MagCore® Genomic DNA Tissue Kit

For extraction of genomic DNA from a variety to animal tissues, paraffin-embedded tissue, swab, blood stain, forensic specimens and cultured yeast.

Applicable Models : HF16, Compact, HF48, Super, HF16 Plus, Plus II

Cartridge Code 401

Cat.No. MGT-01 // MGT-02

Kit Contents

Check that the following parts are included in addition to the main unit:

Cat.No. MGT-01 Contents:

Pre-filled Cartridge Reagent	*36 pcs.*
Pipet Tip plus Holder Set	*36 sets.*
Sample Tube	*36 pcs.*
Elution Tube	*36 pcs.*
GT Buffer(30ml)	*1 pcs.*
Filter Column Set	*36 pcs.*
Proteinase K(11mg)	*1 pcs.*
PK Storage Buffer	*1 pcs.*

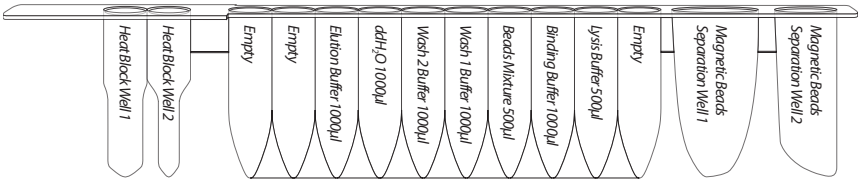
Cat.No. MGT-02 Contents:

Pre-filled Cartridge Reagent	*96 pcs.*
Pipet Tip plus Holder Set	*100 sets.*
Sample Tube	*100 pcs.*
Elution Tube	*100 pcs.*
GT Buffer(30ml)	*2 pcs.*
Filter Column Set	*100 pcs.*
Proteinase K(11mg)	*2 pcs.*
PK Storage Buffer	*2 pcs.*

Storage and Stability :

1. This kit should be stored at room temperature.
2. Proteinase K should be stored at 2-8℃ upon arrival.
3. Shelf Life: 18 Months.

Cartridge Contents :



Description

MagCore® Genomic DNA Tissue Kit is designed for purification of total DNA (including genomic, mitochondrial and viral DNA) from a variety of animal tissues or cells by using MagCore® auto-extraction instrument. The provided Filter Column can filtrate hard tissue sample or swab sample to prevent tissue residues to obstruct pipette tip during the process of MagCore® . The method uses pre-filled cartridge which contains proteinase K and a chaotropic salt to lyse cells and degrade protein. DNA will bind to cellulose coated Magnetic Beads . After washing off the contaminants, the purified DNA is eluted by low salt elution buffer. Purified DNA of approximately 20-30 kb in length is suitable for PCR or other enzymatic reactions.

Applications

Using magnetic-particle technology to purify genomic DNA from animal tissues, paraffin embedded tissue, swab and blood stain. The purified genomic DNA can be directly used for downstream application such as quantitative PCR, restriction enzyme digestion, southern blotting, etc.

Preparation Before Using

1. Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at 2-8℃

For Paraffin-Embedded Tissue

Sample Preparation:

Additional Requirements: Xylene(or Substitutes), Ethanol (96-100%), Microcentrifuge Tube.

Suggested Xylene Substitute: A5597(Sigma), Neo-Clear(Merck), CitriSolv(Fisher).

1. Slice small section (5-10μm) of paraffin-embedded tissue and transfer to a microcentrifuge tube.
   Discard the first 2-3 sections, if the surface of paraffin sample has been exposed to air.
2. Add 1ml xylene(or substitute) to the tube and vortex vigorously for 10sec. Then incubate at 60℃ for 10min.
3. Centrifuge at full speed for 3min at room temperature.
4. Remove the supernatant carefully by pipetting, then add 1ml ethanol (96-100%) to the pellet and mix by vortexing for 10sec.
5. Centrifuge at full speed for 5min at room temperature.
6. Remove the supernatant carefully by pipetting, then add again of 1ml ethanol (96-100%) to the pellet and mix by vortexing for 10sec to wash again.
7. Centrifuge at full speed for 5min.
8. Remove residual ethanol with a fine pipette tip, then open the tube and incubate at 55℃ for 5min until all residual ethanol has been evaporated.
9. Add 400μl GT Buffer and 20μl Proteinase K(10mg/ml) to the tube and mix by vortexing.
10. Incubate at 55℃ for 90min until the sample has been completely lysed.
11. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
12. Pipette 400μl of clear tissue solution to the MagCore® Sample Tube.
13. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
14. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
15. Run Code 401 program at MagCore®.

