GENETIX BRAND

HANDBOOK

Nucleo-pore®

Genomic DNA Purification from Tissue

☐ **DNASure® Tissue Mini Kit**	NP-61305	50 Preps
☐ **DNASure® Tissue Mini Kit**	NP-61307	250 Preps

www.genetixbiotech.com

Nucleo-pore®

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COMPONENTS

Kit contents

DNASure® Tissue Mini Kit

Cat. No.	NP-61305	NP-61307
Number of Preps	**50 preps**	**250 preps**
Lysis Buffer LBT	20 ml	100 ml
Buffer BT3	15 ml	75 ml
Wash Buffer WBT	30 ml	2 x 75 ml
Wash Buffer WBT5 (Concentrate)*	2 x 7 ml	2 x 40 ml
Elution Buffer BET	15 ml	75 ml
Proteinase K (lyophilized)*	30 mg	2 x 75 mg
Proteinase Buffer PB	1.8 ml	8 ml
DNASure® Tissue Columns	50	250
Collection Tubes (2 ml)	100	500
Handbook	1	1

* Please see “Preparation of Reagents”

Reagents, consumables, and equipment not provided with the kit

- Absolute ethanol
- 1.5 ml microcentrifuge tubes for sample lysis and DNA elution
- Disposable tips
- Pipettes
- Centrifuge 1.5-2ml rotor adaptor
- Vortex mixer
- Heating-block or dry bath for incubation at 70 °C
- Equipment for sample disruption and homogenization
- Personal protection equipment (lab coat, gloves, goggles)

SAFETY INSTRUCTIONS

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 (MSDSs).

Buffers BT3 and WBT contain guanidine salts, which can form highly reactive compounds when combined with bleach. If liquid containing these buffers is spilt, clean with suitable laboratory detergent and water. If the spilt liquid contains potentially infectious agents, clean the affected area first with laboratory detergent and water, and then with 1% (v/v) sodium hypochlorite.
The following risk and safety phrases apply to components of the DNASure® Tissue Kit:

Buffer BT3
Contain Guanidine hydrochloride: R&S Phrases: R22-36/38

Buffer WBT
Contain Guanidine hydrochloride + isopropanol<25%: R&S Phrases: R10-22-36/38, S7-16-25

Proteinase K
Contain lyophilized Proteinase K: R&S Phrases: R22-36/37/38/42, S22-24-26-36/37

R10: Flammable, R22: Harmful if swallowed, R36/38: Irritating to eyes and skin, May cause sensitization by inhalation and skin contact, R36/37/38: Irritating to eyes, respiratory system and skin, R42: May cause sensitisation by inhalation, S7: Keep container tightly closed, S16: Keep away from sources of ignition - No smoking, S22: Do not breathe dust, S24: Avoid contact with skin, S25: Avoid contact with eyes, S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice, S36/37: Wear suitable protective clothing and gloves.

INTRODUCTION

Principle and Procedure

With the DNASure® Tissue Mini Kit method genomic DNA can be prepared from tissue, cells (e.g., bacteria), and many other sources. Lysis is achieved by incubation of the sample material in a proteinase K / SDS solution. Appropriate condition for binding of DNA to the silica membrane in the DNASure® Tissue Mini Kit Columns is achieved by the addition of chaotropic salts and ethanol to the lysate. The binding process is reversible and specific to nucleic acids. Contaminations are removed by subsequent washing with two different buffers. Pure genomic DNA is finally eluted under low ionic strength conditions in a slightly alkaline elution buffer.

Specifications of DNASure® Tissue Kits

DNASure® Tissue Mini Kit is designed for the fast, small-scale preparation of highly pure gDNA from any tissue, cells, bacteria, yeast, forensic samples, serum, plasma, or other body fluids. It is also suitable for preparation of DNA from human or animal blood. The purified DNA can be used directly for downstream applications like PCR, Southern blotting, or any kind of enzymatic reactions.

Upto35 µg of pure genomic DNA can be purified with an A_{260} / A_{280} ratio between 1.7 and 1.9 with 20-35µg sample in an elution volume of 60-100µl. TheDNASure® Tissue Mini Kit Column is capable of binding up to 60 µg of genomic DNA. For lysis of certain bacterial and yeast strains, additional enzymes may be necessary which are not provided with this kit.

