volume: 1.5-3.0 ml of cultured bacterial cells.

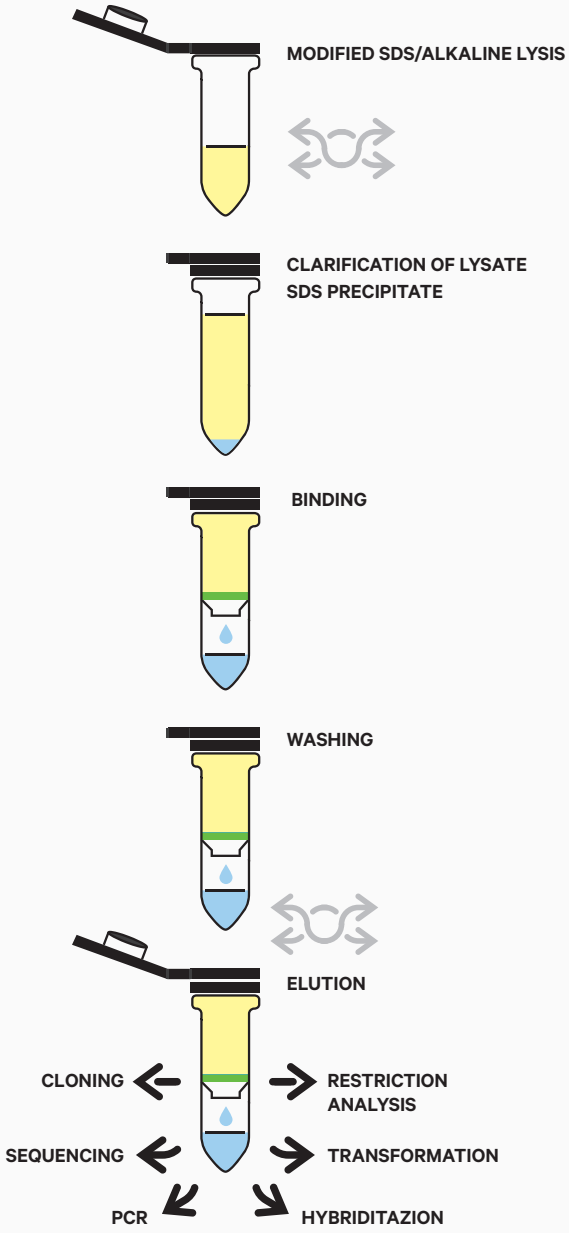
Product	Product Description	Preps
0702.1	DANAGENE PLASMID Miniprep "Sequencing grade" kit	250
0702.2	DANAGENE PLASMID Miniprep "Sequencing grade" kit	1000
0702.3	DANAGENE PLASMID Miniprep"Transfection grade" kit	100

The extracted DNA can be used in PCR, restriction analysis, subcloning, transforming and:

1. Sequencing **DANAGENE PLASMID Miniprep "Sequencing grade" kit.**
2. Trasfection process **DANAGENE PLASMID Miniprep "Transfection grade" kit.**



Agarose gel electrophoresis of plasmid DNA. Purified with DANAGENE PLASMID Miniprep "Sequencing grade" kit.



PLASMID DNA / MIDI- MAXIPREP

DANAGENE PLASMID MIDI / MAXIPREP Kit

DANAGENE PLASMID Midi/Maxiprep Kit offers a simple method for isolating **plasmid DNA** from **25-500 ml of recombinant E.coli cultures.**

This kit combines a modified alkaline lysis method with the convenience of **anion-exchange columns** to isolate high purity **transfection grade plasmid DNA** from bacterial cell lysates.

During the cell lysis step, both chromosomal and plasmid DNA are denatured. Potassium acetate is added to form a neutralized precipitate containing chromosomal DNA and other cellular components.
Plasmid DNA remains in the solution, reverts to its native supercoiled structure, and is then loaded onto an equilibrated anion-exchange column. The plasmid DNA becomes bound to the anion-exchange resin and is then eluted from the column with washing steps. Eluted DNA is precipitated and easily dissolved in TE buffer or nuclease-free-water.

The purified plasmids are suitable for use in the most demanding molecular biology applications, including transfection, in vitro transcription, automated or manual sequencing, cloning, hybridization and PCR.

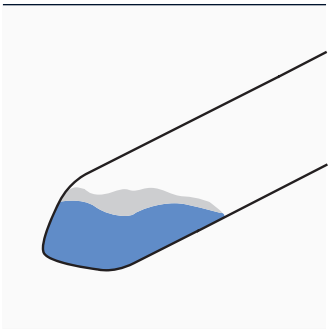
Features:

- Based on familiar anion-exchange columns.
- Achieve transfection grade plasmid purity.
- Columns available in MIDI (25/50 ml high-copy plasmids / 100ml low-copy plasmids) and MAXI (100 / 150 ml high-copy plasmids / 500ml low-copy plasmids) formats.
- Each kit includes gravity-flow columns and all the necessary reagents for ultrapure plasmid purification.
- Includes specialized filters to optional remove cellular debris from lysates.

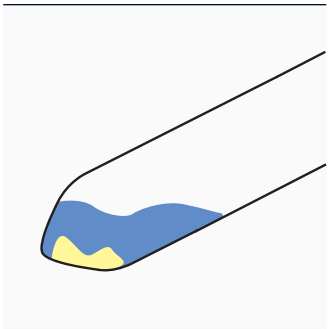
It introduces TrueBLUE Lysis control reagent a color indicator wich provides visual identification of optimum buffer mixing. This prevent common handling errors that lead to inefficient cell lysis and incomplete precipitation of SDS, genomic DNA and cell debris. This makes ideal for use by researchers who have not much experience with plasmid preparation as well as experienced scientists who want to be assured of maximum product yield.

Visualization of efficient cell lysis and SDS precipitation using TrueBLUE Lysis control reagent.

CELL LYSIS

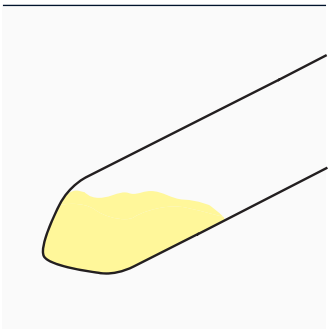


Correct Mixing

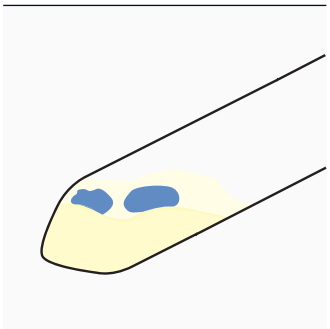


Insufficient Mixing

NEUTRALIZATION



Correct Mixing



Insufficient Mixing

Product	Product Description	Preps
0702.3	DANAGENE PLASMID MIDIPREP KIT	25
0702.4	DANAGENE PLASMID MAXIPREP KIT	10

VIRAL NUCLEIC ACIDS / VIRAL DNA AND VIRAL RNA

DANAGENE SPIN VIRAL DNA / RNA KIT

DANAGENE SPIN Viral DNA/RNA Kit is designed for the rapid simultaneous purification **of viral DNA and RNA from cell –free samples such as serum, plasma and cerebrospinal fluid.**

Viruses, when lysed by detergent and Proteinase K, release total viral nucleic acids. Then, in the presence of a chaotropic salt, viral nucleid acids bound selectively to glass fiber membrane in a special centrifuge tube. The nucleic acids remain bound while a series of a rapid wash and spin steps removes contaminating cellular components. Finally, low salt elution removes the viral nucleic acids from the glass fiber membrane. The process does not require nucleid acids precipitation, organic solvent extractions, or extensive handling of the nucleid acids.

The DANAGENE Spin Viral DNA/RNA Kit can be used for the isolation of viral RNA and DNA from a broad range of RNA and DNA viruses. However, performance cannot be guaranteed for every virus species and must be validated by the costumer.

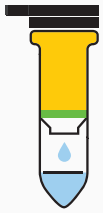
Features:

- Flexible system for purification of viral DNA/RNA free of impurities.
- Fast and easy purification with excellent reproducibility.
- Includes carrier-RNA for highest sensitivity in downstream applications.
- The viral DNA/RNA can be used directly as templates for standard PCR or RT-PCR.
- Sample material : 200 µl serum, plasma, cell-free biological fluids.

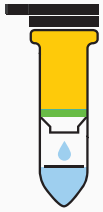
PLASMA SERUM

LYSIS

+ carrier RNA
LYSIS with GITC + ethanol

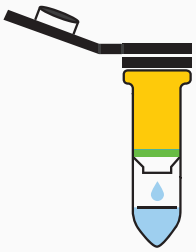


BINDING



WASHING

2 buffers



ELUTION

with low-salt buffer or RNa-se-free water

READY TO USE VIRAL NUCLEIC ACIDS

Product	Product Description	Preps
0612.1	DANAGENE SPIN VIRAL DNA/RNA KIT	100

VIRAL NUCLEIC ACIDS / VIRAL RNA

DANAGENE SPIN VIRAL RNA KIT

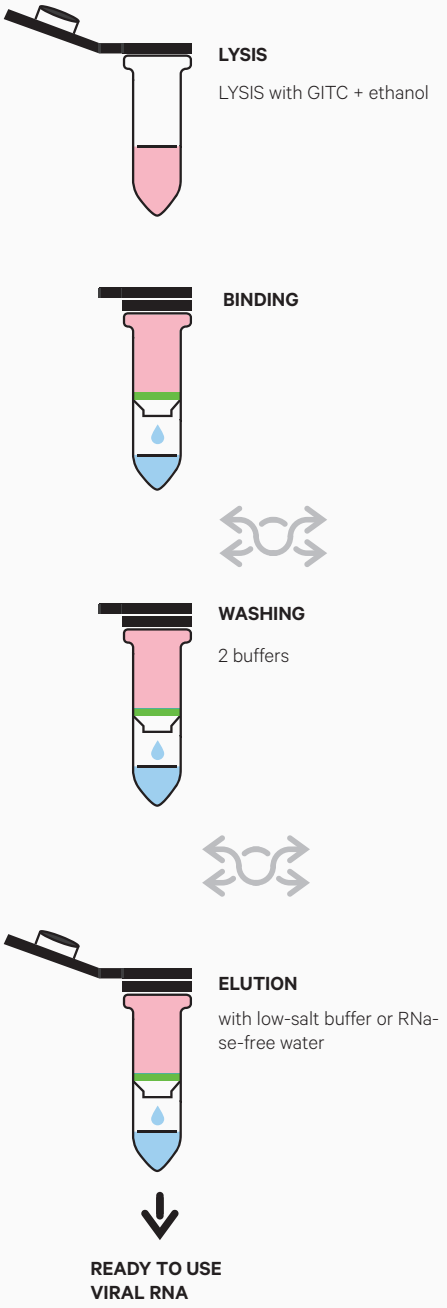
DANAGENE SPIN Viral RNA Kit is designed for the rapid purification **of viral RNA from cell –free samples such as serum, plasma and cerebrospinal fluid.**

Viruses, when lysed by detergent, release viral RNA. Then, in the presence of a chaotropic salt, viral RNA binds selectively to glass fiber membrane in a special centrifuge tube. The RNA ac remains bound while a series of a rapid wash and spin steps removes contaminating cellular components. Finally, low salt elution removes the viral RNA from the glass fiber membrane. The process does not require RNA precipitation, organic solvent extractions, or extensive handling of the RNA.

Features:

- Rapid isolation of high-quality, ready-to-use viral RNA.
- No organic extraction or alcohol precipitation.
- Complete removal of contaminants and inhibitors.
- The viral RNA can be used directly as templates for standard PCR or RT-PCR.
- Sample material: 200 µl serum, plasma, cell-free biological fluids.