For Swab Sample

Additional Requirements: PBS and Microcentrifuge Tube.

1. Separate the swab cotton form the stick. Place the swab into a 2ml microcentrifuge tube, add 500μl or more of GT Buffer and 20μl Proteinase K(10mg/ml).
2. Incubate the sample lyaste at 55℃ for 30min.
   For Buccal Swab sample, donor should not ingest anything for at least 30min prior to sample collection.
3. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
4. Pipette 400μl of clear tissue solution to the MagCore® Sample Tube.
5. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
6. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
7. Run Code 401 program at MagCore®.

For Solid Animal Tissue

Additional Requirements: Microcentrifuge Tube.

1. Cut the solid tissue to small pieces (up to 30 mg) and put into a microcentrifuge tube.
2. Add 400µl GT Buffer and 20µl Proteinase K(10mg/ml) to the tube and mix by vortexing.
3. Incubate at 55℃ for 90min until the sample has been completely lysed.
4. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
5. Pipette 400µl of clear tissue solution to the MagCore® Sample Tube.
6. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
7. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
8. Run Code 401 program at MagCore®.

For Stool Sample

Additional Requirements: Microcentrifuge Tube.

1. Weight 180-200mg stool in a 2ml microcentrifuge tube and place on ice. If the sample is liquid, pipet 200µl into microcentrifuge tube. Cut the end of pipet tip to make pipetting easier. If the sample is frozen, use a scalpel or spatula to scrape bits of stool into microcentrifuge tube on ice.

   Recommend Step: Add 1ml TE buffer (10 mM Tris -Cl; 1 mM EDTA, pH 8). Resuspend the sample by vigorous vortexing for 30 secs. Centrifuge the sample mixture for 15 min at 4,000 x g and discard supernatant.
2. Add 1.5ml GT Buffer to sample. Vortex continuously for 1 min or until the stool sample is thoroughly homogenized. This is very important to vortex sample thoroughly to ensure maximum DNA concentration in the final elutes.
3. Incubate the suspension for 5 min at 70℃. This step can increase DNA recovery 3-5 fold, if the sample target is Gram-positive bacteria, please increase to 95℃ for cells lysis.
4. Vortex for 15 seconds and centrifuge sample at full speed (13,000rpm) for 1 min to pellet stool particles.
5. Pipet 400µl of the supernatant into a new 1.5ml microcentrifuge tube.
6. Add 20µl Proteinase K (10mg/ml) to the sample mixture and vortex to mix. Incubate at 60℃ for 2~3 hours to lyse the sample.
7. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
8. Pipette 400µl of clear tissue solution to the MagCore® Sample Tube.
9. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
10. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
11. Run Code 401 program at MagCore®.

For Feed-Soil Sample

1. Apply 30~40mg feed or soil samples into a 1.5 ml microcentrifuge tube.
2. Add 20µl (10mg/ml) Proteinase K and followed by adding 500µl of GT Buffer. Vortex gently until the powder suspend in GT buffer.
3. Incubate the mixture at 56℃ for 15mins. Invert the tube every 2~3mins during incubation.
   Typically 15mins incubation can lysis more than 90% cells. Extend incubation time to 20mins can increase 10% of yield.
4. Centrifuge the mixture for 3 min at full speed.
5. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
6. Pipette 400µl of clear tissue solution to the MagCore® Sample Tube.
7. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
8. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
9. Run Code 401 program at MagCore®.