Preparation and storage of reagents

Precautions:

Buffers BT3 and WBT contain guanidine hydrochloride Always use personal protection equipments (PPE). All kit components can be stored at room temperature (18 – 25 °C) and are stable up to one year. During storage, especially at low temperatures, a white precipitate may form in Buffer LBT or BT3. Such precipitates can be easily dissolved by incubating the bottle at 50°C – 70°C before use.

Wash Buffer WBT5

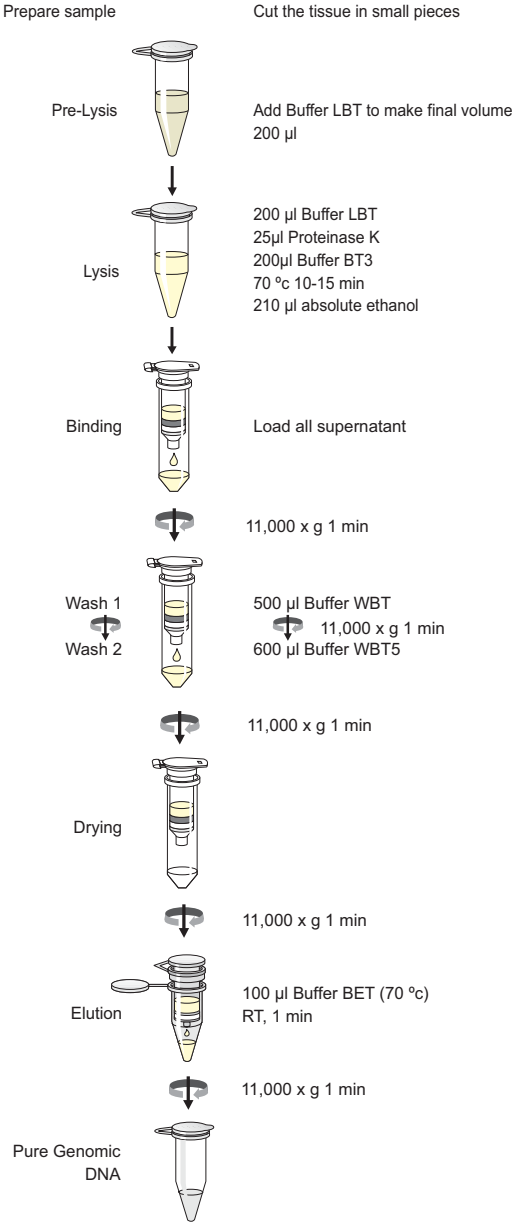
Reconstitute Wash Buffer WBT5 by adding 25ml and 160ml of ethanol (96-100%) to each bottle (Kits NP-61305 and NP-61307 respectively). Mark the bottle as "Ethanol Added". Store WBT5 at room temperature (18-25^{0}C) for upto one year.

Proteinase K

Add 1.35ml of Proteinase Buffer PB to 30mg of lyophilized Proteinase K (Kit NP-61305). Similarly, add 3.35ml of Proteinase Buffer PB to 75mg of Proteinase K vial (Kit NP-61307).

Proteinase K is stable at -20°C for upto 6 months

Genomic DNA Purification



Protocol for DNA purification from human or animal tissue and cultured cells

Genomic DNA purification with DNASure® Tissue Mini Kit

Things to do Before starting:

- Check that Buffer BT3, Buffer WBT5 and Proteinase K were prepared as per instructions.
- Set dry bath or water bath to 56 °C.
- Preheat Elution Buffer BE to 70 °C.

Procedure

1 Cut 25mg human or animal tissue into small pieces. Place the sample in a microcentrifuge tube (not provided) and proceed with step 2. For cultured cells resuspend up to 10^7cells in a final volume of 200 l Buffer LBT. Add 25 l Proteinase K solution and 200 l Buffer BT3. Incubate the sample at 70°C for 10 – 15 min. Proceed with step 4.