PLASMA SERUM



Product	Product Description	Preps
0613.1	DANAGENE SPIN VIRAL RNA KIT	100

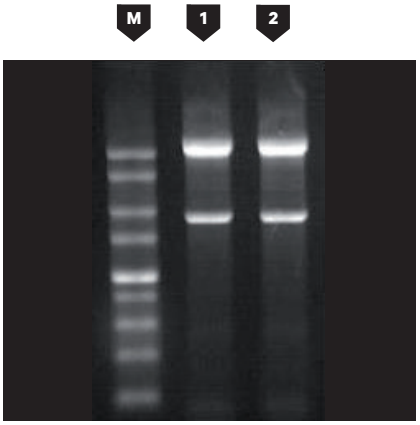
RNA PURIFICATION TISSUE / CELLS

DANAGENE TISSUE / CELLS RNA Kit

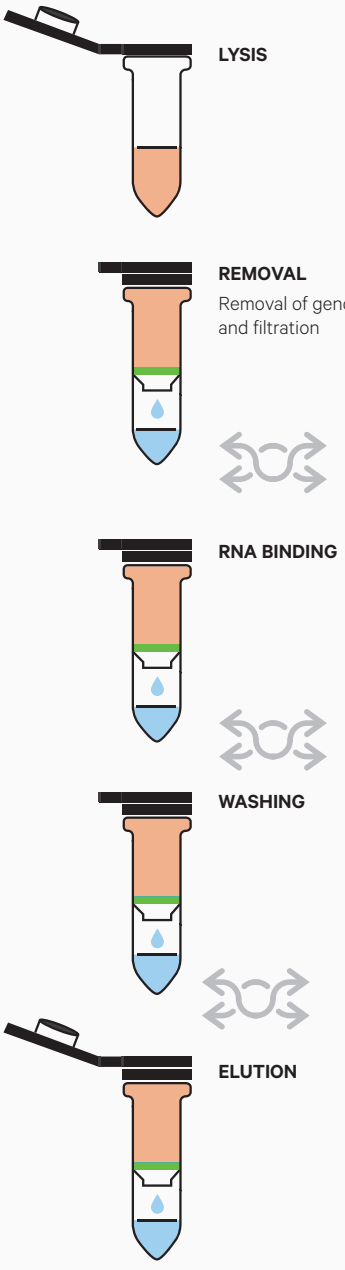
This kit provides a method for an efficient and fast **total RNA from tissues and cells using MiniSpin columns.**

The DANAGENE TISSUE/CELLS RNA Kit integrates a gDNA Removal Column. This Mini spin column removes quickly and efficiently the most genomic DNA without the need of DNase digestion.

In the first step cells and tissues are lysed without the need of β-mercapthoethanol. The chaotropic salt included in the lysis buffer immediately inactivates RNases. The lysate is added to the gDNA Removal Column to clarify the lysate and to remove contaminating gDNA. After addition of the binding solution to the flow-through, the RNA is bound to the RNA Column. Afterwards, two washing steps remove salts, metabolites, and macromolecular cellular components. High quality RNA is eluted with RNase-free H2O.



Total RNA isolated using DANAGENE TISSUE/CELLS RNA Kit. Total RNA was isolated from HeLa Cells



Features:

- Fast procedure delivering high-quality total RNA in minutes.
- Convenient handling – lysate clearing and gDNA removal with one column in one step.
- Sample Material: < 1 x 10^7 cultured cells; 25 mg animal/ human tissue.
- No phenol/chloroform extraction, no CsCl gradients, no LiCl or ethanol precipitation.

Aplications:

- RNA isolation from cultured cells and animal tissues.
- RNA is ready for downstream applications such as RT-PCR, Northern Blotting, Primer Extension, mRNA Selection, cDNA Synthesis, RNase Protection Assay.

Product	Product Description	Preps
0801.1	DANAGENE TISSUE/CELLS RNA KIT	100
0801.2	DANAGENE TISSUE/CELLS RNA KIT	500

RNA PURIFICATION / PLANT

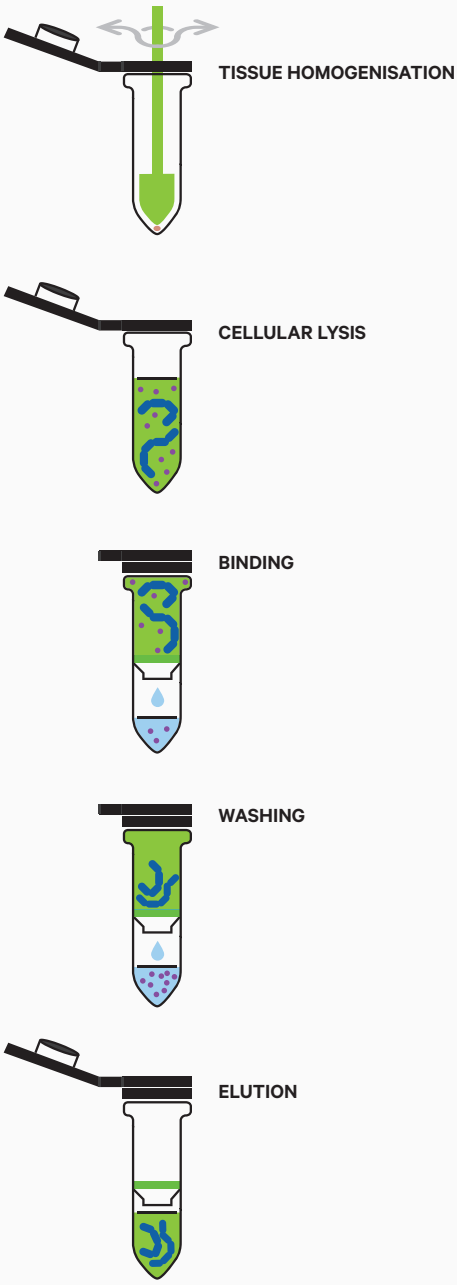
DANAGENE PLANT RNA Kit

This kit provides a method for an efficient and fast **total RNA from different cells and tissues of plants and fungi samples** using an efficient RNA miniprep system.

The samples are ground under liquid nitrogen followed by incubation in the lysis solution which immediately inactives the RNases and creates the correct binding conditions for the RNA absorption on the silica membrane. Together with the lysis solution, a PVP (polyvinylpyrrolidone) solution is added, that acts binding contaminants such us polyssacharides and polyphenols which may interfere or degrade the RNA.

Salt metabolites and cell components are removed by washing with 2 different buffers. The total RNA is eluted with nuclease free-water.

DANAGENE PLANT RNA Kit contains 2 different lysis solutions, one based on guanidine thiocyanate, the most recommended due to its high denaturation property, and other based on guanidine HCl as in some plants and fungi the presence of certain metabolites produces a solidification of the lysate.



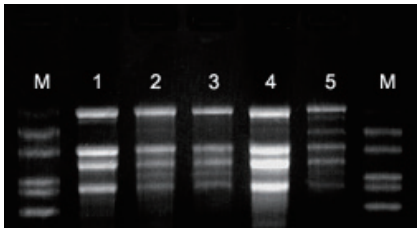
Features:

- High-quality total RNA in 30 minutes.
- Two alternative lysis buffers included – optimized lysis procedure.
- Sample Material: up to 100 mg (fresh plant tissue), up to 25 mg (dry plant tissue).
- No phenol/chloroform extraction, no CsCl gradients, no LiCl or ethanol precipitation.

Applications:

- RNA from plant cells and tissue.
- RNA from filamentous fungi.
- Typical downstream applications: real-time RT-PCR, gene expression profiling, Northern blotting, primer extension, array technology, RNase protection assays.

Product	Product Description	Preps
0802.1	DANAGENE PLANT RNA KIT	100
0802.2	DANAGENE PLANT RNA KIT	500



Total RNA from different using the DANAGENE PLANT RNA KIT.

Total RNA was isolated from 50 mg of the following species:

1. Corn.
2. Tomato.
3. Vine.
4. Pine tree.
5. Olive tree.
M. Markers.

RNA PURIFICATION / BLOOD

DANAGENE BLOOD RNA Kit

This kit provides a method for purification of **cellular RNA from fresh whole blood.**

The DANAGENE BLOOD RNA Kit simplifies isolation of RNA from blood with a fast spin-column procedure.

Red blood cells are selectively lysed and white cells collected by centrifugation. White cells are then lysed using highly denaturing conditions which immediately inactivate RNases. Using a gDNA Removal Column ,this Mini spin column removes quickly and efficiently the most genomic DNA without the need of DNase digestion.

After the sample is applied to the RNA Spin column. Total RNA binds to the membrane and contaminants are washed away, leaving pure RNA to be eluted in 30–100 µl RNase-free water (provided with the kit) for direct use in any downstream application.

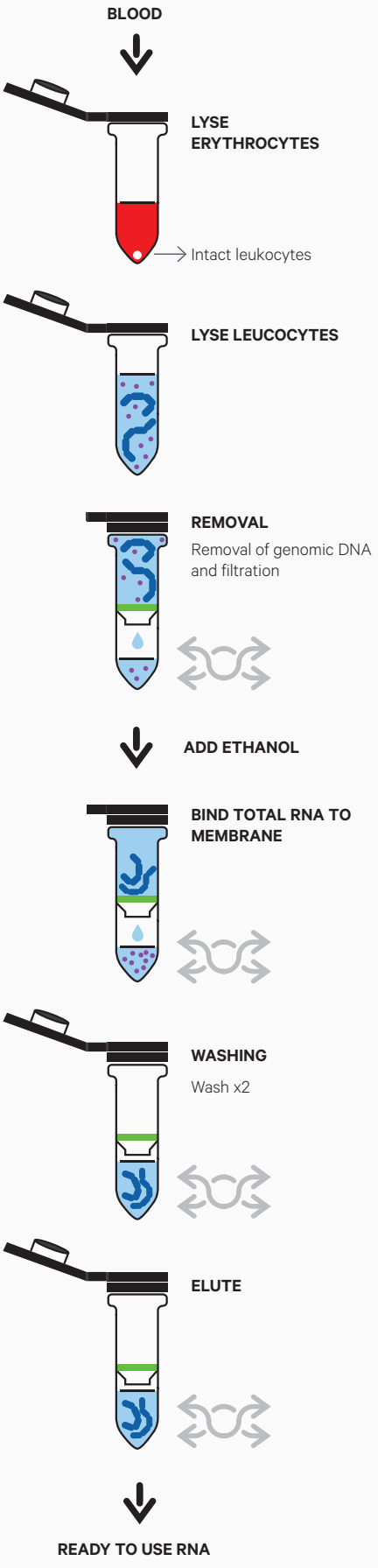
Features:

- Rapid purification of high-quality, ready-to-use RNA from blood samples.
- Silica membrane column technology.
- Convenient handling – lysate clearing and gDNA removal with one column in one step.
- Sample Material: 300 µl of whole blood; up to 1.5 ml with erythrocyte lysis.
- No phenol/chloroform extraction, no CsCl gradients, no LiCl or ethanol precipitation.

Applications:

- RNA isolation from up to 1.5 ml of fresh, whole human blood stabilized with any common anticoagulant, such as citrate, heparin, or EDTA.
- RNA is ready for downstream applications such as RT-PCR, Northern Blotting, Primer Extension, mRNA Selection, cDNA Synthesis, RNase Protection Assay.

Product	Product Description	Preps
0803.1	DANAGENE BLOOD RNA KIT	100
0803.2	DANAGENE BLOOD RNA KIT	500

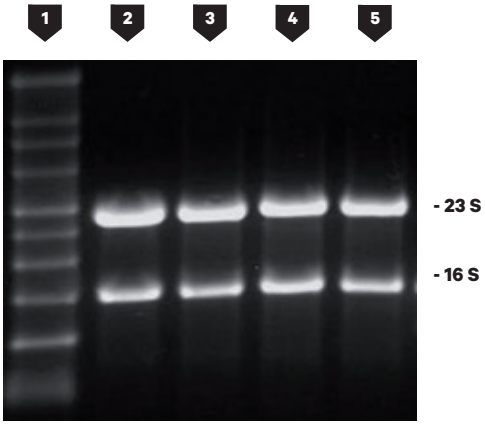


RNA PURIFICATION / BACTERIA

DANAGENE BACTERIA RNA Kit

This kit was designed for **total RNA purification from Gram (-) negative bacteria and Gram (+) positive bacteria** without using toxic reagents. This RNA Kit includes Bacteria Lysis Buffer and Lysozyme to reduce sample preparation time and minimize hands on time.