For Dried Blood Spot

1. Cut 3mm diameter punches from a dried blood spot with a single-hole paper punch. Place up to 3 blood card into a 1.5ml microcentrifuge tube.
2. Add 400~500µl GT buffer into the microcentrifuge tube and continue to homogenize the sample tissue with grinding.
3. Add 20µl Proteinase K (10mg/ml) to the sample mixture and vortex to mix. Incubate at 60℃ for 1 hour to lyse the sample.
4. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
5. Pipette 400ul of clear tissue solution to the MagCore® Sample Tube.
6. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
7. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
8. Run Code 401 program at MagCore®.

Optional Step: RNA Degradation

If RNA-Free genomic DNA is required, perform these optional steps before adding Proteinase K.

1. Add 4µl RNase A (not provided, 50mg/ml) into the sample lysate.
2. Incubate the sample at room temperature for 20min.

Cigarette Butts Protocol

Sample Preparation

1. Cut 1 cm^2 piece of outer paper from the end of the cigarette or filter. Cut this piece into 6 smaller pieces. Transfer the pieces to a 1.5 ml microcentrifuge tube.

Cell Lysis

1. Add 500µl GT buffer and 20µl Proteinase K, close the lid, and mix for 10 sec. Incubate at 60℃ for 1 hour to lyse the sample.
2. Briefly centrifuge the tube to remove drops from the inside of the lid.
3. Pipette 400µl of clear tissue solution to the MagCore® Sample Tube.
2. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
3. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
4. Run Code 401 program at MagCore®.

Hair Roots Protocol

Sample Preparation

1. Cut the hair roots into 0.5–1 cm pieces, and transfer them to the 1.5 ml microcentrifuge tube.

Cell Lysis

1. Add 500µl GT buffer and 20µl Proteinase K, close the lid, and mix for 10 sec. Incubate at 60℃ for 1 hour to lyse the sample.
2. Briefly centrifuge the tube to remove drops from the inside of the lid.
3. Pipette 400µl of clear tissue solution to the MagCore® Sample Tube.
4. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
5. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
6. Run Code 401 program at MagCore®.

Chewing Gum Protocol

Sample Preparation

1. Cut up to 30 mg of chewing gum into small pieces and transfer them to a 1.5 ml microcentrifuge tube.

Cell Lysis

1. Add 500µl GT buffer and 20µl Proteinase K, close the lid, and mix for 10 sec. Incubate at 60℃ for 1~3 hours to lyse the sample.
2. Briefly centrifuge the tube to remove drops from the inside of the lid.
3. Pipette 400µl of clear tissue solution to the MagCore® Sample Tube.
4. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
5. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
6. Run Code 401 program at MagCore®.

Betel Nut Residue Protocol

Sample Preparation

1. Cut up to 30 mg of betel nut residue into small pieces and transfer them to a 1.5 ml microcentrifuge tube.

Cell Lysis

1. Add 500µl GT buffer and 20µl Proteinase K, close the lid, and mix for 10 sec. Incubate at 60℃ for 1~3 hours to lyse the sample.
2. Briefly centrifuge the tube to remove drops from the inside of the lid.
3. Pipette 400µl of clear tissue solution to the MagCore® Sample Tube.
4. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
5. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
6. Run Code 401 program at MagCore®.

Saliva Protocol

Sample Preparation

1. For saliva sample, donor should not ingest anything for at least 30min prior to sample collection.
2. Prepare PBS Buffer and 15 ml tube.

Cell Lysis

1. Apply the 1 ml saliva and add 4 ml PBS buffer (not provided).
2. Centrifuge at 1800 x g for 5 min, and then carefully discard the supernatant.
3. Resuspend the pellet in 400µl GT buffer.
4. Add 20µl Proteinase K, close the lid, and mix for 10 sec. Incubate at 70°C for 10 minutes to lyse the sample.
5. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
6. Pipette 400µl of clear tissue solution to the MagCore® Sample Tube.
7. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
8. Put Elution Tube and Tip Plus Holder Set (HF16,Compact) / Pipette Tip (Super, Plus) into the correct wells of T-Rack. (see page 3-10)
9. Run Code 401 program at MagCore®.