Note: Samples that are difficult to lyse can be ground under liquid nitrogen or may be treated in a mechanical homogenizer Add 25 mg of tissue to a 1.5 ml microcentrifuge tube (not provided), add 50 – 75 µl phosphate buffered saline (PBS) and homogenize.

2 Add 180 l Buffer LBT and 25 l Proteinase K solution. Vortex. Be sure that the samples are completely covered with lysis solution. Incubate at 56°C until achieved for 1–3 hrs. Vortex several times during incubation or use a shaking incubator.

If processing several samples, Proteinase K and Buffer LBT may be premixed directly before use. Do not mix Buffer LBT and Proteinase K more than 10 – 15 min before addition to the sample: Proteinase K tends to self-digestion in Buffer LBT without substrate.

Note: Incubation time can be extnded to overnight if samples are not lyzed completely. If RNA-free DNA is crucial for downstream applications, an on column RNase digestion can be performed. Add 20 µl RNase A (20 mg/ml) solution (not provided) and incubate for an additional 5 min at room temperature.

3 Vortex the samples. Add 200 l Buffer BT3, vortex vigorously and incubate at 70°C for 10 min. Vortex briefly.

If insoluble particles are visible, centrifuge for 5 min at high speed (e.g., 11,000 x g) and transfer the supernatant to a fresh microcentrifuge tube (not provided).

4 Add 210 l absolute ethanol to the sample and vortex vigorously.

After addition of ethanol a stringy precipitate may appear. This will not affect the DNA isolation. Make sure all of the precipitate is loaded onto the column.

5 For each sample, place one DNASure® Tissue Mini Kit Column into a Collection Tube. Apply the sample to the column without wetting the rim. Centrifuge for 1 min at 11,000 x g. Discard the flow-through and place the column back into the Collection Tube.

Note: If the sample is not drawn completely through the matrix during centrifugation, repeat the centrifugation step at 11,000 x g. Discard flowthrough.

6 Add 500 l Buffer WBT. Centrifuge for 1 min at 11,000 x g. Discard flow-through and place the column back into the Collection Tube.

7 Add 600 l Buffer WBT5 to the column and centrifuge for 1 min at 11,000 x g. Discard flow-through and place the column back into the Collection Tube. Centrifuge the column for 1 min at 11,000 x g. Residual ethanol is removed during this step. 11,000 x g

8 Place the DNASure® Tissue Mini Kit Column into a 1.5 ml microcentrifuge tube (not provided) and add 100 l prewarmed buffer BET (70°C). Incubate at room temperature for 1 min. Centrifuge 1 min at 11,000 x g.

Note: To increase yield, proceed with two elution steps with the same elution volume as indicated. Approximately 80% of the bound nucleic acid can be eluted. If high concentration is required, use 60% of the volume of elution buffer which increase the concentration of nucleic acid to 30%

Supplementary Protocol for purification of genomic DNA from mouse or rat tails

Things to do before starting:

- Check that Buffer BT3, Buffer WBT5, and Proteinase K were prepared as per instructions.
- Set dry bath or water bath to 56°C.
- Before elution, preheat Elution Buffer BE to 70°C.

Procedure

1 **Cut two 0.6 cm-pieces of mouse tail and place them in a 1.5 ml centrifuge tube (not provided).**
If processing rat tails, one 0.6 cm-piece is sufficient.

2 **Add 180 µl Buffer LBT and 25 µl Proteinase K and vortex. Incubate at 56°C overnight or until complete lysis is achieved. Pulse vortex several times during incubation or use a shaking water bath. To remove residual bones or hair, centrifuge for 5 min at high speed (e.g., 11,000 x g). Transfer 200µl supernatant to a fresh tube.**
Note: If processing several samples, Proteinase K and Buffer LBT may be premixed directly before use. Do not mix Buffer LBT and Proteinase K more than 10 – 15 min before addition to the sample: Proteinase K tends to self-digestion in Buffer LBT without substrate.