The process includes a cell lysis followed by a precipitation of the proteins and part of genomic DNA. Later, by a precipitation with isopropanol, total RNA is obtained, which is finally totally rehydrated.



DANAGENE BACTERIA RNA Kit. Total RNA was isolated from different 1 ml cultures of bacterias using the DANAGENE BACTERIA Kit

Features:

- Fast and easy method for an effcient total RNA purification from bacteria.
- Safe method, as NO TOXIC reagents are used.
- It can process 100 bacteria samples of 1 ml.

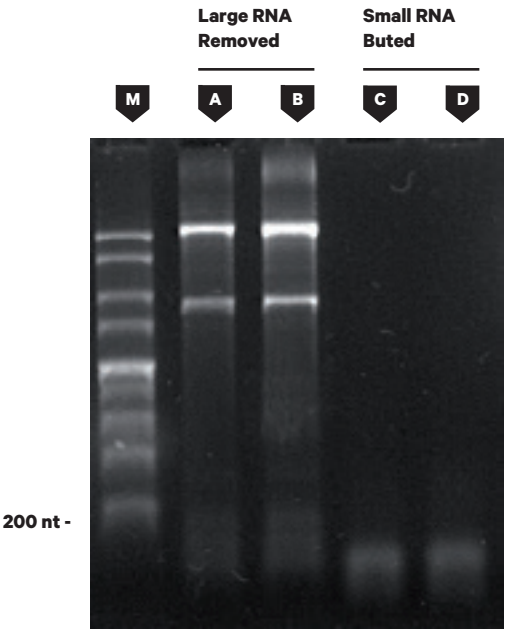
Product	Product Description	Preps
08014.1	DANAGENE BACTERIA RNA KIT	100
0804.2	DANAGENE BACTERIA RNA KIT	500

RNA PURIFICATION / microRNA

DANAGENE microRNA Kit

The **DANAGENE microRNA Kit** provides a quick and easy spin column system for purifying and enriching micro **RNAs (miRNAs) and other small cellular RNAs from a wide variety of tissue and cells.** Since miRNAs are vital for regulating gene expression, this kit is optimized for isolation of small RNA molecules while removing larger RNAs and minimizing genomic DNA contamination for improved sensitive downstream applications.

Most commercial RNA purification kits do not recover RNA molecules smaller than < 200 nucleotides, using an approach consisting of two sequential filtrations with different ethanol concentrations, **an RNA fraction highly enriched in RNA species < 200 nucleotides can be obtained with of DANAGENE microRNA Kit.**



Efficient fractitonation of the large from the small RNA species.
DANAGENE microRNA Kit was used to separate HeLa cell small RNA from the large RNA species. Samples were run on a formaldehyde-agarose gel to visualize the larger RNA species that are being removed.

Features:

- Efficient isolation of small RNA species using a 2 column process, resulting in minimal contamination of larger RNA and genomic DNA.
- RNA is isolated without the use of harmful chemicals as phenol or chloroform.
- Rapid protocol 25 minutes.
- Purified RNA can be used in a number of downstream applications incluiding real time PCR, reverse transcription PCR, Notehrn blotting, RNase protection and primer extension, and expression array assays

Applications:

- microRNA isolation from cultured cells and tissues.
- microRNA is ready for downstream applications such as RT-PCR, Northern Blotting, microarray analysis, chip hybridization

Product	Product Description	Preps
0805	DANAGENE microRNA Kit	50

RNA PURIFICATION / DNA REMOVAL

DANAGENE DNA REMOVAL Kit

The **DANAGENE DNA Removal Kit** provides a method for **removal of genomic DNA contamination in RNA preparations** using an approach consisting of two sequential filtrations with different MiroSpin columns

DNA, contaminating RNA preparations, can serve as a template in PCR to produce a false positive signal from RT-PCR. Although false positives are easily identified by looking at the outcome of a "minus-RT" control.

Features:

- Efficient removal genomic DNA from RNA preparations using a 2 column process.
- RNA is isolated without the use of harmful chemicals as phenol or chloroform.
- Rapid protocol 10 minutes.
- Purified RNA can be used in a number of downstream applications incluiding real time PCR, reverse transcription PCR, Notehrn blotting, RNase protection and primer extension, and expression array assays

Product	Product Description	Preps
0807	DANAGENE DNA Removal Kit	50

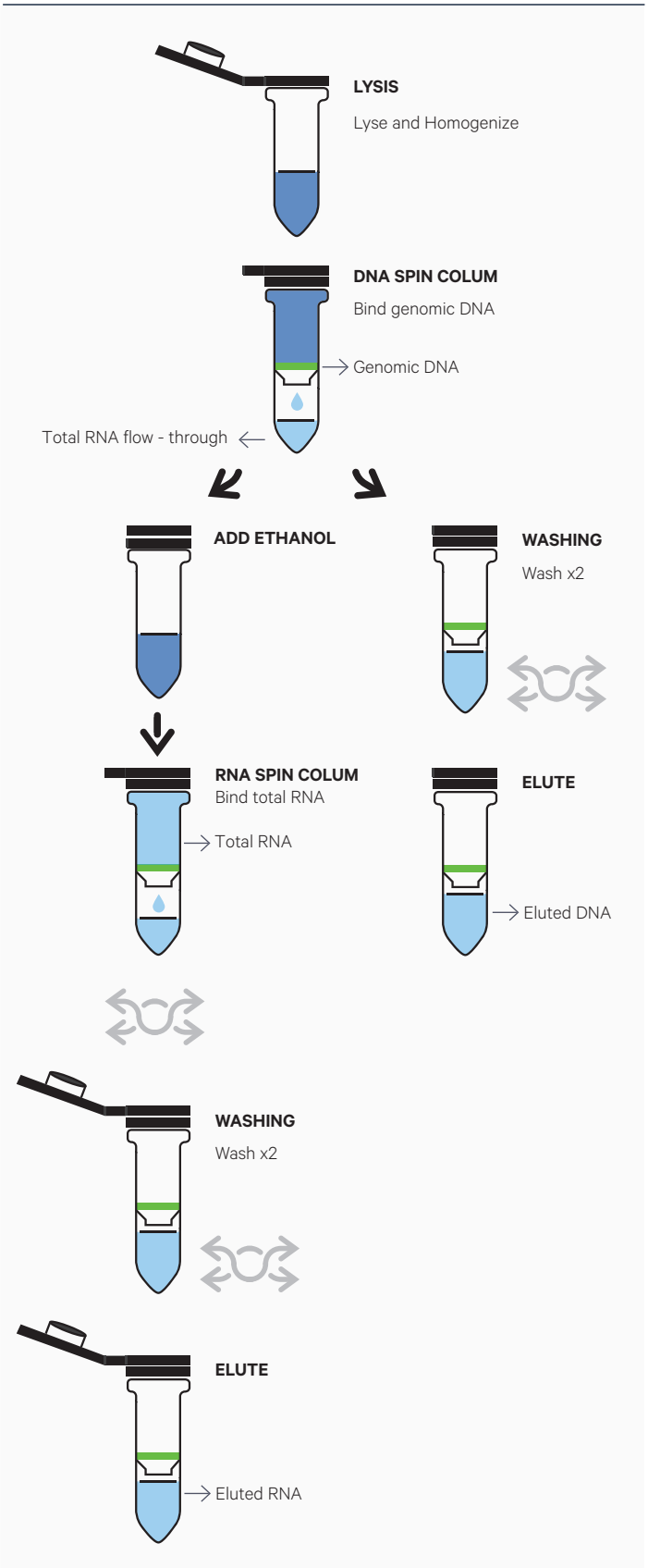
DNA / RNA PURIFICATION

DANAGENE DNA / RNA PURIFICATION Kit

DANAGENE DNA/RNA PURIFICATION Kit provides a rapid method for the isolation and purification **genomic DNA and total RNA simultaneously from a single sample** of cultured animal cells and small tissues samples.

The process involves first lysing the cells o tissue of the interest in a highly denaturing guanidine-isothiocyanate-containing buffer that will rapidly inactive RNases and DNases to ensure isolation of intact DNA and RNA. The lysate is then passed throuhg a DNA spin column, this column allows selective binding of genomic DNA. The column is washed and pure, ready-to-use DNA is the eluted.

Ethanol is added to the flow-through from the DNA spin column to provide appropriate binding conditions for RNA, and the sample is the applied to a RNA spin column, where total RNA binds to the membrane and contaminants are efficiently washed away, high-quality RNA is then eluted.



Features:

- High quality DNA and RNA from the same sample using DNA and RNA spin columns.
- Analysis will be more reliable since the RNA and DNA are derived from the same sample.
- DNA and RNA are isolated without the use of harmful chemicals as phenol or chloroform.
- Fast and rapid processing in less than 20 minutes.
- Ready-to-use DNA and RNA for any downstream analysis.

Applications:

- Rapid purification of total RNA, DNA, and protein from small and precious samples – no sample splitting for different isolations necessary

Product	Product Description	Preps
0808.1	DANAGENE DNA/ RNA PURIFICATIONKIT	50

DNA CLEAN-UP / PCR Clean-up

DANAGENE Clean-up PCR Kit

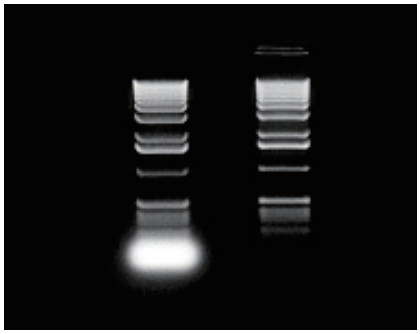
This kit is designed for the rapid purification of **PCR amplification products (100 bp to 10 kb)** from other components in the reaction, such as excess primers, nucleotides, DNA polymerase and salts.

Features:

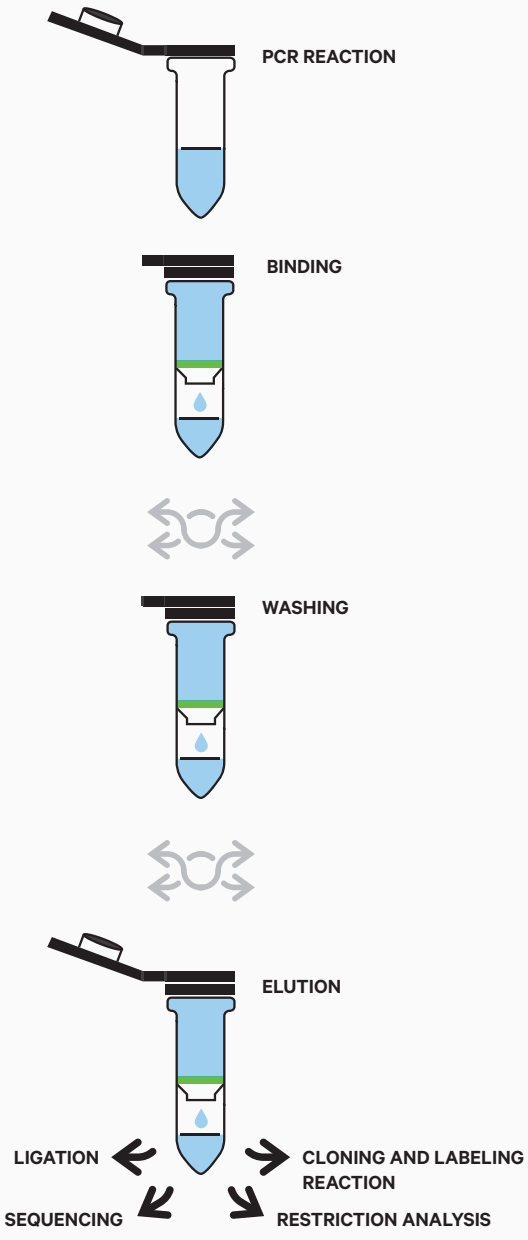
- Silica membrane technology.
- Purifies up to 100 ul or 10 ug of PCR amplified DNA in 8 minutes.
- High recovery even for small DNA fragments (> 100 pb).
- Reduced elution volume 25-30 µl.
- DNA precipitation is not necessary.
- Purified DNA can be used directly in other enzymatic reactions.