Cultured Yeast Protocol

- **Additional requirements:** Sorbitol Buffer, Lyticase or Zymolase, Microcentrifuge tube.
- **Preparation of Sorbitol Buffer:**

  1.2 M sorbitol, 10mM CaCl2, 0.1M Tris-Cl pH 7.5. Sterilize by filtration and store at 2-8 ℃

Sample Preparation

1. Harvest 3ml yeast cells (up to $5x10^7$ cells) by centrifugation at 5000 x g for 10 minutes. Discard the supernatant and carefully remove any remaining media by aspiration.
2. Resuspend the cell pellet in 600µl sorbitol buffer (not provided).

Cell Lysis

1. Add 200U Lyticase or Zymolase (not provided). Incubate at 30℃ for 30 minutes. Centrifuge the mixture for 10 min at 2,000 x g to harvest Spheroplast.
2. Remove the supernatant and add 400µl of GT Buffer to the tube and vortex or pipette to resuspend the cell pellet.
3. Incubate at 55℃ for 90min until the sample has been completely lysed.
4. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5 min to get clear tissue solution in the collection tube.
5. Pipette 400µl of clear tissue solution to the MagCore® Sample Tube.
6. Put the prepared Sample Tube into the correct well of T-Rack. (see page 3-10)
7. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
8. Run Code 401 program at MagCore®.

MagCore® Genomic DNA FFPE One-Step Kit

For extraction of total DNA from formalin-fixed paraffin-embedded (FFPE) tissue by using MagCore® System.
Applicable Models : HF16, Compact, HF48, Super, HF16 Plus, Plus II

Cartridge Code 405

Cat. No. MGF-01 // MGF-03

Kit Contents

Check that the following parts are included in addition to the main unit:

Cat.No. MGF-01 Contents:

Pre-filled Cartridge Reagent	*36 pcs.*
Pipet Tip plus Holder Set	*72sets.*
Elution Tube	*36 pcs.*
Sula Oil (25 ml)	*1 pcs.*
Proteinase K(11mg)	*1 pcs.*
PK Storage Buffer	*1 pcs.*
Thermostable Cap	*36 pcs.*

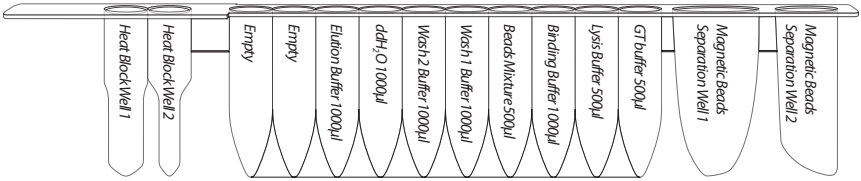
Cat.No. MGF-03 Contents:

Pre-filled Cartridge Reagent	*72 pcs.*
Pipet Tip plus Holder Set	*150 sets.*
Elution Tube	*75 pcs.*
Sula Oil (50ml)	*1 pcs.*
Proteinase K(11mg)	*2 pcs.*
PK Storage Buffer	*2 pcs.*
Thermostable Cap	*75 pcs.*

Storage and Stability:

1. This kit should be stored at room temperature.
2. Proteinase K should be stored at 2-8 °C upon arrival.
3. Shelf Life: 18 Months.

Cartridge Contents :



Description

MagCore® Genomic DNA FFPE One-Step Kit is designed for purification of total DNA from FFPE tissues by using MagCore® instruments. It features the method, One-Step Heating, to melt paraffin and lyse tissue samples at the same time without harmful reagents involved such as xylene. Two protocols are designed and optimized for different sizes of tissues: 2 hrs for small samples/ 16 hrs for large samples (Please see "important notes"). DNA will be extracted fast and economically based on the cellulose coated magnetic bead technology.

