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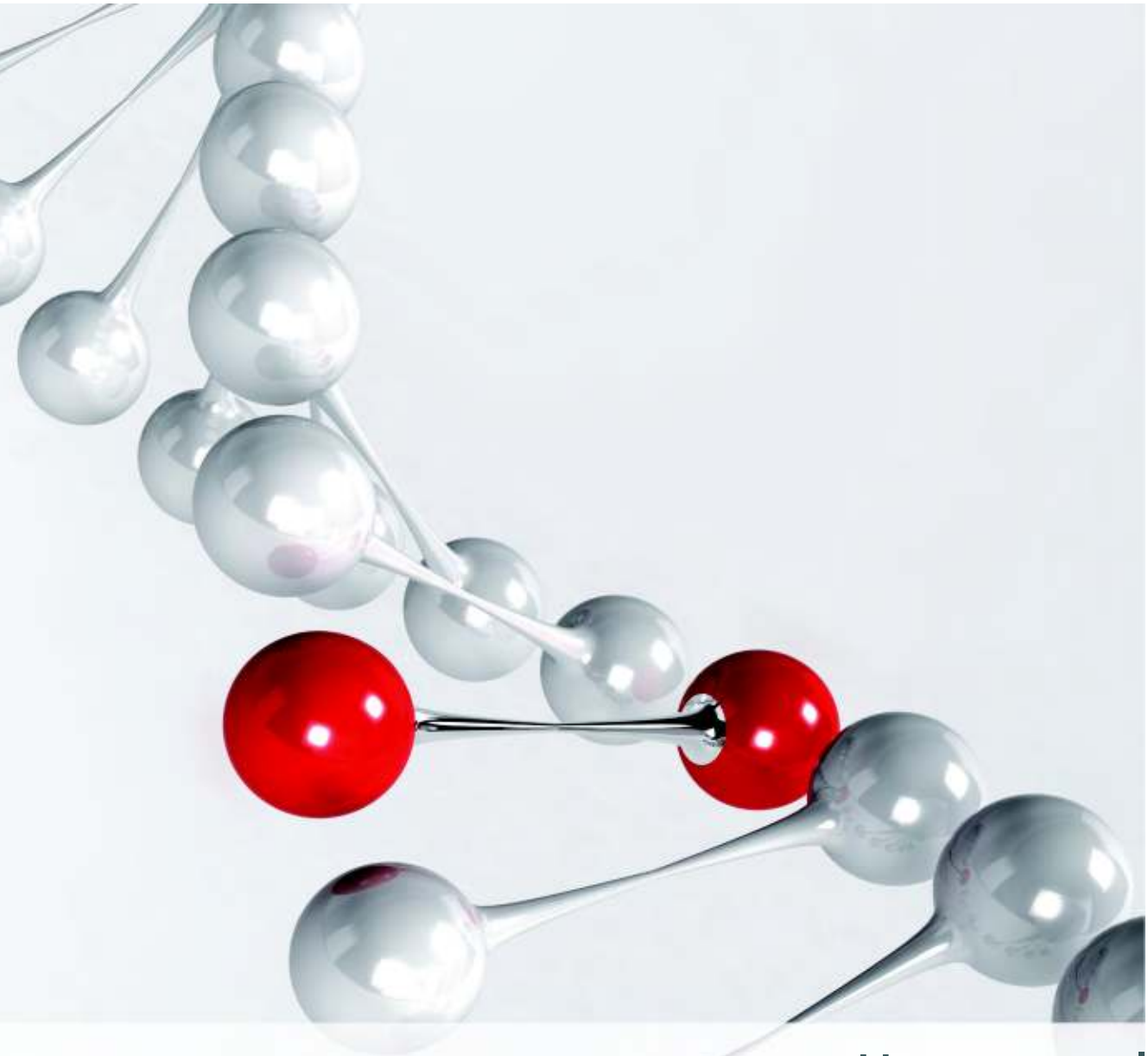