Product	Product Description	Preps
0501.1	DANAGENE Clean-up PCR Kit	50
0501.2	DANAGENE Clean-up PCR Kit	250
0501.3	DANAGENE Clean-up PCR Kit	1000

DNA is bound on a silica membrane within the spin column. The bound DNA is washed and the clean,concentrated DNA is eluted in a buffer.



Primer/dimer removal.
1Kb marker was contaminated with a excess of a 40 bp olygomer and a later purification with DANAGENE Clean-up PCR Kit.



DNA CLEAN-UP / GEL / PCR Clean-up

DANAGENE GEL / PCR Kit

This kit is designed for the rapid purification of highly pure DNA fragments **from agarose gels and aqueous solutions (desalination), and PCR amplification products** from other components in the reaction, such as excess primers, nucleotides, DNA polymerase and salts.

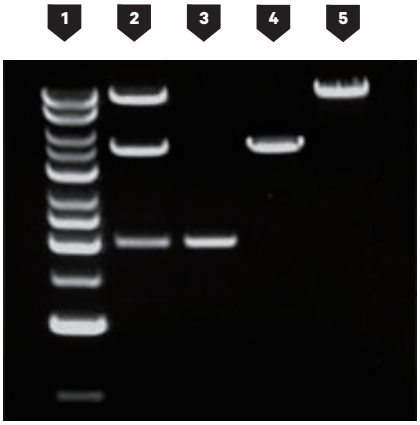
It includes a pH indicator which is premixed with the binding buffer to ensure optimal pH, facilitate DNA binding and allow for easy observation of undissolved agarose gel. If pH exceeds the optimal level (>7.5), the color of the solution will appear purple instead of yellow. 3M Sodium Acetate (pH5.0), which is included with the kit, can then be added to the solution to adjust pH and return the color to yellow.

Features:

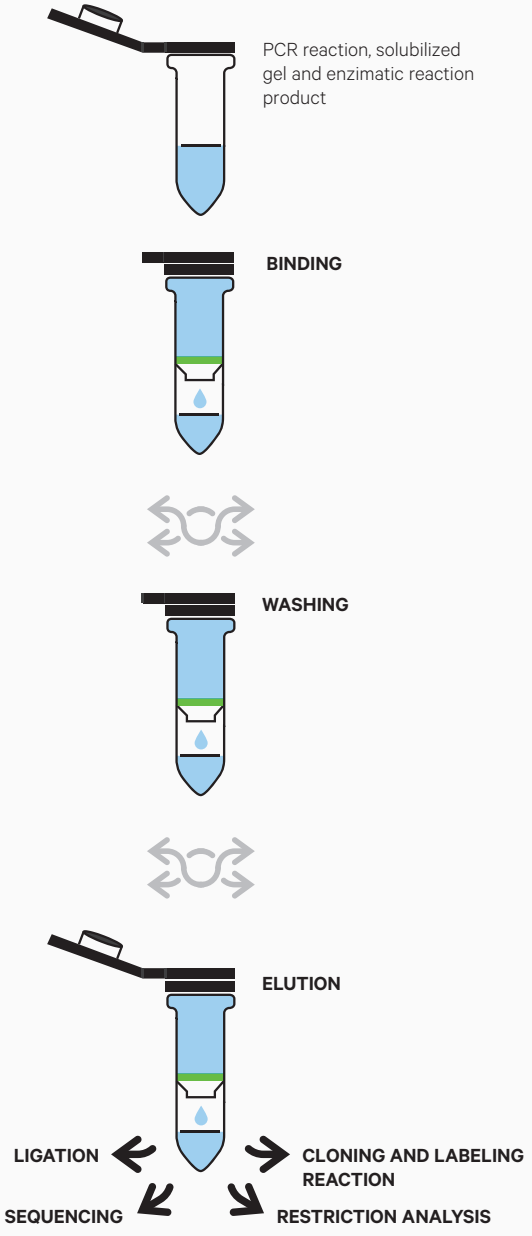
- Silica membrane technology.
- No organic solvents required.
- High recovery even for small DNA fragments (> 100 pb).
- Reduced elution volume 25-30 µl.
- DNA purification from either TAE or TBE agarose gel.
- Primer and primer/dimer removal.

DNA is bound on a silica membrane within the spin column. The bound DNA is washed and the clean,concentrated DNA is eluted in a buffer.

Product	Product Description	Preps
0502.1	DANAGENE GEL/PCR Kit	50
0502.2	DANAGENE GEL/PCR Kit	250
0502.3	DANAGENE GEL/PCR Kit	1000



DNA fragments excised from gel uand recovered using the DANAGENE GEL/PCR KIT.



DNA CLEAN-UP / Concentrator

DANAGENE CLEAN & CONCENTRATOR Kit

This kit provides a rapid method for purification and concentration of **high-quality DNA from PCR or enzymatic reactions with an extremely small elution volume of only 10 µl** using specials MicroSpin columns.

Low-elution column

Normal column

Features:

- The microspin columns are designed to allow elution in very small volumes (as little as 10 µl) delivering highly concentrated DNA in high yields.
- DNA Size Limits: From 100 pb to 23 Kb.
- DNA Recovery: up to 5 µg total DNA per column can be eluted into as little as 10 µl.
- The protocol is done in 2 minutes.
- Fast procedure and easy handling.
- Eluted DNA is well suited for use in DNA ligation, sequencing, labelling, PCR, etc.

Applications:

- **PCR products clean-up,** efficient desalting of DNA with the removal of DNA polymerases, primers and free dNTPs.
- **DNA clean-up from Enzymatic Reactions, including:** Desphosphorylation, Restriction enzyme digestion, Ligation, Primed synthesis, Endlabeling and Nick translation.
- **Isotope and Dye Removal,** efficiently removes unicorporated fluorescent (i.e., AMCA, FITC, BIO, DIG, Cy3, Cy5, FAM, etc) and radiolabeled dNTP derivats from DNA following in vitro labeling reactions.

Product	Product Description	Preps
0503.1	DANAGENE CLEAN & CONCENTRATION KIT	50
0503.2	DANAGENE CLEAN & CONCENTRATION KIT	250
0503.3	DANAGENE CLEAN & CONCENTRATION KIT	1000

PCR READY GENOMIC DNA

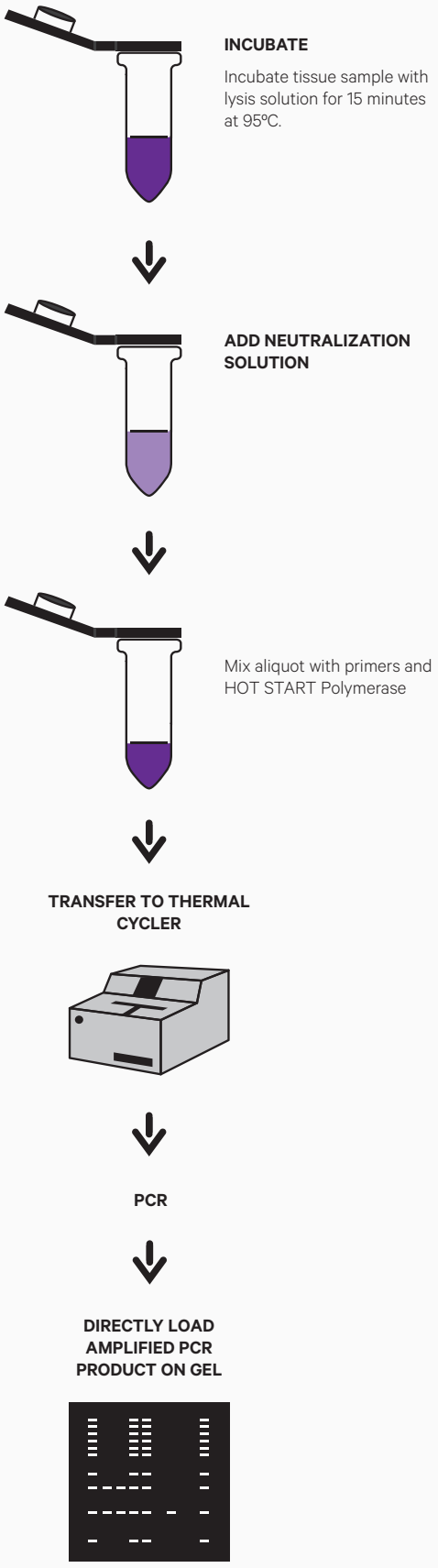
DANAGENE TURBO TISSUES & CELLS KIT

This kit allows the purification of **PCR-ready genomic DNA from tissue and animal cell samples, mouse tails, hair shafts and bacteria** in just 2 steps taking only 15 minutes.

Apart for the reagents for the extraction process, the kit includes a ready to use **HOT START Polymerase 2X** that allows the amplification of any fragment from the extract in an easy way as the customer only has to add water and primers. It requires 10 minutes activation step at 95ºC in order to remove non-specific products, such as primer-dimer. It also contains a red dye which allows an easy visualization and direct loading onto a gel avoiding the need of mixing with a loading buffer.

Features:

- It allows a fast isolation of genomic DNA ready for PCR in just 15 minutes.
- It allows to process a high number of samples for genotyping, SNP analysis, etc.
- Protocols for tissue and animal cells samples, mouse tail, hair and bacteria are supplied..
- It includes all necessary reagents for doing the total process, even a ready to use HOT START Polymerase.
- It can be automated.



Product	Product Description	Preps
1105	DANAGENE TURBO TISSUES & CELLS KIT	100

PCR READY GENOMIC DNA

DANAGENE TURBO BLOOD KIT

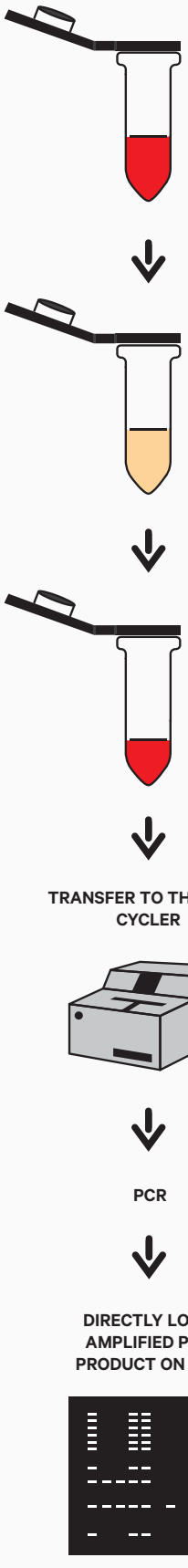
This kit allows the purification of **PCR-ready genomic DNA from blood** in just 2 steps taking only 5 minutes.

The protocol includes a 5 minutes incubation of 5 µl of blood with the lysis solution. This allows the DNA release, the neutralization solution is then added and the obtained extract can be directly used in PCR amplifications.

Apart for the reagents for the extraction process, the kit includes a ready to use **HOT START Polymerase 2X** that allows the amplification of any fragment from the extract in an easy way as the customer only has to add water and primers. It requires 10 minutes activation step at 95ºC in order to remove non-specific products, such as primer-dimer. It also contains a red dye which allows an easy visualization and direct loading onto a gel avoiding the need of mixing with a loading buffer.