Applications

Use magnetic-particle technology to purify genomic DNA from FFPE tissue. The purified genomic DNA can be directly used for downstream application such as PCR, real-time PCR, restriction enzyme digestion, southern blotting, etc.

Preparation Before Using

1. Add 1.1 ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10 mg/ml) at -20℃.

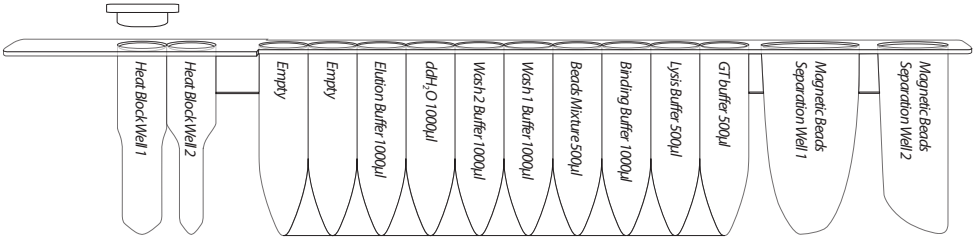
For Needle-Like FFPE Tissue Slices

1. 1. Add 500 µl Sula Oil, 20 µl PK and the FFPE tissue sample to the bottom of Heat Block Well 1 of the cartridge and then cover it up with the Thermostable Cap.

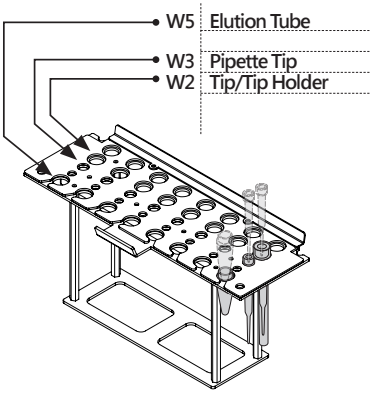
   Note: If the tissue is too large to lyse (the surface area over 300 mm^2) , cut it in 4 sections (Please see "important notes step 3") before adding in the heat block well 1 would be suggested. Make sure the tissue is at the bottom of the well to avoid clipping it by Thermostable cap.
2. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
3. Run Code 405 program at MagCore®.

For Glass-Slide Samples

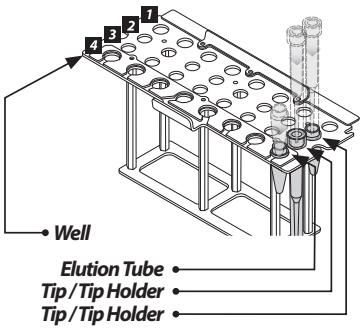
1. Drop several Sula Oil on the glass slide and scrape them from the slide carefully, then put in the bottom of Heat Block Well 1.
2. Add 500 µl Sula Oil and 20 µl PK into Heat Block well 1, rinse remaining sample on the wall and blade, then cover it up with the Thermostable Cap.
3. Put Elution Tube and Tip Plus Holder Set (HF16, Compact) / Pipette Tip (Super, Plus) into the correct wells of the T-Rack. (see page 3-10)
4. Run Code 405 program at MagCore®.



MagCore® Super / MagCore® HF16 Plus

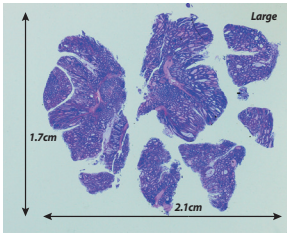


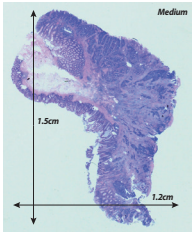
MagCore® HF16 / MagCore® Compact

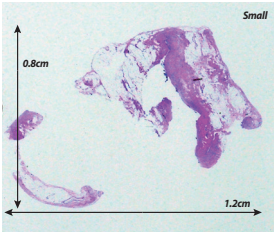


Important Notes

1. The surface area of the FFPE tissue sample could be measured as following examples:







2. Sample amount of preparation can be 1-5 scrolls, each with a thickness up to 5μm. One FFPE scroll could be enough to analyze if the surface area is over 200 mm^2.