User manual
Invisorb® Spin Plant Mini Kit

For genomic DNA purification from up to 100 mg wet and up to 60 mg of dried plant materia lfrom a wide variety of plant species as well as from food samples of plant origin

REF 1037100x00 STRATEC Molecular GmbH, D-13125 Berlin

Instruction for the Invisorb® Spin Plant Mini Kit

The **Invisorb® Spin Plant Mini Kit** has been designed for isolation and purification of total DNA from a wide variety of plant species (fresh, frozen or dried plant material, for instance leaves, roots, fruits or seeds) and also from a wide variety of food sample from plant origin (fresh, frozen or dried material).

The DNA extraction and purification chemistry was intensely tested and validated.

The **Invisorb® Spin Plant Mini Kit** is intended for life science research use only. Prior to using it for other purposes, the user must validate the system in compliance with the applicable law, directives, and regulations.

The kit is neither suitable for isolation of RNA from plant material and food sample from plant origin, as for DNA isolation from cultured or isolated cells, tissue samples or blood samples. Simultaneously isolation of bacterial DNA or DNA from fungi and parasites is not validated.

Contents

Kit contents of the Invisorb® Spin Plant Mini Kit

Store dissolved Proteinase K at –20°C!
Store all other kit components at room temperature (RT)!

	5 DNA preps	50 DNA preps	250 DNA preps
Catalogue No.	1037100100	1037100200	1037100300
Lysis Buffer P	2 x 2 ml	30 ml	120 ml
Binding Buffer A	2 x 1 ml (ready to use)	4 ml (final volume 15 ml)	2 x 9 ml (final volume 2 x 30 ml)
Proteinase K	for 250 µl working solution	for 1 ml working solution	for 5 x 1 ml working solution
Wash Buffer I	15 ml (ready to use)	30 ml (final volume 60 ml)	80 ml (final volume 160 ml)
Wash Buffer II	15 ml (ready to use)	18 ml (final volume 60 ml)	2 x 45 ml (final volume 2 x 150 ml)
Elution Buffer	2 ml	15 ml	60 ml
Prefilter	5	50	5 x 50
Spin Filter	5	50	5 x 50
2.0 ml Receiver Tubes	10	2 x 50	10 x 50
1.5 ml Receiver Tubes	5	50	5 x 50
Manual	1	1	1
Initial steps	Add 250 µl dd H_2O to the tube **Proteinase K**, mix thoroughly and store the tube at -20°C ! Incubate the needed amount of **Elution Buffer** at 65°C in a Thermomixer.	Add 11 ml 99.7% Isopropanol to the **Binding Buffer A.** Mix by intensive shaking by inverting for 1 min.. Shortly before use mix by inverting several times. Add 30 ml of 96-100% Ethanol to the bottle **Wash Buffer I.** Add 42 ml of 96-100% Ethanol to the bottle **Wash Buffer II**, mix thoroughly and store with tightly closed cap. Add 1 ml dd H_2O to the tube **Proteinase K**, mix thoroughly and store the tube at -20°C ! Incubate the needed amount of **Elution Buffer** at 65°C in a Thermomixer.	Add 21 ml 99.7% Isopropanol to each **Binding Buffer A.** Mix by intensive shaking by inverting for 1 min. Shortly before use mix by inverting several times. Add 80 ml of 96-100% Ethanol to the bottle **Wash Buffer I.** Add 105 ml of 96-100% Ethanol to each bottle **Wash Buffer II**, mix thoroughly and store with tightly closed cap. Add 1 ml dd H_2O to the tube **Proteinase K**, mix thoroughly and store the tube at-20°C ! Incubate the needed amount of **Elution Buffer** at 65°C in a Thermomixer.

Symbols

 Manufacturer

 Lot number

 Catalogue number

 Date of manufacture

 Expiry date

 Consult operating instructions

 Temperature limitation

 Do not reuse

Storage

All buffers and kit components of the **Invisorb® Spin Plant Mini Kit** should be stored at room temperature (RT) and are stable for 12 months under these conditions.