Features:

- It allows a fast isolation of genomic DNA ready for PCR in just 5 minutes from 5 µl of blood or semen.
- Allows to process a high number of samples for genotyping, SNP analysis, human and animal identity tests, etc.
- It includes all necessary reagents for doing the total process, even a ready to use HOT START Polymerase.
- It can be automated.



Product	Product Description	Preps
1104	DANAGENE TURBO BLOOD Kit	100 preps

AUTOMATED NUCLEIC ACID PURIFICATION

Bioer GenePure Plus Nucleic Acid Purification System

Is a state of the art bench-top automated nucleic acid purification system that rapidly provides superior yield and purity of nucleic acids at an affordable price. The GenePure Plus system using unique magnetic bead separation technology is fully integrated with easy to use pre-packaged reagent kits providing superior nucleic acid purification results from a wide variety of bio-specimens.

Features:

- Suitable for automatic operation with less extraction time.
- Reduce cross contamination.
- High uniformity and good repeatability.
- Microscale sample extraction.
- Handle 32 samples for on time.
- No need of other instruments.
- Friendly software operation interface.

Applications:

- DNA purification
- RNA purification
- Virus DNA/RNA purification

For more information on the different kits and formats, **you can contact us directly.**

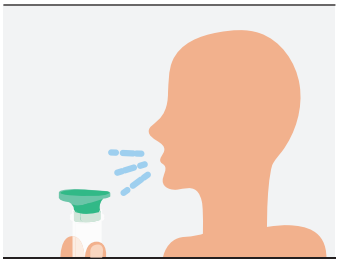
SAMPLE COLLECTION & STABILIZATION

DANASALIVA Sample Collection Kit

DANASALIVA Sample Collection Kit provide a safe and rapid all-in-one procedure for the collection, stabilization and transportation of **2 ml saliva samples at ambient temperature.**

Our system effectively stabilizes buccal cell and white blood cells found in saliva without breaking them over 1 year at room temperature.

Saliva samples are collected by spitting inside the **collection funnel** which has been assembled with the **collection tube**. After collecting 2 ml saliva the contents of **saliva preservation solution** are then added and mixed with the collected saliva. The saliva collection tube is sent to the laboratory for DNA isolation and analysis **using the DANAGENE SALIVA KIT.**



Features:

- Easy collection, transportation and processing.
- Painless, non-invasive collection.
- Samples can be mailed using the standard postal system.
- Compatible with most DNA isolation methods and can be automated.
- Sample remains stable for 1 year at room temperature, reducing transportation and storage costs.
- High quality DNA is suitable for sensitive downstream applications.

“ We can customize your product with your brand whitout any aditional cost.

“ Available in format CE-IVD for use in in vitro diagnostic with REAL Brand.

Product	Product Description	Units
0603.43	DANASALIVA Sample Collection Kit	1
0603.43100	DANASALIVA Sample Collection Kit	100
0603.43500	DANASALIVA Sample Collection Kit	500
0603.431000	DANASALIVA Sample Collection Kit	1000

Sponsored Paper

Application**Forum**

Purification of High-quality DNA from Saliva Samples with DANAGENE Saliva System applied to TargetSeq-NGS protocols

Alberto Acedo, AC-Gen Reading Life Inc, Valladolid, SPAIN acedo@acgen.es
David Navarro, DanaGen-BioTed S.L, Barcelona , SPAIN david@danagen.es

Introduction

DANAGEN-BIOTED S.L has developed a method for the collection, stabilization, transportation and purification of DNA from saliva samples using the DANASALIVA Sample Collection Kit, a cost-effective collection and transportation device that effectively stabilizes buccal cells and white blood cells found in saliva over 1 year at room temperature. Then, saliva DNA is isolated from the preserved saliva samples via DANAGENE Saliva Kit. Here, it is demonstrated the efficiency genomic DNA samples extracted with DANAGENE Saliva System to prepare a custom library (HC-Gen Test) designed by AC-Gen Reading Life Inc. for Hereditary Cancer Diagnostic (http://www.ac-gen.com/hereditary-cancer).

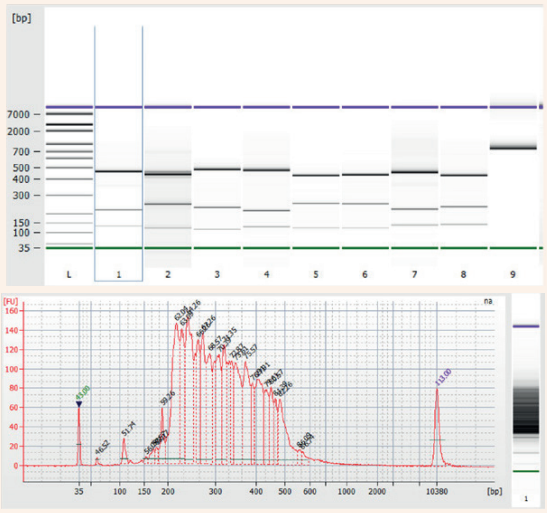
Materials and Methods

Genomic Isolation, DNA quality and quantification

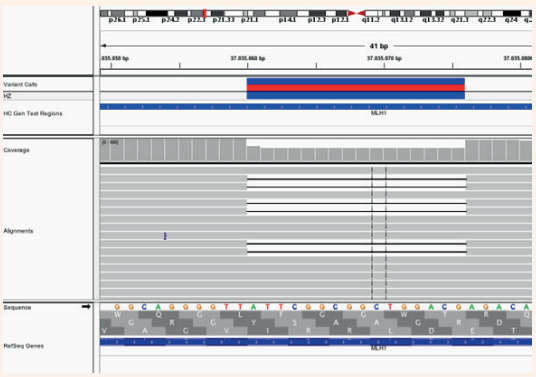
2ml saliva sample was collected using the DANASALIVA Sample Collection Kit from a hereditary colon cancer patient and gDNA was isolated from 600ul of saliva sample following DANAGENE Saliva Kit protocol. A fluorometry-based DNA method was used to accurately quantify DNA starting material. Size distribution of each DNA preparation was verified by gel electrophoresis and DNA purity was measured with a UV-Vis Spectrophotometer.

Library Target-Seq Preparation

gDNA sample was diluted to a final concentration of 5 ng/uL. 225ng of gDNA were digested in eight different restriction reactions, each containing two restriction enzymes. Restriction digestion reaction was validated by electrophoretic analysis of each sample. Then, all eight-digestion reactions corresponding to each DNA sample was transferred into appropriate tube. Next, biotinylated probes and barecode primers cassette were added and ligated. All interest target regions, corresponding with exonic regions of 37 genes related with Hereditary Cancer were captured using streptavidin-coated magnetic beads. Library was amplified and quantified for equimolar dilution. A pool of libraries were performed before proceeding to DNA sequencing with Ion PGM 200pb sequencing protocol using a 316V2 chip.



High sensitivity electrophoretic analysis showed a perfect restriction reaction for the eight combinations of restriction enzymes (Figure 1) and a correct library profile (Figure 2).



Variant calling of DNA sequences obtained in PGM system perfectly detected the frameshift mutation c.22_37del (p.I8Rdf*4) in MLH1 gene (Figure 3). This mutation had been previously analysed through Sanger sequencing for the same sample and it´s related with Lynch syndrome.

Results

DNA yield and quality from saliva sample purified using DANAGENE Saliva kit are shown in Table 1.

Gel electrophoresis performed to check gDNA integrity, didn't show smearing below 2,5kb, indicating no sample degradation

Conclusion

As when building a house, any good NGS experiment is founded in a proper starting material. In this paper it has been demonstrated the high quality of DANAGENE Saliva System kit for the isolation of gDNA applied to mutation screening of clinically important DNA variants with NGS technologies. DNA isolation from saliva samples it's a cost-effective method because samples can be collected directly for doctors without intervention of specially trained nurses and transported without special conservation requirements.

Table 1. DNA yield and purity from saliva sample

Saliva Sample	DNA Yield	Purity by absorbance 260/280	Purity by absorbance 260/230
600ul	20ug	1,85	1,92

SAMPLE COLLECTION & STABILIZATION

DANASWABS Sample Collection Kit

DANASWABS Sample Collection Kit provide a safe and rapid all-in-one procedure for the collection, stabilization and transportation of **saliva swab samples**. It contains a swabs + stabilizing buffer microtube.
We use Copan 4N6FLOQSwabsTM specifically designed and dedicated to DNA collection , this swabs are certified DNase, RNase-Free and Human DNA-Free, as well as free of any PCR inhibitors. And tested in our laboratory as the highest yielding DNA.

After collection there are 2 possibilities:

A. The swab is introduced in the cylindrical container for a safe transport of the sample to the laboratory for DNA extraction. In this case the stability of the swab is 1-2 weeks.
B . The swab is introduced into a microtube containing a preservation solution, thus the buccal cells can be transported and stabilized for 1 year at room temperature and indefinitely at -20 or -80.

Features:

- Unique swab matrix greatly improves DNA yields
- Painless, non-invasive collection.
- Easy to handle and quick to use.
- Compatible with most DNA isolation methods and can be automated.
- Sample remains stable for 1 year at room temperature.
- High quality DNA is suitable for sensitive downstream applications.

Applications:

- STR Analysis-Human identification.
- Genetics.
- Forensics.
- Paternity Tests.
- Research Genotyping.

“ We can customize your product with your brand whitout any aditional cost.

Product	Product Description	Units
0615.50	DANASWABS Sample collection kit	50
0615.100	DANASWABS Sample collection kit	100
0615.500	DANASWABS Sample collection kit	500
0615.1000	DANASWABS Sample collection kit	1000
0617.1	DANASWABS (Individual swabs with container)	1

Sponsored Paper

Application**Forum**

A method for preserving buccal swabs samples for gDNA integrity

David Navarro DanaGen-BioTed S.L, Barcelona, SPAIN david@danagen.es
Noelia S. Durán, Rebeca Álvarez Laboratorio de Medicina Molecular. Instituto de Medicina Oncológica y Molecular de Asturias (IMOMA), Oviedo, SPAIN

Introduction

The use of buccal swabs for non-invasive sample collection is well established. Samples can be stored for up to 2 weeks at 4°C before processing without a noticeable loss in DNA yield or quality. This storage condition is not often possible to apply immediately. If unprocessed samples are stored at room temperature, the bacteria and nucleases present in the buccal swabs will cause DNA degradation.

DANAGEN-BIOTED has developed a method using the DANASWABS Sample Collection Kit that contains a stabilizing buffer designed to completely stabilize the buccal cells from buccal swabs samples by inhibiting all enzymatic and microbial activity that occurs following any buccal sampling.

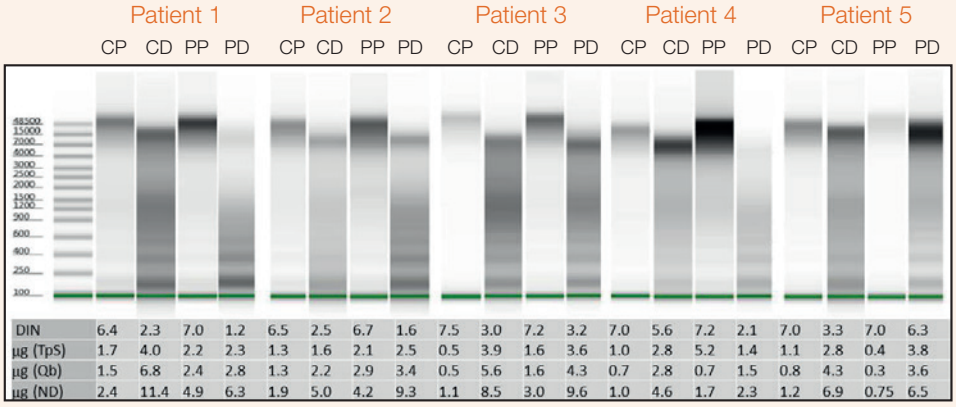


Fig. 1: CP: COPAN Swab, preserved ; CD: COPAN Swab, direct ; PP: PURITAN Swab, preserved ; PD: PURITAN swab, direct.