Surface Area (mm_2)	Sample Scroll
200 ↑	1
100-200	1-2
50-100	2-3
50 ↓	3-5 (Don't over load 5 scrolls)

*Overloading the sample or paraffin will clog the tip and decrease the yield.

3. If the tissue sample is over 300 mm^2, we recommend cutting it into 4 sections as following examples:


4. If you have no information about the sample, we recommend starting with no more than 1 scroll and cutting it into 4 sections per preparation.
5. Sula Oil is a deparaffin buffer. The capacity of the Sula Oil (500 μl) is about 20 mg paraffin per preparation.
6. In MagCore®405 program, two different lyse time are provided: 2hr and 16hr.

Remarks

1. Both 2hr and 16hr program can extract DNA from FFPE sample.
   Choose 2hr program for saving time; choose 16hr for higher yield.
2. If you want to increase DNA yield, an overnight incubation(16hr program) can be performed, but it may result in greater DNA fragmentation.

Troubleshooting

Symptoms	Comments and Suggestions
Low or NO DNA product	1. The sample was lysed insufficiently. Make sure the proteinase K was stored at -20 ℃, and repeat the procedure using fresh PK. 2. The sample was too large to lyse completely. The large FFPE tissue was suggested cutting into 4 sections, and one scroll was enough for extraction. Clogging tip will affect the extraction process.
Poor PCR results	1. Poor quality FFPE samples. Fixation condition can affect PCR performance, such as long-time storage in fixative. 2. DNA fragments. DNA purified from FFPE samples may be fragmented due to formalin fixation, so we suggest keeping amplicons as short as possible for PCR.
Clogging tip or liquid up to the tip filter	1. The sample was too large to pipetting. Large tissue clogged the tip would result the liquid up to the tip filter or the extraction cannot finish. We suggest cutting the tissue before adding in the Heat Block well 1. 2. The sample was too much to pipetting. Do not extract too much scrolls at a time. For large tissue, one scroll is enough for extraction; for small tissue, we suggest not over 20mg of FFPE.

MagCore® Forensic DNA Direct Kit

For extracting genomic DNA from forensic samples
Applicable Models: Super, HF16 Plus, Plus II

Cartridge Code 406

Cat.No. MFC-03

Kit Contents

Check that the following parts are included in addition to the main unit:

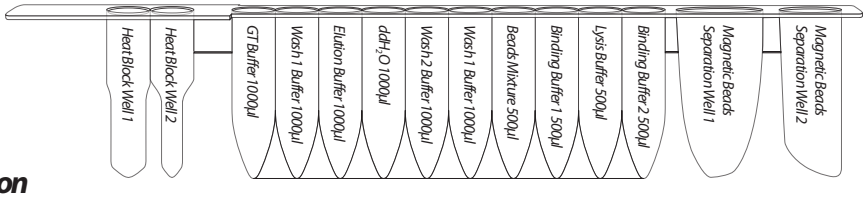
Cat.No. MFC-03 Contents:

Pre-filled Cartridge Reagent	*72 pcs.*
Pipette Tip	*75 pcs.*
FS Tip	*75 pcs.*
200 µl SP Tip	*75 pcs.*
Elution Tube	*75pcs.*
Proteinase K(11mg)	*2 pcs.*
PK Storage Buffer	*2 pcs.*
Carrier RNA(1mg)	*1 pcs.*
RNase Free Water	*1 pcs.*

Storage and Stability:

1. This kit should be stored at room temperature.
2. Carrier RNA should be stored at -20°C when mixing with RNase Free Water.
3. Proteinase K should be stored at 2-8 °C upon arrival.
4. Shelf Life: 12 Months.

Cartridge Contents :



Description

MagCore® Genomic DNA Forensic Kit is designed for purification of total DNA from forensic samples such as dried blood spot, swabs, cigarette butts, chewing gum, hair roots, seminal stain and nail clippings by using MagCore® auto-extraction instrument. It features the method; solid samples can be fully automated purified by the machine without pre-treatment.