Room temperature (RT) is defined as range from 15 - 30°C.

Dissolved **Proteinase K** stored at –20°C is stable for 12 months, but repeated freezing and thawing should be avoided. Aliquotation and storage at – 20°C is recommended.

Wash Buffer charged with ethanol should be appropriately sealed and stored at room temperature.

If there are any precipitates within the provided solutions dissolve these precipitates by carefully warming up to room temperature (up to 30°C).

Quality control and product warranty

STRATEC Molecular warrants the correct function of the **Invisorb® Spin Plant Mini Kit** for applications as described in this manual. Purchaser must determine the suitability of the Product for its particular use. Should any Product fail to perform the applications as described in the manual, STRATEC Molecular will check the lot and if STRATEC Molecular investigates a problem in the lot, STRATEC Molecular will replace the Product free of charge.

STRATEC Molecular reserves the right to change, alter, or modify any Product to enhance its performance and design at any time.

In accordance with STRATEC Molecular's ISO 9001-2000 and ISO EN 13485 certified Quality Management System the performance of all components of the **Invisorb® Spin Plant Mini Kit**

have been tested separately against predetermined specifications routinely on lot-to-lot to ensure consistent product quality.

If you have any questions or problems regarding any aspects of **Invisorb® Spin Plant Mini Kit**

or other STRATEC Molecular products, please do not hesitate to contact us. A copy of STRATEC Molecular's terms and conditions can be obtained upon request or are presented at the STRATEC Molecular webpage.

For technical support or further information please contact:

from Germany **+49-(0)30-9489-2901/ 2910**
from abroad **+49-(0)30-9489-2907**
or contact your local distributor.

Intended use

The **Invisorb® Spin Plant Mini Kit is** the ideal tools for a rapid and efficient isolation of high quality genomic DNA from up to 100 mg of a wide variety of plant species (fresh, frozen or dried plant material, for instance leaves, roots, fruits or seeds) and from food sample from plant origin.

The protocols for the isolation and all buffers are optimized for a high yield as well as a high purity. All hands on steps are reduced to a minimum.

For reproducible and high yields appropriate sample storage is essential.

THE PRODUCT IS INDENTED FOR USE BY PROFESSIONAL USERS ONLY, SUCH AS TECHNICIANS, PHYSICIANS AND BIOLOGISTS TRAINED IN MOLECULAR BIOLOGICAL TECHNIQUES. It is designed to be used with any downstream application employing enzymatic amplification or other enzymatic modification of DNA followed by signal detection or amplification. Any results generated using the sample preparation procedure in conjunction with any downstream assay should be interpreted with regard to other laboratory findings.

To minimize irregularities in your results, adequate controls for downstream applications should be used.

Product use limitation

The kit is neither suitable for isolation of RNA from plant material, as for DNA isolation from cultured or isolated cells, tissue samples or blood samples. The isolation of simultaneously isolation of bacterial DNA or DNA from fungi and parasites is not validated.

The included chemicals are only useable once.

Differing of starting material or flow trace may lead to inoperability; therefore neither a warranty nor guarantee in this case will be given, neither implied nor express.

The user is responsible to validate the performance of the STRATEC Molecular Product for any particular use. STRATEC Molecular does not provide for validation of performance characteristics of the Product with respect to specific applications. STRATEC Molecular Products may be used e.g.in clinical diagnostic laboratory systems conditioned upon the complete diagnostic system of the laboratory the laboratory has been validated pursuant to CLIA' 88 regulations in the U.S. or equivalents in other countries.

All Products sold by STRATEC Molecular are subject to extensive quality control procedures (according to ISO 9001-2000 and ISO EN 13485) and are warranted to perform as described herein. Any problems, incidents or defects shall be reported to STRATEC Molecular immediately upon detection thereof.