This system allows the release of the cells captured by the swab into a proprietary cell stabilizing buffer. Samples preserved with this system are stable for 1 year at room temperature so that they can be transported safely to the laboratory for processing.

Materials & Methods

Buccal cells samples were collected from 5 patients using our DANASWABS Sample Collection Kit. Two swabs from different brands previously evaluated as the best performers were used (data not shown).
4 samples were taken from each patient on different days and at the same time, 2 samples were preserved with our buffer and the other 2 unpreserved (one per swab type).
3 days after sampling, the samples were processed for DNA isolation following DANAGENE Swabs DNA Kit protocol and were analyzed using the Agilent 4200 TapeStation System.

Results

DNA yield, quality and integrity were tested using the Qubit (Qb),Nanodrop (ND) and TapeStation Instrument (TpS) respectively.

Conclusion

The gel image from TapeStation and quantifications with Qubit and Nanodrop show that the DNA yield of DNA isolations performed from unpreserved swabs is higher than from swabs preserved using our system, but while the DNA of unpreserved samples is extensively degraded, preserved samples exhibit DNA integrity. The TapeStation allows to calculate the DIN, a numerical assessment of gDNA integrity referred as the DNA integrity number (DIN

Better results are also obtained with preserved samples in quantitive PCR assays (data not shown).

In this paper it is demonstrated that the buccal cells are stabilized using our DANASWABS Sample collection Kit, with the structure and integrity of the DNA being fully maintained for further downstream processing applications.

BioTechniques 61:153 (September 2016) doi 10.2144/000114455

SAMPLE COLLECTION & STABILIZATION

DANAGENE PROTECT SOLUTION

DANAGENE Protect Solution is a non- toxic solution that **allows the collection and storage of cells and tissues in different conditions and protect and stabilize the genomic DNA and RNA for its following isolation.**

DANAGENE Protect Solution is a aqueous and nontoxic tissue-holding liquid, which can in situ stabilize and protect RNA under non-frozen situation by rapid infiltrating fresh tissues and not affect RNA yield and integrality. Hence, RNA Stabilization Solution eliminates inconveniences to flash freeze samples in liquid nitrogen or take samples from different places. When fresh tissues immerged into RNA Stabilization Solution, RNA can be stored up to a day at 37° C, a week at 25° C, a month at 4° C and a long term at -20° C or -80° C. RNA virus (such as HCV and HIV) is stable up to a month at 37° C in RNA Stabilization Solution.

The DANAGENE Protect Solution can be used for preserving animal tissue samples, cultured cells and bacteria.

Features:

- It removes the need of processing immediately the samples.
- The samples can be preserved for 2 weeks at room temperature (20-25ºC); 1 month at 4ºC and indefinitely at -20ºC or -80ºC.
- More flexibility as it simplifies the sample collection, it is not necessary to freeze samples in liquid N2 or in laboratory freezers.
- It is an alternative to the use of paraffin for protecting tissues.
- Allows the collection of samples in places that are out from the laboratories.
- It is compatible with the DANAGENE purifications kits.

Product	Product Description	Quantity
DPT100	DANAGENE Protect Solution	100 ml
DPT500	DANAGENE Protect Solution	500 ml

SAMPLE COLLECTION & STABILIZATION

DANASTOOL Sample Collection Kit Plus

DANAGEN-BIOTED has developed a complete system for processing samples of human or animal feces. **DANASTOOL Sample Collection Kit Plus** is an integrated system for collection, transportation and storage of stool samples and subsequent DNA purification. Transportation of the stabilized DNA can be carried out in the DNA Stabilization solution without refrigeration at ambient temperature. The purification kit is designed for DNA isolation from pathogenic microorganisms and from the host organism.

El DANASTOOL Sample Collection Kit enables collection, storage and stabilization of stool samples. It comes in a tube with spoon and liquid solution that preserves the stool.

- Easy to use, designated for collection and safe transportation because the samples become Not infectious.

- IIt is not necessary to process the samples immediately.
- IIt stabilizes the DNA for several months at room temperature and at -20 or -80 ° C indefinitely.
- IEliminate odor during processing.
- ICompatible with a variety of purification systems. **The use of our system is highly recommended.**

DANAGENE SPIN FOOD-STOOL Kit allows rapid and efficient purifi- cation of genomic DNA and microbial DNA from samples of fresh feces or preserved with our DANASTOOL Sample Collection Kit.

- Simple and fast processing using spin columns with silica mem-brane.
- Simultaneous extraction of microbial DNA and host DNA.
- Using phenol-chloroform and precipitation with ethanol is not necessary.Complete removal of contaminants and inhibi- tors for reliable downstream applications.
- Compatible with our system DANASTOOL Sample Collection Kit.

Product	Product Description	Preps
0617	DANASTOOL Sample Collection Kit	50 prefilled tubes
0618	DANASTOOL Sample Collection Kit	250 prefilled tubes
0617.50	DANASTOOL Sample Collection Kit PLUS	50 Prefilled tubes + 50 purifications
0617.250	DANASTOOL Sample Collection Kit PLUS	250 Prefilled tubes + 250 purifications

PURIFICATION CIRCULATING DNA

DANAGENE Circulating DNA

DANAGENE Circulating DNA Minikit provides a fast, reliable and convenient method to purify high quality, high purity and inhibitor-free **cell-free circulating DNA from fresh and frozen plasma / serum samples and other body fluids from samples of 1 ml** using a MicroSpin Columns specially developed to bind small fragments of DNA.

DANAGENE Circulating DNA Midikit provides a fast, reliable and convenient method to purify high quality, high purity and inhibitor-free **cell-free circulating DNA from fresh and frozen plasma / serum samples and other body fluids from samples of 3 ml** using a new column design for processing large volume sample volumes.

A specially formulated buffer system allows circulating DNA to bind to the MicroSpin columns.

Samples are lysed under denaturing conditions and then transferred to the DNA column where DNA binds and cellular debris, hemoglobin, and other proteins are washed away. High-quality DNA is eluted in nuclease-free water. Normally the circulating DNA is highly fragmented 50-1000 bp. The degree of fragmentation depends on several parameters such as the origin of DNA (fetal, tumor, microbial DNA), health blood donor, procedure blood collection, handling and storage of the sample.

Features:

- Efficient recovery and concentration of fragmented DNA (circulating cell-free DNA) with high input and low elution volume 30-35 µl.
- Sample size: Mini1 ml; Midi 3ml Midi fresh and frozen plasma/serum and other body fluids.
- No organic extraction or ethanol precipitation.
- Removal of contaminants and inhibitors.
- Yield: 0.1-100 ng / ml plasma or serum. Variable because each donor and disease status.
- Circulating DNA purified is ready for applications such PCR o real-time PCR, microarrays and Next generation sequencing.

New column design for processing large sample volumes.

Applications:

- Biomarker research and validation for blood-based cancer detection.
- Ideal for detection of biomarkers in different diseases like autoimmune diseases, infection diseases, stroke, sepsis, trauma and hematologic disorders.
- Analysis of fetal DNA from maternal plasma.

Product	Product Description	Preps
0614.1	DANAGENE CIRCULATING DNA MINI KIT (1 ml)	50
0614.21	DANAGENE CIRCULATING DNA MIDI KIT (3 ml)	5
0614.2	DANAGENE CIRCULATING DNA MIDI KIT (3 ml)	50

Sponsored Paper

ApplicationForum

Purification and quantification of circulating cell-free DNA from body fluids with DANAGENE Circulating System applied to Liquid Biopsy

David Navarro, DanaGen-BioTed S.L, Barcelona, SPAIN david@danagen.es, *A.Navarro, A. Martinez-Murcia,* Genetic PCR Solutions™, Alicante, Spain , *Adriana Lasa,* Hospital de Sant Pau I de la Santa Creu, Barcelona, SPAIN

Introduction

The phenomenon of increased concentrations of circulating cell-free DNA (cfDNA) is considered a hallmark of various pathological conditions like cancer, autoimmune diseases, infectious diseases, stroke , sepsis, trauma and pregnancy.

Quantification of plasma cfDNA has been proposed as a diagnostic tool for cancer. The quantity of cfDNA is generally very low in healthy subjects (less than 5ng/ml of plasma) and increases (8 to 10 times) when considering subjects affected by a neoplastic disease, as well as in some physiological conditions.

Therefore, the development of reproducible, standaridzed methods for the detection and quantification of cfDNA is important for improving the sensitivity, specifity and relevance of this biomarker.

The isolation and quantification of cfDNA from body fluids represents a challenge, due to their small quantity and fragmented nature.

DANAGEN-BIOTED has developed a system for isolation of cfDNA for samples of 1 or 3 ml from body fluids using Midi Spin columns with a special resins that bound cfDNA.

Sample	Ct	Copies on assay	Sample concentration (copies/ul)
1	22.34	6.8E+04	1.4E+04
2	21.18	1.4E+05	2.8E+04
3	20.67	2.0E+05	4.0E+04
4	22.21	7.4E+04	1.5E+04
5	22.43	6.4E+04	1.3E+04
6	20.82	1.8E+05	3.6E+04
7	23.30	3.6E+04	7.2E+03
8	21.33	1.3E+05	2.6E+04
9	26.31	5.0E+03	1.0E+03
10	28.46	1.2E+03	2.4E+02
11	20.78	1.9E+05	3.8E+04
12	19.47	4.5E+05	9.0E+04

Table 1. Quantification of cfDNA from plasma samples

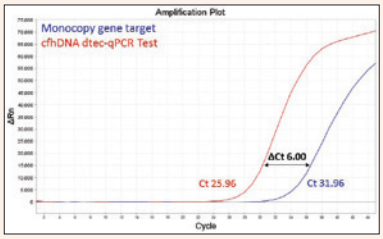


Figure 1. Real-time PCR amplification plot for cfhDNA dtec-qPCR Test (red) targeting a "non-truncated" multi-copy gene and compared to a monocopy target (blue), using a human genomic DNA as a standard. Due to the presence of multiple copies of the selected target, sensibility is increased 2 logs (100 times) for the cfhDNA dtec-qPCR Test. Same increased signal is observed for the purified cell-free DNA samples employed for cell-free DNA quantification.

Materials and Methods

Circulating Cell-Free DNA Isolation

Blood samples were collected from 8 patients (samples 1 to 8) with breast cancer and healthy controls.

2 samples were used for healthy individuals (sample 9 and 10) and 2 samples of healthy individuals were spiked with 150 ng (sample 11) and 300 ng (sample 12) of human genomic DNA. Plasma was carefully separated and stored at -80ºC. The stored plasma was thawed at room temperature and centrifuged at 15.000 x g to remove residual precipitated cellular components.

Circulating cell-free DNA was extracted from 3 ml of plasma following **DANAGENE Circulating DNA Kit** protocol.

Quantification of Circulating Cell-Free DNA

It was quantified the total amount of cf DNA isolated using the **Cell-free human (cfh) DNA dtec-qPCR Test** developed by Genetic PCR Solutions™ (Alicante, Spain). The cfhDNA dtec-qPCR Test was designed to target a conserve sequence region of a gene repeated more than a hundred times in the human genome. qPCR, total volume of 20 ul qPCR mixture was prepared by adding 4 ul of MixStable qPCR.5x (GPSTM, Spain), 10 ul of nuclease free water, 1 ul of the primers/probe reagent (reagents included in the kit), and 5 ul of purified samples, following the instructions of the manufacturer. The real-time PCR thermal protocol used for amplification of the target gene, as recommended by the manufacturer, was: activation step at 95 ºC for 15 minutes, followed by 40 cycles of denaturation at 95 ºC for 15 seconds and annealing/extension at 60 ºC for 60 seconds. Data collection was performed during annealing/extension step by using the FAM channel.