3 **Add 200 µl Buffer BT3 to the lysate and vortex vigorously. Buffer BT3 and ethanol (see step 4) can be premixed before addition to the lysate.**

4 **Add 210 µl ethanol to the lysate and vortex vigorously.**

Proceed with step 5 of the standard protocol

Supplementary Protocol for purification of genomic DNA from bacteria

Things to do before starting:

- Check that Buffer BT3, Buffer WBT5, and Proteinase K were prepared as per instruction.
- Set dry bath or water bath to 56°C.
- Before elution, preheat Elution Buffer BET to 70°C.

Procedure

1 **Up to 1 ml of bacterial culture can be used for the preparation depending on, density of culture, culture medium, and bacterial strain. Centrifuge up to 1 ml culture for 5 min at 8,000 x g. Remove supernatant.**

2 **Resuspend the pellet in 180 µl Buffer LBT, mix by pipetting up and down. Add 25 l Proteinase K. Vortex vigorously and incubate at 56°C until complete lysis is achieved (at least 1–3hrs). Pulse vortex occasionally during incubation or use a shaking incubator.**

Note: Samples can also be incubated overnight If RNA-free DNA is crucial for downstream applications, an on column RNase digestion can be performed: Add 20 µl RNase A (20 mg / ml) solution (not included; see ordering information) and incubate for an additional 5 min at room temperature. Hard-to-lyse bacteria: Some strains, especially Gram-positive bacteria, are more difficult to lyse. In such cases, a preincubation with a lytic enzyme is necessary: Resuspend the pelleted cells in 20 mM Tris/HCl; 2 mM EDTA; 1% Triton X-100; pH8 (instead of Buffer LBT) supplemented with 20 mg/ml lysozyme or 0.2 mg/ml lysostaphin and incubate for 30 – 60 min at 37 °C. Add 25 µl Proteinase K, incubate at 56°C until complete lysis is achieved.

Proceed with step 3 of the standard protocol

Supplementary Protocol for *M. tuberculosis* genomic DNA purification from Sputum Samples

1. Unliquefied fresh sputum: take 1ml sputum and equal volume of sputum liquefaction reagent (CAT# NP-61305-LQ) [supplied separately], and mix until it is completely liquefied.
2. Transfer 200 µl of the liquefied sample in fresh 1.5 ml centrifuge tube.
3. Add 180 µl Buffer LBT, mix by pipetting up and down. After that add 15µl Proteinase K.
4. Proceed with step 3 of standard protocol.

*Sputum already collected with preservation solution can be processed directly by transferring 200 µl in fresh 1.5 ml centrifuge tube. For further processing add 180 µl Buffer LBT and 15 µl Proteinase K as explained above. After that proceed with step 3 of standard protocol

Supplementary Protocol for purification of genomic DNA from yeast

Things to do before starting:

- Check that Buffer BT3, Buffer WBT5, and Proteinase K were prepared as per instructions.
- Check that sorbitol buffer and lyticase or zymolase (not provided with the kit) is available for sample pre-lysis.
- Set dry bath or water bath to 30°C and 56°C.
- Before elution, preheat Elution Buffer BET to 70 °C.

Procedure

1 **Harvest 3 ml YPD yeast culture (OD600 ≤ 10) by centrifugation for 10 min at 5,000 x g. Wash the cells once with 1 ml 10 mM EDTA, pH 8. Remove the supernatant and pellet down the cells by centrifugation (5,000 x g, 10 min).**

2 **Resuspend the pellet in 600 µl sorbitol buffer** (1.2 M sorbitol; 10 mM CaCl2; 0.1 M Tris/HCl pH 7.5; 35 mM ß-mercaptoethanol). **Add 50 U lyticase or zymolase. Incubate at 30°C for 30 min. Centrifuge the mixture for 10 min at 2,000 x g remove supernatant and resuspend the pelleted spheroplasts in 180 µl Buffer LBT. Add 25 µl Proteinase K solution and vortex vigorously. Incubate at 56°C until complete lysis is achieved (at least 1–3 hrs). Pulse vortex occasionally during incubation or use a shaking water bath.**

Note: Samples can be incubated overnight as well. If RNA-free DNA is crucial for downstream applications, an on column RNase digestion can be performed: Add 20 µl RNase A (20 mg / ml) solution (not included; see ordering information) and incubate for an additional 5 min at room temperature.