The chemicals and the plastic parts are for laboratory use only; they must be stored in the laboratory and must not be used for purposes other than intended.

The Product with its contents is unfit for consumption.

Safety information

When and while working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles!
Avoid skin contact! Adhere to the legal requirements for working with biological material!
For more information, please consult the appropriate material safety data sheets (MSDS). These are available online in convenient and compact PDF format at www.stratec.com for each STRATEC Molecular Product and its components. If buffer bottles are damaged or leaking, WEAR GLOVES, AND PROTECTIVE GOGGLES when discarding the bottles in order to avoid any injuries.

STRATEC Molecular has not tested the liquid waste generated by the **Invisorb® Spin Plant Mini Kit** procedure for residual infectious materials. Contamination of the liquid waste with residual infectious materials is highly unlikely, but cannot be excluded completely. Therefore, liquid waste must be considered infectious and be handled and discarded according to local safety regulations.

European Community risk and safety phrases for the components of the **Invisorb® Spin Plant Mini Kit** to which they apply, are listed below as follows:

Wash Buffer I contains guanidine thiocyanate which is an irritant.

Lysis Buffer P

danger
H319 P305-351-338

Wash Buffer I

warning
H302-312-332-412 EUH032 P273

Proteinase K

danger
H315-319-334-335 P280-305-351-338-310-405

H319:	Causes serious eye irritation.
H315:	Causes skin irritation.
H334:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335:	May cause respiratory irritation.
H302:	Harmful if swallowed.
H312:	Harmful in contact with skin.
H332:	Harmful if inhaled.
H412:	Harmful to aquatic life with long lasting effects.
EUH032:	Contact with acids liberates very toxic gas.
P305+P351+P338:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P280:	Wear protective gloves/protective clothing/eye protection/face protection.
P310:	Immediately call a POISON CENTER or doctor/physician.
P405:	Store locked up.
P273:	Avoid release to the environment.

Emergency medical information can be obtained 24 hours a day from infotrac:

outside of USA: 1 – 352 – 323 – 3500
in USA : 1 – 800 – 535 – 5053

Product characteristic of the Invisorb® Spin Plant Mini Kit

Starting material/	Yield	Time for preparation	Ratio
up to 100 mg of plant material up to 60 mg of dried plant material	up to 50 µg depends on amount and kind of starting material	about 20 minutes after lysis	A_{260} : A_{280} 1.6 – 2.0

The **Invisorb® Spin Plant Mini Kit** provide a very efficient procedure for isolation of high quality genomic DNA from a wide variety of plant species
The **Invisorb® Spin Plant Mini Kit** combine the lysis of starting material with the very efficient binding of genomic DNA onto a spin filter surface without chaotropic ions.
The isolation protocol as well as all buffers is optimized to provide high yield and purity of the isolated genomic DNA. The "hands-on time" necessary for the whole procedure is reduced to minimum.
The purification procedure is rapid and requires neither phenol / chloroform extraction nor alcohol precipitation, and requires minimal interaction by the user.
Due to the high purity, the isolated genomic DNA is ready to use for a broad panel of downstream applications (see below) or can be stored at –20°C for subsequent use.

Downstream Application:

- PCR *)
- RFLP-Analysis
- Restriction Enzyme Digestion
- Southern Blot Analysis
- Sequencing
- Cloning

To purify genomic DNA in 96 format STRATEC Molecular offers the **Invisorb® DNA Plant HTS 96 Kit** for use in a centrifuge and on common laboratory automated workstations. Furthermore STRATEC Molecular offers the **InviMag® Plant DNA Kits** for DNA isolation using magnetic beads for use on a **KingFisher® ml** or a **KingFisher® 96**

For further information please contact: Tel.: +49 (0) 30 9489 2901, 2910 in Germany and from foreign countries Tel.: +49 (0) 30 9489 2907 or your local distributor.