Results

cfDNA were quantified by realtime PCR. The measured threshold cycle (Ct) and copies are listed in Table1. We successfully detected cfDNA in all cancer patients. Our results are consistent with others, and have shown that cfDNA can be detected in subjects with cancer.

Conclusion

The quantitative analysis of plasma DNA may be useful in distinguishing patients with cancer from healthy individuals.

In this paper, has been demonstrated the sensitivity in the quantification of cfDNA from plasma using DANAGENE Circulating DNA kit and Cell free human DNA dtec-qPCR Test.

This method will also be beneficial for isolating cfDNA in other pathological conditions. ctDNA collected without percutaneous tumor biopsy, also known as Liquid Biopsy, can become an innovative tool to analyze the cancer genome with obvious clinical importance for personalized treatment of cancer.

BioTechniques 60:212 (April 2016) doi 10.2144/000114410

miRNA and Cell-Free RNA

DANAGENE microRNA and Cell-free RNA Minikit / MidiKit

DANAGENE microRNA and Cell-free RNA Minikit/MidiKit provides an efficient isolation of microRNA and small RNA from liquid biopsies including serum, plasma and others biofluids without the use of toxic phenol or chloroform.

This kit allows to isolate all RNAs smaller than 1000 nt, from mRNA and tRNA down to microRNA and small interfering RNA (siRNA).

The sample material is denatured in Lysis buffer. Proteins are precipitated using the precipitation buffer and pelleted by centrifugation. After removal of proteins the binding conditions are adjusted by adding a **special Binding buffer** for small RNA.

The small RNA are bound to special columns. The remaining RNAs are washed and eluted with minimal amounts of RNase-free water.

Features:

- Efficient isolation of microRNA and Cell-free rna from biofluids samples without phenol/chloroform .
- Sample size: Mini 300 µl (up to 600 µl multiple loading); Midi 3 ml fresh and frozen plasma/serum and other body fluids.
- Simple and fast procedure.
- Increased sensitivity in downstream applications .
- Yield: Depending on sample source, storage and quality.

Applications:

- Ideal for detection of biomarkers in cancer and others diseases.
- Typical downstream applications: real-time qRT-PCR. Chip hybridisations.

New column design for processing large sample volumes.

“ Superior RNA isolation from Biofluids

Product	Product Description	Preps
0806.1	DANAGENE microRNA and Cell-free RNA MINI KIT	50
0806.2	DANAGENE microRNA and Cell-free RNA MIDI KIT	5
0806.3	DANAGENE microRNA and Cell-free RNA MIDI KIT	50

Sponsored Paper

ApplicationForum

A system for miRNAs and cell-free RNA isolation from body fluids

Ana Carrasco and Eduard Gallardo, *Neuromuscular Diseases Unit, Neurology Department, Hospital de la Santa Creu I Sant Pau, Universitat Autònoma de Barcelona, Institut de Recerca Sant Pau, (Barcelona) and Biomedical Network Research Centre on Rare Diseases (CIBERER), Spain.*

David Navarro, *DanaGen-BioTed S.L, Barcelona, SPAIN david@danagen.es*

Introduction

miRNAs are small non-coding RNAs about 21–25 nucleotides in length. They are involved in RNA silencing and post-transcriptional regulation of gene expression and they have been found altered in the progression of different diseases. These molecules are found in most body fluids among them plasma and serum.

We quantified three different microRNAs. miR-223-3p has been detected in different experiments in our laboratory and is expressed in control samples at low CT values (around 20). miR-23a-3p and miR-451 are used to monitor sample hemolysis. miR-23a-3p CT value minus miR-451 CT value must be lower than 7 otherwise it is recommended not to use the sample.

DANAGEN-BIOTED has developed a system for isolation of microRNAs and cell-free RNA (cfRNA) for 300 µl (up to 600 µl multiple loading) of plasma or serum using Spin columns that bound RNA with <1000 nucleotides. The aim of the study was to compare different methods of microRNAs isolation.

Material and Methods

microRNA isolation

The plasma sample was collected from each patient and miRNAs were isolated using 4 different protocols: from 300 µl of sample with DANAGENE microRNA and Cell-free RNA Kit with and without carrier (MS2 RNA, Roche) and 200 or 300 µl of sample using a competitor kit and carrier MS2 .

Universal reverse transcription and real-time PCR amplification

We use the miRCURY LNA™ Universal RT microRNA PCR (EXIQON). This protocol is based on universal reverse transcription (RT) followed by real-time PCR amplification using SYBR-Green. We used LNA™ enhanced primers specific for the three microRNAs. All reactions were performed in triplicate using a 7900HT device from Applied Biosystems.

Results

microRNAs were quantified by real-time PCR. The mean of the three threshold cycles (Ct) in each condition are shown in Figure 1. For all the miRNAs tested the Ct value was lower with the DANAGEN kit using the same sample volume. Ct values using the DANAGEN kit improved when a carrier was added to the sample.

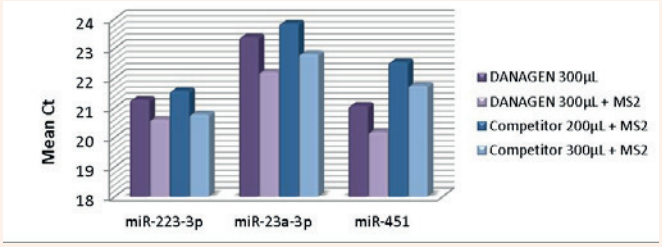


Figure 1. Mean Ct of 3 different reactions in each condition: Danagen kit w/o MS2 (300µl), Danagen kit w/ MS2 (300µl), competitor's kit w/ MS2 (200µl and 300µl)

Conclusion

This quantitative analysis of plasma miRNAs shows better results using DANAGENE microRNA and Cell-free RNA Kit. The results are further improved when using a carrier (MS2).

In this paper we demonstrate that our kit can be used for an efficient isolation of small RNA from body fluids, useful for investigating miRNAs and cell-free RNA as circulating biomarkers for cancer and others diseases.

BioTechniques 62:39 (January 2017) doi 10.2144/000114495

QUANTIFICATION CIRCULATING DNA

Quantification of cfDNA

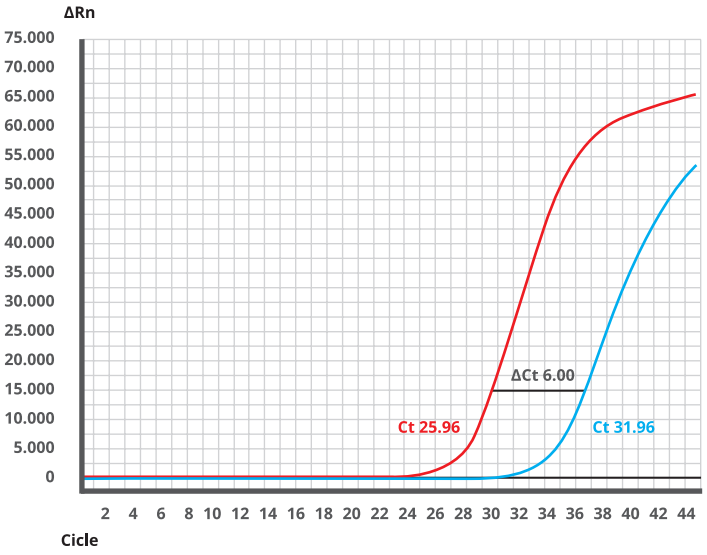
Quantification of cfDNA is ideally carried out by qPCR or capillary electrophoresis since common methods such as absorption measurement or fluorescent dye based quantification might lead
to false results due to low DNA concentration.

The total cf DNA isolated can be quantified using the **Cell-free human DNA detc-qPCR Test** designed to target a conserve sequence region of a gene repeated more than a hundred times in the human genome.

Are individuals ready-to-use tubes containing all the components needed to perform the quantitative PCR assay.

Real-time PCR amplification plot

Real-time PCR amplification plot for cfhDNA dtec-qPCR Test (red) targeting a “non-truncated” multi-copy gene and compared to a monocopy target (blue), using a human genomic DNA as a standard. Due to the presence of multiple copies of the selected target, sensibility is increased 2 logs (100 times) for the cfhDNA dtec-qPCR Test. Same increased signal is observed for the purified cell-free DNA samples employed for cell-free DNA quantification.



Quantification of cf-DNA from plasma

Quantification of cf-DNA from plasma Blood samples were collected from 8 patients (samples 1 to 8) with breast cancer and healthy controls. 2 samples were used for healthy individuals (sample 9 and 10) and 2 samples of healthy individuals were spiked with 150 ng (sample 11) and 300 ng (sample 12) of human genomic DNA.

Circulating cell-free DNA was extracted from 3 ml of plasma following **DANAGENE Circulating DNA Kit** protocol and quantified using the **Cell-free human DNA detc-qPCR Test.**

We successfully detected increased concentrations of circulating cell free-DNA in all cancer patients.

Sample	Ct	Copiesnon asay	Sample Concentration (copies/ul)
1	22.34	6.38+04	1,4E+04
2	21.18	1.4E+05	2.8E+04
3	20.67	2.0E+05	4.0E+04
4	22.21	7.4E+04	1.5E+04
5	22.43	6.4E+04	1.3E+04
6	20.82	1.8E+05	3.6E+04
7	23.30	3.6E+04	7.2E+03
8	21.33	1.3E+05	2.6E+04
9	26.31	5.0E+03	1.0E+03
10	28.46	1.2E+03	1.4E+02
11	20.78	1.9E+05	3.8E+04
12	19.47	4.5E+05	9.0E+04

Product	Product Description	Preps
cfhDNA-24	cfhDNA MONODOSE detc-qPCR Test	24
cfhDNA-48	cfhDNA MONODOSE detc-qPCR Test	48
cfhDNA-96	cfhDNA MONODOSE detc-qPCR Test	96

SEQUENCING / CLEAN-UP

DANAGENESPIN Sequencing Reaction Clean-up

The DANAGENESPIN Sequencing reaction clean-up is designed for fast and efficient **removal of unincorporated dye terminators from sequencing reactions using a simple spin column procedure**.

The procedure uses gel filtration to quickly and efficiently remove unincorporated terminators from sequencing reactions. Removal of dye terminators is important to prevent the unincorporated dye terminators from interfering with analysis of sequencing results.

The DANAGENESPIN utilizes a fully hydrated gel filtration matrix that provides for a convenient and simple method of dye terminator removal for sequencing cleanup. When sequencing reaction mixtures are applied to DANAGENESPIN, dye terminators diffuse into the pores and are retained in the gel-filtration material, while labeled DNA fragments are excluded and recovered in the flow-through.

Features:

- Ready-to-use prehydrated gel-filtration material.
- Fast spin column procedure with only two short centrifugation steps.
- Binding capacity: 10-75 µl.
- 98% removal dye terminators.
- 95% Recovery >22pb

Product	Product Description	Preps
DTR50	DANAGENESPIN Sequencing Reaction Clean-up	50
DTR1000	DANAGENESPIN Sequencing Reaction Clean-up	1000

NUCLEIC ACID GEL ELECTROPHORESIS

AGAROSE

Agarose suitable for routine analysis of nucleic acids when using standard electrophoretic techniques.

Features:

- High resolving capacity over a wide range of fragments.
- Standard gelling-melting temperatures.
- Low background and high resolution.
- High gel strength means easy handling of gels and compatibility with blotting techniques.
- Safe for the environmental solvent free.

10X TAE

10X TAE Buffer is a sterile-filtered solution of 400 mM Tris-acetate and 10 mM EDTA. Box. A 1X TAE Buffer solution contains 40 mM Tris-acetate and 1 mM EDTA at pH 8.3.

Features:

- Convenient, ready-to-use solution for electrophoresis.
- It is supplied in 1 L plastic bottles or in a 3 L stackable.
- High purity; free from contaminants.
- Save time and standardize gel runs.