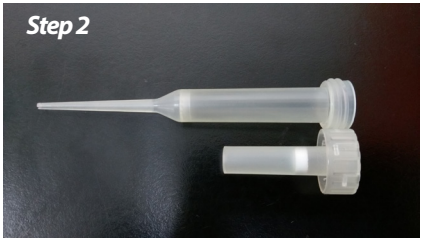
Applications

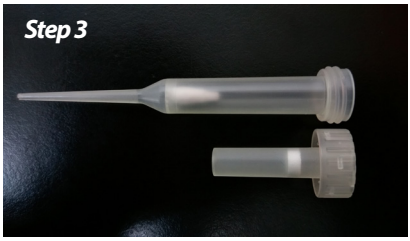
The usage of magnetic-particle technology is to purify genomic DNA from forensic samples. The purified genomic DNA can be directly used for downstream applications such as STR, PCR, real-time PCR, restriction enzyme digestion, southern blotting, etc.

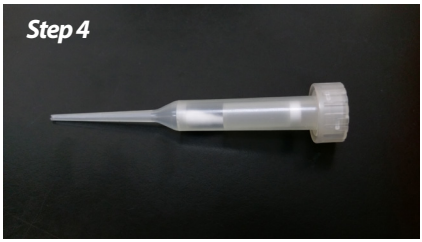
Preparation Before Using

1. Add 1.0 ml RNase Free Water to the Carrier RNA tube and mix by vortexing. Store prepared Carrier RNA (1mg/ml) at -20℃.
2. Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20℃
3. Please confirm the software of the instrument is updated to the latest version by checking if the program code contains 406A, 406B and 406C from the cartridge number selection page, if not, please contact your local distributor.

FS Tip Operation Steps

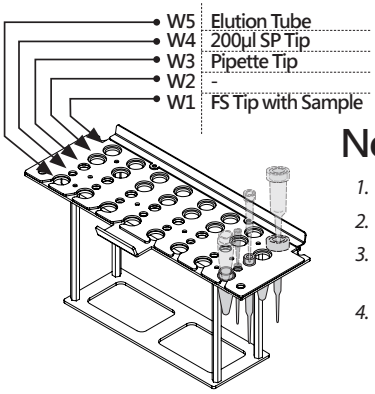






1. Take FS Tip out.
2. Unscrew the FS Tip lid.
3. Transfer the sample into the bottom of FS Tip.

⚠ **4. Screw the lid moderately, not over tight to prevent tip deformation and leakage of liquid.**



Notes

1. Sample must be placed at the bottom of the FS Tip.
2. It is not recommended to perform the optical test for elution volumes of 30µl.
3. For the optical test, please make sure that the Magcore® Cuvettes are placed in the Cartridge Rack.
4. 5µl of Carrier RNA (1mg/ml) and 20µl of proteinase K (10mg/ml) must be added to the bottom of Heat Block Well1.

Dried Blood Spot Protocol

Sample Preparation

1. Punch 3mm-diameter holes from a dried blood spot with a single-hole paper punch. Place up to 3 punches into the bottom of FS Tip.
2. Add 5µl Carrier RNA (1mg/ml) and 20µl proteinase K (10mg/ml) to the bottom of Heat Block Well 1.
3. Put the 406 cartridges into Cartridge Rack.

Place the FS Tip (with Sample) into **well 1**, the Pipette Tip into **well 3**, the 200µl SP Tip into **well 4** and the Elution Tube into **well 5** of T-rack.
Run Code **406C** program at Magcore® Super/Plus.

Swab Protocol

Sample Preparation

1. Separate the swab cotton from its stick with scissors. Place the cotton at the bottom of the FS Tip.
2. Add 5µl Carrier RNA (1mg/ml) and 20µl proteinase K (10mg/ml) to the bottom of **Heat Block Well 1**.
3. Put the 406 cartridges into Cartridge Rack.
4. Place the FS Tip (with Sample) into **well 1**, the Pipette Tip into **well 3**, the 200µl SP Tip into **well 4** and the Elution Tube into **well 5** of T-rack.
5. For blood swab, run Code **406C** program at Magcore® Super; for saliva swab, run Code **406A** program at Magcore® Super/Plus.