Proceed with step 3 of the standard protocol

Supplementary Protocol for purification of genomic DNA from dried blood spots (e.g. FTA® cards, Guthrie cards etc)

Things to do before starting:

- Check that Buffer BT3, Buffer WBT5, and Proteinase K were prepared as per instruction.
- Set dry bath or water bath to 56°C.
- Before elution, preheat Elution Buffer BET to 70°C.

Procedure

1 **Cut out one or two dried blood spots as accurately as possible. Cut spots into small pieces and place them in a 1.5 ml microcentrifuge tube (not provided).**
Note: The area of the dried blood spots should be between 15 and 30 mm2.

2 **Add 180 µl Buffer LBT and mix by Pulse vortexing. Place the samples in a water bath or heating block and heat for 10 min at 94°C. Let the sample cool down. Add 25 µl Proteinase K solution. Spin the samples briefly, vortex and incubate at 56°C for 1 hr. Pulse Vortex during incubation or use a shaking water bath.** Make sure that the samples are completely covered with lysis buffer during incubation.

3 Add 200 µl Buffer BT3, vortex vigorously to mix and incubate at 56°C for 10 min**.**

Proceed with step 4 of the standard protocol.

Supplementary Protocol for purification of genomic DNA from insects

Things to do before starting:

- Check that Buffer BT3, Buffer WBT5, and Proteinase K were prepared as per instructions.
- Set dry bath or water bath to 56°C.
- Before elution, preheat Elution Buffer BET to 70°C.

Procedure

1 **Homogenize not more than 50 mg insects under liquid nitrogen and transfer the powder into a 1.5 ml microcentrifuge tube (not provided).**

Proceed with step 2 of the standard protocol.

Supplementary Protocol for purification of genomic DNA from buccal swabs

Things to do before starting:

- Check that Buffer BT3, Buffer WBT5, and Proteinase K were prepared as per instructions
- Set dry bath or water bath to 56°C.
- Before elution, preheat Elution Buffer BET to 70°C.
- Make sure individual providing cheek cells has not taken food or drink at least 30 minutes prior to collection of sample.
- Collect the samples with cotton swab, or C.E.P. swabs (Gibco BRL). Scrape firmly against the inside of each cheek several times and let the swabs air dry.
- The respective individual should not have consumed food or drink within 30 min before collection of the sample.

Procedure

1. **Place the dry swab material in 2 ml microcentrifuge tubes (not provided). Add 400 – 600 l PBS and 25 l Proteinase K solution to the swabs**. The volume of PBS is depending on the type of swab used: for cotton and dacron, swabs, 400 µl are sufficient; for C.E.P. swabs, 600 µl are necessary. **Mix by vortexing 2 x 5 s and incubate 10 min at 56 °C.**

2. **Transfer the lysate to a 1.5 ml fresh microcentrifuge tube.**

3. **Add one volume Buffer BT3 (400 or 600 l; depending on the swab type / volume of PBS buffer used) and vortex vigorously. Incubate the samples at 70°C for 10 min.**
   Note: Depending on the number of preparations, additional Buffer BT3 might be needed (see ordering information).

4. **Add one volume 96 – 100 % ethanol (400 or 600 l, depending on the swab type) to each sample and mix by Pulse vortexing.**

5. **Transfer 600 l of the samples from the 2 ml microcentrifuge tubes into DNASure® Tissue Mini Kit Columns. Centrifuge at 11,000 x g for 1 min.** If the samples are not drawn through completely, repeat the centrifugation. Discard flow-through.

   Proceed with step 6 of the standard protocol

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TROUBLESHOOTING GUIDE

No or Poor DNA yield

Possible cause

- Incomplete lysis

Suggestion

- Sample not thoroughly homogenized and mixed with Buffer LBT /Proteinase K. The mixture has to be vortexed vigorously immediately after the addition of Buffer LBT. Decreased Proteinase K activity: Store dissolved Proteinase K at - 20 °C for 6 months.

Possible cause

- Reagents not applied properly

Suggestions

- Prepare Buffer BT3, Buffer WBT5, and Proteinase K solution as per instructions. Add ethanol to the lysates before loading them onto the columns.