*) The PCR process is covered by US Patents 4,683,195, and 4,683,202 and foreign equivalents owned by Hoffmann-La Roche AG.

Principle and procedure

The **Invisorb® Spin Plant Mini Kit** procedure comprises following steps:

- lysis of sample material
- binding the genomic DNA to the membrane
- washing and elimination of ethanol
- elution of genomic DNA

After lysis the DNA binds to the membrane, contaminations and enzyme inhibitors are efficiently removed during the following wash steps and highly purified DNA is eluted in Elution Buffer or water.

Sampling and storage of starting material

Harvested plant samples/ food sample from plant origin can be stored at room temperature for 2 – 3 hours, for short time storage (up to one week) samples may be stored at 4°C. For long term storage, we recommend freezing samples at –20°C or –80°C. Multiple thawing and freezing before isolating the DNA should be avoided.

Yield and quality of genomic DNA

The amount of purified DNA in the **Invisorb® Spin Plant Mini Kit** procedure from plant material depends on sample source, transport conditions, storage and age of the sample. Yield and quality of isolated genomic DNA is suitable for any detection system.

Important notes

Important points before starting a protocol

Immediately upon receipt of the Product, inspect the Product and its components as well as the package for any apparent damages, correct quantities and quality. If there are any unconformities you have to notify STRATEC Molecular in writing with immediate effect upon inspection thereof. If buffer bottles are damaged, contact the STRATEC Molecular Technical Services or your local distributor. In case of liquid spillage, refer to “Safety Information” (see page 7). Do not use damaged kit components, since their use may lead to poor kit performance.

- Always change pipet tips between liquid transfers. To avoid cross-contamination, we recommend the use of aerosol-barrier pipet tips.
- All centrifugation steps are carried out at room temperature.
- When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles.
- Discard gloves if they become contaminated.
- Do not combine components of different kits unless the lot numbers are identical.
- Avoid microbial contamination of the kit reagents.
- To minimize the risk of infections from potentially infectious material, we recommend working under laminar air-flow until the samples are lysed.
- This kit should only be used by trained personnel.

Important indications

1. Process only as much plant samples as the microcentrifuge allows to process.
2. Plant sample and buffers should be thoroughly mixed and should have room temperature
3. The elution can be done by using lower amount of **Elution Buffer**. This may result in a higher concentration of DNA. But pay attention that minimum volume for elution is 50 µl, but this will reduce the yield.

4. The eluted DNA volume can be lower than the added **Elution Buffer** volume.
5. **Elution Buffer** should be preheated to 65 °C.
6. The **Elution Buffer** doesn't contain EDTA.
7. The yield can be increased, if the incubation time with preheated **Elution Buffer** will be prolonged.

Preparing reagents and buffers of the Invisorb® Spin Plant Mini Kit

1. Adjust the thermo mixer to 65°C.
2. Warm up the needed amount of **Elution Buffer** to 65°C.
3. Label the needed amount of Spin Filter.
4. Label the needed amount of reaction tubes.
5. Add the needed µl ddH_2O to reaction tube with **Proteinase K** (see below). Vortex for 5 s.
6. Add the needed amount of ethanol to the **Wash Buffers**.

Reagents and equipment to be supplied by user

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets (MSDS). These are available online in convenient and compact PDF format at www.stratec.com under each STRATEC Molecular kit and kit component.

- Microcentrifuge
- Thermomixer (for 65°C)
- Reaction tubes (1.5 ml)
- dd H_2O
- 96 - 100 % ethanol
- RNase A (10 mg/ ml - optional)
- Isopropanol*

*The **Invisorb® Spin Plant Mini Kit** is validated with 2-Propanol; Rotipuran >99.7%, p.a., ACS, ISO (Order no. 6752) from **Carl Roth**