10X TBE

10X TBE Buffer is a sterile-filtered solution of 1 M Tris, 0.9 M boric acid, and 0.01 M EDTA used to prepare 1X buffer for polyacrylamide and agarose gel electrophoresis.

Features:

- Convenient, ready-to-use solution for electrophoresis.
- It is supplied in 1 L plastic bottles or in a 3 L stackable.
- High purity; free from contaminants.
- Save time and standardize gel runs.

Product	Product Description	Quantity
Danagarose100	DANAGAROSE POWDER	100 gr
Danagarose500	DANAGAROSE POWDER	500 gr
TAE1L	10X TAE	1 liter
TAE3L	10X TAE	3 liters
TBE1L	10X TBE	1 liter
TBE3L	10X TBE	3 liters

NUCLEIC ACID GEL ELECTROPHORESIS

GELSAFE Nucleic Acid Gel Stain

GELSAFE Nucleic Acid Gel Stain Solution (20,000x) is a new and safe nucleic acid stain, an alternative to the traditional ethidium bromide(EtBr) stain for detecting nucleic acid in agarose gels.

It emits green fluorescence when bound to DNA or RNA. This new stain has two fluorescence excitation maxima when bound to nucleic acid, one centered at 309 nm and another at 419 nm. In addition, it has one visible excitation at 514 nm. The fluorescence emission of GELLSAFE bound to DNA is centered at 537 nm.

The staining protocol for GELSAFE Nucleic Acid Staining Solution (20,000x) is similar to that for EtBr. Compared to EtBr, known as a strong mutagen, REALSAFE Nucleic Acid Staining Solution (20,000x) causes much fewer mutations in the Ames test. In addition, GELSAFE Nucleic Acid Staining Solution (20,000x) has a negative result in mouse marrow chromophilous erythrocyte micronucleus test and mouse spermatocyte chromosomal aberration test.

Features:

- Used for detecting DNA and RNA.
- Alternative to the ethidium bromide staining.
- As sensitibe as EtBr or more sensitive than that.
- Non-toxic, non-mutagenic and non-carcinogenic.
- No hazard waste.

Applications:

- Visualization of DNA and RNA bands as they separate during agarose gel electrophoresis.
- Isolation of DNA fragments for subcloning without introducing mutations normally cause by EtBr.

Product	Product Description	Quantuty
GELSAFE	GELSAFE Nucleic Acid Gel Stain Solution	1 ml

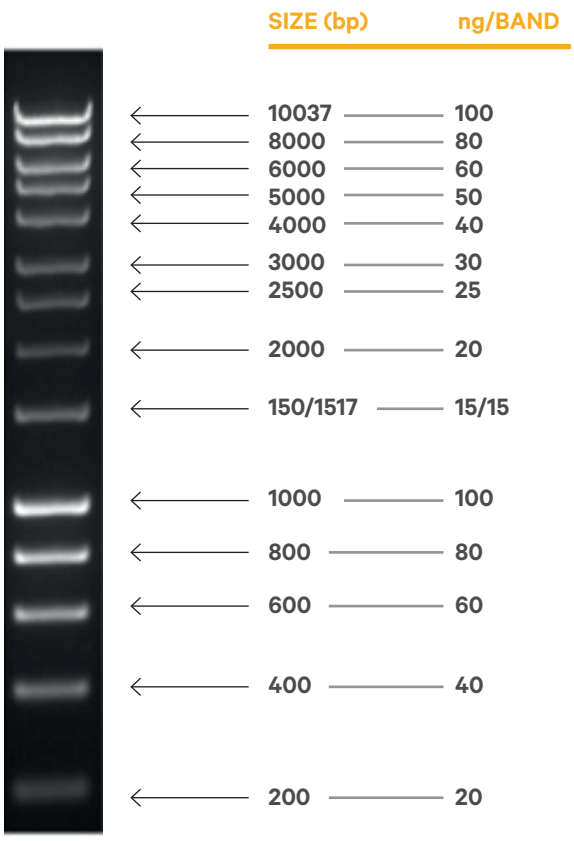
NUCLEIC ACID GEL ELECTROPHORESIS

DANAMARKER BEETHOVEN

DANAMARKER BEEETHOVEN is a ready-to-use molecular weight marker, especially designed for easy size determination. This ready-to-use format reduces handling steps and saves time; simply transfer marker from the vial to the gel.

Features:

- **Easy size determination:** 14 bands from 200bp – 10.037bp.
- **Contains dye:** For direct gel loading.
- **Several higher intensity bands:** For easy orientation.
- **Easy storage:** Stable for 6 months at room temperature.

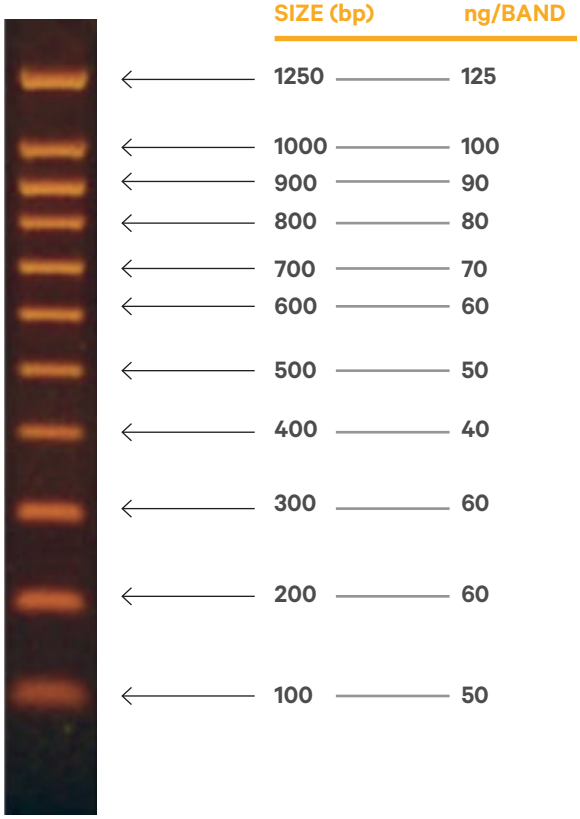


DANAMARKER SHUMANN

DANAMARKER SHUMANN is a ready-to-use molecular weight marker, especially designed for easy size determination. This ready-to-use format reduces handling steps and saves time; simply transfer marker from the vial to the gel.

Features:

- **Easy size determination:** 11 bands from 100bp – 1.250 bp.
- **Contains dye:** For direct gel loading.
- **Several higher intensity bands:** For easy orientation.
- **Easy storage:** Stable for 6 months at room temperature.



Product	Product Description	Quantity
0405	DANAMARKER BEETHOVEN	1 ml
0406	DANAMARKER SHUMANN	1 ml

NUCLEIC ACID GEL ELECTROPHORESIS

DANAGENE ELECTROPHORESIS REAGENT KIT

It contains all necessary reagents for making 100 complete electrophoresis (agarose tablets, 50X TAE*, DNA loading buffer) and the DNA visualization with the GELSAFE Nucleic Acid Gel Stain (non-toxic DNA stain). For 10×7 cm o 10×10 cm gels.

Components

DANAGAROSE TABLETS	100 pcs for 100 gels
GELSAFE Nucleic Acid Gel Stain	250 µl for at least 100 gels
50X TAE	100 ml 50XTAE for 5 liters 1X TAE
DNA loading buffer	5 ml

**El 50X TAE suministrado es para preparar 100 geles 10x7 cm o 10x10 cm), no para ser utilizado como tampón para correr el gel.*

GELSAFE Nucleic Acid Gel Stain

- Used for detecting DNA and RNA.
- Alternative to the ethidium bromide staining.
- As sensitive as EtBr or more sensitive than that.
- Non-toxic, non-mutagenic and non-carcinogenic.
- No hazard waste.

DANAGAROSE TABLETS

- Pre-weighted tablet, no weighing required.
- Fast dissolving.
- Made with high purity agarose for multi-purpose.
- Blister packaging allow for full portability and easy dispensing.
- < 1min. safe hands-on time.

Product	Product Description	Quantuty
ELECKIT	DANAGENE ELECTROPHORESIS REAGENT KIT	100 electrophoresis

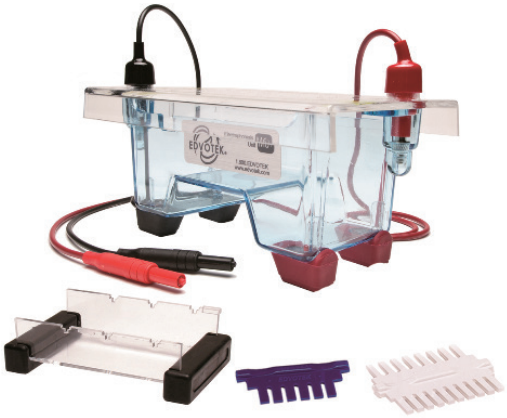
NUCLEIC ACID GEL ELECTROPHORESIS

ELECTROPHORESIS CHAMBERS

M6Plus Electrophoresis Apparatus

M6Plus Electrophoresis Apparatus Includes:

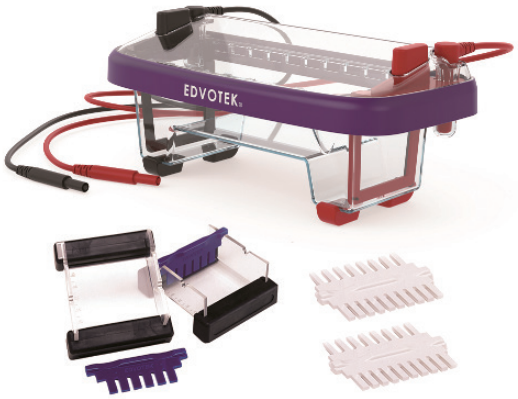
- (1) 7 x 10 cm Gel Tray
- (1) 6 Tooth Comb
- (1) 8/10 Tooth Comb
- (2) Rubber End Caps



M12 Dual Electrophoresis Apparatus

M12 Dual Electrophoresis Apparatus Includes:

- (2) 7 x 7 cm Gel Trays
- (2) 6 Tooth Combs
- (2) 8/10 Tooth Combs
- (4) Rubber End Caps

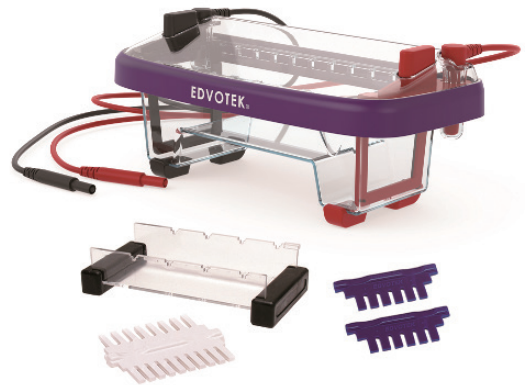


M12 Electrophoresis Apparatus

Runs up to two gels at the same time or use for longer gel runs (eg for PCR).

M12 Electrophoresis Apparatus Includes:

- (1) 7 x 14 cm Gel Tray
- (2) 6 Tooth Combs
- (1) 8/10 Tooth Comb
- (2) Rubber End Caps



TetraSource™ 300 Power Supply

Power unit fully programmable interface for setting voltage, current or timer control with each parameter displayed in real-time. Programs may be paused or resumed at any point. Run experiments in the least time possible with this powerful and versatile unit

Product	Product Description	Quantity
500	M6Plus Electrophoresis Apparatus	1 unit
502	M12 Electrophoresis pparatus	1 unit
504	M12 Dual Electrophoresis Apparatus	1 unit
5010	TetraSource™ 300 Power Supply	1 unit

Product	Product Description	Quantity
504	M12 Dual Electrophoresis Apparatus	1 unit
5010	TetraSource™ 300 Power Supply	1 unit

DANAGEN-BIOTED S.L
Av. Llenguadoc, 53,
2ª planta
08915 · Badalona
SPAIN

620 876 118
Info@danagen.es

www.danagen.es