Possible cause

- Suboptimal elution of DNA from the column

Suggestions

- Preheat Buffer BET to 70 °C before elution. Apply Buffer BET directly onto the center of the silica membrane.
- Elution efficiencies decrease dramatically, if elution is achieved with buffers with a pH < 7.0. Use slightly alkaline elution buffers like Buffer BET (pH 8.5).
- Especially when expecting high yields from large amounts of material, we recommend elution with 200 µl Buffer BE and incubation of the closed columns in dry bath at 70 °C for 5 min before centrifugation.

Poor DNA quality

Possible cause

- Incomplete lysis

Suggestions

- Sample not thoroughly homogenized and mixed with Buffer LBT / Proteinase K. The mixture has to be vortexed vigorously immediately after the addition of Buffer LBT.
- Decreased Proteinase K activity: Store dissolved Proteinase K at - 20 °C for 6 months.

Possible cause

- Reagents not applied properly

Suggestions

- Prepare Buffer BT3, Buffer WBT5, and Proteinase K solution according to instructions. Add ethanol to the lysates before loading them on the columns.

Possible cause

- RNA in sample

Suggestions

- If RNA-free DNA is desired, add 10 µl of RNase A solution (5 mg / ml; not supplied with the kit) before addition of Buffer BT3 and incubate at 37°C for 5 min.

Clogged columns

Possible cause

- Too much sample material used

Suggestions

- Do not use more sample material than recommended (25 mg for most tissue types). If insoluble material like bones or hair remains in the lysate, spin down the debris and transfer the clear supernatant to a fresh microcentrifuge tube before proceeding with addition of Buffer BT3 and ethanol.

Possible cause

- Incomplete lysis

Suggestions

- Sample not thoroughly homogenized and mixed with Buffer LBT / Proteinase K. The mixture has to be vortexed vigorously immediately after the addition of Buffer LBT.
- Decreased Proteinase K activity: Store dissolved Proteinase K at - 20 °C for 6 months.

Possible cause

- Reagents not applied properly

Suggestions

- Prepare Buffer BT3, Buffer WBT5, and Proteinase K solution according to instructions. Add ethanol to the lysates before loading them on the columns.

Suboptimal performance of genomic DNA in enzymatic reactions

Possible cause

- Carry-over of ethanol or salt

Suggestions

- Make sure to centrifuge ≥ 1 min at 11,000 x g in order to remove all of ethanolic Buffer WBT5 before eluting the DNA. If, for any reason, the level of Buffer WBT5 has reached the column outlet after drying, repeat the centrifugation. Do not chill Buffer WBT5 before use. Cold buffer will not remove salt effectively. Equilibrate Buffer WBT5 to room temperature (18 - 25°C) before use.

Possible caus**e**

- Contamination of DNA with inhibitory substances

Suggestions

- Do not elute DNA with TE buffer. EDTA may inhibit enzymatic reactions. Repurify DNA and elute in Buffer BET. If the A260 / A280 ratio of the eluate is below 1.6, repeat the purification procedure: Add 1 volume Buffer BT3 plus 1 volume ethanol (96 – 100 %) to the eluate. Load the mixture onto a DNASure® Column and proceed with step 5 of the standard protocol.

ORDERING INFORMATION

Description	Pack Size	Cat. No.
DNASure® Tissue Mini Kit	50 preps	NP-61305
DNASure® Plant Mini Kit	50 preps	NP-79105
DNASure® Plant Mini Kit	250 preps	NP-79107
DNASure® Plant Midi Kit	20 preps	NP-78153
DNASure® Plant Maxi Kit	10 preps	NP-78164
DNASure® Blood Mini Kit	50 preps	NP-61105
DNASure® Blood Mini Kit	250 preps	NP-61107
DNASure® Blood Midi Kit	20 preps	NP-61184
DNASure® Blood Maxi Kit	10 preps	NP-61193
DNASure® Blood FastPure Kit	50 preps	NP-62205
DNASure® Blood FastPure Kit	250 preps	NP-62207
SureSpin® Plasmid Mini Kit	50 preps	NP-37105
SureSpin® Plasmid Mini Kit	250 preps	NP-37107
SureSpin® Plasmid FastPrep Kit	50 preps	NP-47105
SureSpin® Plasmid FastPrep Kit	250 preps	NP-47107
SureSpin® Buffer Set*	1	37107-BS
SurePrep® Plasmid Mini Kit	20 preps	NP-15123
SurePrep® Plasmid Mini Kit	100 preps	NP-15125
SurePrep® Plasmid Midi Kit	20 preps	NP-15143
SurePrep® Plasmid Midi Kit	100 preps	NP-15145
SurePrep® Plasmid Maxi Kit	10 preps	NP-15161
SurePrep® Plasmid Maxi Kit	25 preps	NP-15162
SurePrep® Plasmid Mega Kit	5 preps	NP-15183
SurePrep® Plasmid Giga Kit	5 preps	NP-15191