*** Possible suppliers for Isopropanol:**

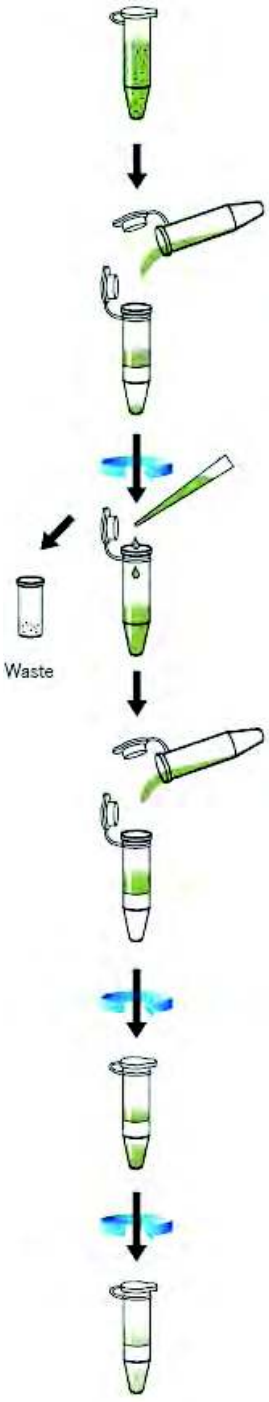
Carl Roth
2-Propanol
Rotipuran >99.7%, p.a., ACS, ISO
Order no. 6752

Applichem
2-Propanol für die Molekularbiologie
Order no. A3928

Sigma
2-Propanol
Order no. 59304-1L-F

5 DNA extractions:
Add 250 µl dd H_2O to the tube **Proteinase K**, mix thoroughly and store the tube at -20°C! Incubate the needed amount of **Elution Buffer** at 65°C in a Thermomixer.
50 DNA extractions:
Add 11 ml 99.7% Isopropanol to the **Binding Buffer A.** Add 30 ml of 96-100% Ethanol to the bottle **Wash Buffer I.** Add 42 ml of 96-100% Ethanol to the bottle **Wash Buffer II**, mix thoroughly and store with tightly closed cap. Add 1 ml dd H_2O to the tube **Proteinase K**, mix thoroughly and store the tube at -20°C! Incubate the needed amount of **Elution Buffer** at 65°C in a Thermo mixer.
250 DNA extractions:
Add 21 ml 99.7% Isopropanol to each **Binding Buffer A.** Add 80 ml of 96-100% Ethanol to the bottle **Wash Buffer I.** Add 105 ml of 96-100% Ethanol to each bottle **Wash Buffer II**, mix thoroughly and store with tightly closed cap. Add 1 ml dd H_2O to the tube **Proteinase K**, mix thoroughly and store the tube at-20°C! Incubate the needed amount of **Elution Buffer** at 65°C in a Thermo mixer.

Scheme of the Invisorb® Spin Plant Mini Kit



Please read protocols prior the start of the preparation carefully

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Homogenize about 60 mg of starting material by a pestle under liquid N2

Transfer homogenized plant material into a 1.5 ml reaction tube.
Add 400 µl **Lysis Buffer P** and 20 µl **Proteinase K**, vortex briefly.
Incubation at 65°C for 30 min

Transfer of Lysis Solution onto the Prefilter.
Centrifuge for 1 min at 11.100 x g (11.000 rpm)
Discard the Prefilter

Add 200 µl of **Binding Buffer A** *(follow preparing instructions)* and vortex thoroughly

Transfer the suspension onto the Spin Filter.
Incubate for 1 min.
Centrifuge at 11.100 x g (11.000 rpm) for 2 min. Discard the filtrate

Add 550 µl **Wash Buffer I.**
Centrifuge at 11.100 x g (11.000 rpm) for 1min.
Discard the filtrate
Place the Spin Filter again into the 2.0 ml Receiver Tube.