Cigarette Butts Protocol

Sample preparation

1. Cut off 0.5 cm thick of the filter with tipping paper from the filtration zone. Transfer a piece into the bottom of FS Tip.
2. Add 5µl Carrier RNA (1mg/ml) and 20µl proteinase K (10mg/ml) to the bottom of **Heat Block Well 1**.
3. Put the 406 cartridges into Cartridge Rack.
4. Place the FS Tip (with Sample) into **well 1**, the Pipette Tip into **well 3**, the 200µl SP Tip into **well 4** and the Elution Tube into **well 5** of T-rack.
5. Run Code **406B** program at Magcore® Super/Plus.

Chewing Gum Protocol

Sample Preparation

1. Cut off a piece of chewing gum(≤30mg).Transfer it into the bottom of FS Tip.
2. Add 5µl Carrier RNA (1mg/ml) and 20µl proteinase K (10mg/ml) to the bottom of **Heat Block Well 1**.
3. Put the 406 cartridges into Cartridge Rack.
4. Place the FS Tip (with Sample) into **well 1**, the Pipette Tip into **well 3**, the 200µl SP Tip into **well 4** and the Elution Tube into **well 5** of T-rack.
5. Run Code **406B** program at Magcore® Super/Plus.

Hair Roots Protocol

Sample preparation

1. Cut off 0.5-1 cm piece starting from the hair bulb and transfer it into the bottom of FS Tip.
2. Add 5µl Carrier RNA (1mg/ml) and 20µl proteinase K (10mg/ml) to the bottom of **Heat Block Well 1**.
3. Add 10µl DTT (1M) (not provided) to the bottom of **Heat Block Well 1**.
4. Put the 406 cartridges into Cartridge Rack.
5. Place the FS Tip (with Sample) into **well 1**, the Pipette Tip into **well 3**, the 200µl SP Tip into **well 4** and the Elution Tube into **well 5** of T-rack.
6. Run Code **406B** program at Magcore® Super/Plus.

Seminal Stain Protocol

Sample preparation

1. Place a piece of stained fabric or tissue paper (≤0.5cm2) into the bottom of the FS Tip.
2. Add 5µl Carrier RNA (1mg/ml) and 20µl proteinase K (10mg/ml) to the bottom of **Heat Block Well 1**.
3. Add 10µl DTT (1M) (not provided) into Heat Block Well 1.
4. Put the 406 cartridges into Cartridge Rack.
5. Place the FS Tip (with Sample) into **well 1**, the Pipette Tip into **well 3**, the 200µl SP Tip into **well 4** and the Elution Tube into **well 5** of T-rack.
6. Run Code **406C** program at Magcore® Super/Plus.

Nail Clippings Protocol

Sample preparation

1. Transfer the nail clippings(≤10 mg) into the bottom of FS Tip.
2. Add 5µl Carrier RNA (1mg/ml) and 20µl proteinase K (10mg/ml) to the bottom of **Heat Block Well 1**.
3. Add 10µl DTT (1M) (not provided) to the bottom of **Heat Block Well 1**.
4. Put the 406 cartridges into Cartridge Rack.
5. Place the FS Tip (with Sample) into **well 1**, the Pipette Tip into **well 3**, the 200µl SP Tip into **well 4** and the Elution Tube into **well 5** of T-rack.
6. Run Code **406C** program at Magcore® Super/Plus.

Selection Guide

Sample / Program	Guthrie card/Paper		Swab		Fabric		Cigarette butt	Hair root	Seminal stain	Chewing gum	Nail clipping
	Blood	Saliva	Blood	Saliva	Blood	Saliva					
406A		■		■		■					
406B	□		□		□		■	■	□	■	
406C	■		■		■				■		■

■ : Recommended program □ : Compatible program