***SureSpin® Buffer Set**

For the isolation of low-copy plasmids, buffers PA1, PA2, PA3, RNase A, sufficient for 300 preps

ORDERING INFORMATION

Description	Pack Size	Cat. No.
SurePrep® Buffer Set**	1	15143-BS
SurePrep® Plasmid Endofree Maxi Kit	10 preps	NP-15363
SurePrep Plasmid Endofree Mega Kit	5 preps	NP-15365
SurePrep® Plasmid Endofree Giga Kit	5 preps	NP-15367
SureSpin® 96 PCR Kit	4x96	NP-38151
SureTrap® Gel Extraction Kit	50 preps	NP-38705
SureTrap® Gel Extraction Kit	250 preps	NP-38707
SureTrap® PCR Cleanup Kit	50 preps	NP-38105
SureTrap® PCR Cleanup Kit	250 preps	NP-38107
SureExtract® Spin PCR/Gel Extraction Kit	50 preps	NP-36105
SureExtract® Spin PCR/Gel Extraction Kit	250 preps	NP-36107
SureSEQ® Cleanup Kit	50 preps	NP-73205
RNASure® Mini Kit	50 preps	NP-84105
RNASure® Mini Kit	250 preps	NP-84107
RNASure® Plant Kit	50 preps	NP-84905
RNASure® Plant Kit	250 preps	NP-84907
miRNASure® Mini Kit	50 preps	NP-71002
SureTrap® mRNA Mini Kit	12 preps	NP-80033
SureTrap® mRNA Midi Kit	12 preps	NP-80043
RNASure® Virus Kit	50 preps	NP-67705
RNASure® Virus Kit	250 preps	NP-67707

****SureSpin® Buffer Set**

For isolation of low-copy plasmids, cosmids, BACs, PACs, and P1 constructs, only applicable with SurePrep® Plasmid kits, sufficient for 10 SurePrep Maxi Columns (Maxi preps), 20 SurePrep® Midi Columns (Midi preps), set incl. RNase A

Product Warranty

DNASure® Tissue Kit components are intended for research purposes only. They are suitable for *in vitro* uses only. The purchaser must determine the suitability of the product for its particular use. Should any product fail to perform satisfactorily due to any reason other than misuse, Genetix will replace it free of charge or refund the purchase price. Genetix reserve the right to change, alter, or modify any product to enhance its performance and design. It is the responsibility of the user to verify the use of the DNASure® Tissue Kit for a specific application range as the performance characteristic of this kit has not been verified to a specific organism. No claim or representation is intended for its use to identify any specific organism or for clinical or therapeutic use.

Genetix does not warrant against damages or defects arising in shipping and handling (transport insurance for customers excluded), or out of accident or improper or abnormal use of this product.

In accordance with Genetix ISO-certified Quality Management System, each lot of DNASure® Tissue Kit is tested against predetermined specifications to ensure consistent product quality.

In no event shall Genetix be liable for claims for any other damages, whether direct, indirect, incidental, compensatory, foreseeable, consequential, or special (including but not limited to loss of use, revenue or profit), whether based upon warranty, contract, tort (including negligence) or strict liability arising in connection with the sale or the failure of Genetix products to perform in accordance with the stated specifications.

Product claims are subject to change. Therefore please contact our Technical Support Department for updated information on Genetix products.

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NOTE:

NOTE:

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