Add 550 µl **Wash Buffer II** and centrifuge at 11.100 x g (11.000 rpm) for 1min.
Discard the filtrate,
Repeat the washing step once again.
Discard the filtrate and centrifuge for 4 min at 11.100 x g (11.000 rpm)

Place the Spin Filter into a new 1.5 ml Receiver Tube and add 100 µl of the prewarmed **Elution Buffer**.
Incubate for 3 min. Centrifuge for 1 min at 11.100 x g (11.000 rpm).

Discard Spin Filter
Close the 1.5 ml Receiver Tube and store the DNA sample at 4 °C

Protocol 1: DNA extraction from fresh or dried plant material and from food of plant origin (fresh, frozen or dried material)

Please read the instructions carefully and conduct the prepared procedure.

Attention: *Please be aware, that you have to prepare the* ***Binding Buffer A*** *– see instruction page: 8*

Important *Transfer the needed amount of* ***Elution Buffer*** *into 2.0 ml Receiver Tube (not included in the kit) and place the tube a 65°C.*

1. Homogenization of the starting material
Homogenize about 60 mg of starting material by a pestle under liquid N_2.
Commercially available equipment for homogenization also can be used.

Note: *Use 120-180 mg of starting material if extraction from material containing more water (fruits, algae).*

2. Lysis of the starting material
Transfer the "plant powder" into a 1.5 ml reaction tube. Add 400 µl **Lysis Buffer P** and 20 µl **Proteinase K** and vortex briefly. Incubation at 65°C for 30 min or longer (incubation in a thermo mixer under continuous shaking is recommended). During incubation place the Prefilter into a 2.0 ml Receiver Tube.

3. Filtration of Lysis Solution and realizing optimum binding conditions
Transfer of Lysis Solution onto the Prefilter. Centrifuge for 1 min at 11.100 x g (11.000 rpm) Discard the Prefilter.

Note: *To remove RNA (if it is necessary) from the sample add 40 µl of RNase A to the filtrate (10 mg/ml), vortex briefly and incubate for 5 min at room temperature.*

Add 200 µl of **Binding Buffer A** and vortex thoroughly.

4. DNA Binding
Place a the Spin Filter into a 2.0 ml Receiver Tube. Transfer the suspension onto the Spin Filter and incubate for 1 min. Centrifuge at 11.100 x g (11.000 rpm) for 2 min. Discard the filtrate and place the Spin Filter again into the 2.0 ml Receiver Tube.

5. Washing I
Add 550 µl **Wash Buffer I** and centrifuge at 11.100 x g (11.000 rpm) for 1min. Discard the filtrate, place the Spin Filter again into the 2.0 ml Receiver Tube.

6. Washing II
Add 550 µl **Wash Buffer II** and centrifuge at 11.100 x g (11.000 rpm) for 1min. Discard the filtrate, place the Spin Filter again into the Receiver Tube and repeat the washing step once again. Finally discard the filtrate and centrifuge for 4 min at 11.100 x g (11.000 rpm) to remove residual ethanol.

7. Elution of the DNA
Place the Spin Filter into a new 1.5 ml Receiver Tube and add 100 µl of the prewarmed Elution Buffer. Incubate for 3 min. Centrifuge for 1 min at 11.100 x g (11.000 rpm).

Note: *The DNA can also be eluted with a lower or a higher volume of Elution Buffer (depends on the expected yield of genomic DNA). But pay attention, that minimum volume for the elution is 50 µl. If quite large amount of DNA is expected, the volume of elution can be increased (100-200 µl).*
To maximize the final yield we recommend a second elution step with the equal volume of Elution Buffer.

Troubleshooting

Problem	Cause	Comments and suggestions
clogged Spin Filter	insufficient lysis and/or too much starting material	increase lysis time increase centrifugation speed or time reduce amount of starting material
low amount of extracted DNA	insufficient lysis	increase lysis time reduce amount of starting material overloading of Spin Filter reduces yield
	incomplete elution	prolong the incubation time with **Elution Buffer** to 5-10 min or repeat elution step once again
	insufficient mixing with **Binding Buffer A**	take higher volume of **Elution Buffer** Mix sample with **Binding Buffer A** by pipetting or by vortexing prior to transfer the sample onto the Spin Filter
low concentration of extracted DNA	too much **Elution Buffer**	elute the DNA with lower volume of **Elution Buffer**
degraded or sheared DNA	incorrect storage of starting material	ensure that the starting material is frozen immediately in liquid N_2 or in minimum at –20°C and is stored continuously at –80°C avoid thawing and freezing of the material.
	old material	old material often contains degraded DNA.
RNA contaminations of extracted DNA.	to much RNA	RNAse A digestion
genomic DNA does not perform well in downstream-applications	ethanol carryover during elution	increase time for removing of ethanol. ensure that **Wash Buffer** is at room temperature.
	Salt carryover during elution	check up **Wash Buffer** for salt precipitates. If there are any precipitates, solve these precipitates by careful warming.

Appendix

General notes on handling DNA

Nature of DNA

The length and delicate physical nature of DNA requires careful handling to avoid damage due to shearing and enzymatic degradation. Other conditions that affect the integrity and stability of DNA include acidic and alkaline environments, high temperature, and UV irradiation. Careful isolation and handling of high molecular weight DNA is necessary to ensure compatibility with various downstream applications. Damaged DNA could perform poorly in applications such as genomic Southern blotting and long-template PCR.

Storage of DNA

A working stock of DNA can be stored at 2 – 4˚C for several weeks. For long term storage DNA should be stored at -20˚C, but storing at – 20°C can cause shearing, particularly if the DNA is exposed to repeated freeze-thaw cycles.

Note that the solution in which the nucleic acid is eluted in will affect it's stability during storage. Pure water lacks buffering capacity and an acidic pH may lead to acid hydrolysis. Tris or Tris-EDTA buffer contains sufficient buffering capacity to prevent acid hydrolysis.

Drying, dissolving and pipetting DNA

Avoid over drying genomic DNA after ethanol precipitation. It is better to let it air dry than to use a vacuum, although vacuum drying can be used with caution.
Avoid vigorous pipetting. Pipetting genomic DNA through small tip openings causes shearing or nicking. One way to decrease shearing of genomic DNA is to use special tips that have wide openings designed for pipetting genomic DNA.

DNA Yield

The amount of purified DNA from the plant material depends on sample source, transport conditions, storage and age of the sample.

Ordering information

Product	Package size	Catalogue No.
Invisorb® Spin Plant Mini Kit	5 preparations	1037100100
Invisorb® Spin Plant Mini Kit	50 preparations	1037100200
Invisorb® Spin Plant Mini Kit	250 preparations	1037100300

Single components for the Invisorb® Spin Plant Mini Kit

Lysis Buffer P	30 ml	1037101200
Binding Buffer A	15 ml	1037102800
Wash Buffer I (add 30 ml)	30 ml	1037103300
Wash Buffer II (add 42 ml)	18 ml	1037103400
Elution Buffer	15 ml	1037104000

Related products

Invisorb® DNA Plant 96 HTS/ C	2x96 preparations	7037300200
Invisorb® DNA Plant 96 HTS/ C	4x96 preparations	7037300300
Invisorb® DNA Plant 96 HTS/ C	24x96 preparations	7037300400
InviMag® Plant DNA Mini Kit/ KFml	15 preparations	2437110100
InviMag® Plant DNA Mini Kit/ KFml	75 preparations	2437110200
InviMag® Plant DNA Mini Kit/ KF96	1x96 preparations	7437300100
InviMag® Plant DNA Mini Kit/ KF96	5x96 preparations	7437300200

Possible suppliers for Isopropanol

Carl Roth
2-Propanol
Rotipuran >99.7%, p.a., ACS, ISO
Order no. 6752

Applichem
2-Propanol für die Molekularbiologie
Order no. A3928

Sigma
2-Propanol
Order no. 59304-1L-F

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