VetMAX™ Ruminant Rotavirus & Coronavirus Kit

Nucleic acid purification protocols optimized for use with the kit (Cat. No. RRC50)

Pub. No. MAN0019290 Rev. A.0

Species	Sample matrices	Test type
• Bovine • Equine	Feces	Individual

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from thermofisher.com/support.

WARNING! BIOHAZARD. Read the biological hazard safety information at this product's page at thermofisher.com. Follow all applicable local, state/provincial, and/or national regulations for working with biological samples.

Purpose of this guide

This guide describes rotavirus and coronavirus RNA purification protocols that have been validated and optimized for downstream use with the Applied Biosystems™ VetMAX™ Ruminant Rotavirus & Coronavirus Kit (Cat. No. RRC50).

- Automated nucleic acid purification is performed using one of the following instruments: KingFisher™ Flex, MagMAX™ Express-96, KingFisher™ mL, or KingFisher™ Duo Prime.
- Manual nucleic acid purification uses silica-based spin columns.

Sample selection

Sample type	Type of analysis	Quantity required
Feces	Individual	1 mL of liquid feces or 1 g of solid feces

Sample storage

After collection, maintain fecal samples at 2°C to 8°C until use (up to 8 days).

After use or after 8 days, store samples below –16°C for up to 1 year, or below –70°C for long-term storage.

Required materials not supplied

Unless otherwise indicated, all materials are available through **thermofisher.com**. "MLS" indicates that the material is available from **fisherscientific.com** or another major laboratory supplier.

Catalog numbers that appear as links open the web pages for those products.

Materials required for sample collection, preparation, and nucleic acid purification

Table 1 Materials required for all sample preparation methods

Item	Source
Equipment	
Type II Biological Safety Cabinet (BSCII)	MLS
Benchtop microcentrifuge	MLS
Laboratory mixer, vortex or equivalent	MLS
Adjustable precision micropipettors (range of 1 µL to 1,000 µL)	MLS
PYREX™ Solid Glass Beads for Distillation Columns (5 mm), or equivalent 5-mm glass beads	Fisher Scientific™ 11-312-10C
Precision scale[1]	MLS
Consumables	
Aerosol-resistant, nuclease-free pipette tips	MLS
1.5-mL and 2.0-mL DNase/RNase-free microtubes	MLS
10-mL tubes	MLS
Reagents	
5 - IPC Rota Corona	From the VetMAX™ Ruminant Rotavirus & Coronavirus Kit (Cat. No. RRC50).
Nuclease-free water	AM9932
PBS (1X), pH 7.4	MLS

[1] Required only for purification from solid fecal samples.

Additional materials required for automated nucleic acid purification

Table 2 Materials required for the MagMAX™ CORE Nucleic Acid Purification Kit

Item	Source
Instrument, one of the following:	
KingFisher™ Flex Purification System	Contact your local sales office.
MagMAX™ Express-96 Magnetic Particle Processor	
KingFisher™ Duo Prime Purification System	
KingFisher™ mL Purification System	
Equipment	
Reagent reservoir	MLS
Consumables	
Adhesive PCR Plate Foils, or equivalent	AB0626
Consumables for the KingFisher™ Flex and MagMAX™ Express-96 instruments: • KingFisher™ 96 Deep-Well Plate • KingFisher™ 96 KF microplates • KingFisher™ 96 tip comb for DW magnets	 • 95040450 • 97002540 • 97002534
Consumables for the KingFisher™ Duo Prime and KingFisher™ mL instruments	See Table 7 on page 12.
Kits and reagents	
MagMAX™ CORE Nucleic Acid Purification Kit	A32700 or A32702

Table 3 Materials required for the MagVet™ Universal Isolation Kit

Item	Source
Instrument, one of the following:	
KingFisher™ Flex Purification System	Contact your local sales office.
MagMAX™ Express-96 Magnetic Particle Processor	
KingFisher™ mL Purification System	
Equipment	
Reagent reservoir	MLS
Kits and reagents	
MagVet™ Universal Isolation Kit	MV384
Ethanol, 80%	MLS

Additional materials required for manual nucleic acid purification

Item	Source
One of the following kits: • QIAamp™ Viral RNA Mini Kit • NucleoSpin™ RNA Virus kit	 • Qiagen 52904 • Macherey Nagel 740956
Ethanol, 96–100%	MLS

Procedural guidelines

Prepare at least one mock-purified sample for use as a negative extraction control—use PBS (1X), pH 7.4, or nuclease-free water in place of the test sample, unless otherwise directed. Process the mock-purified sample concurrently with the test samples, using the same nucleic acid purification protocol.

Purify nucleic acid using the MagMAX™ CORE Nucleic Acid Purification Kit (automated method)

Follow this procedure if you are using these instruments:

- KingFisher™ Flex
- MagMAX™ Express-96

Follow Appendix B, "Purification with the KingFisher™ Duo Prime or KingFisher™ mL instrument" if you are using these instruments:

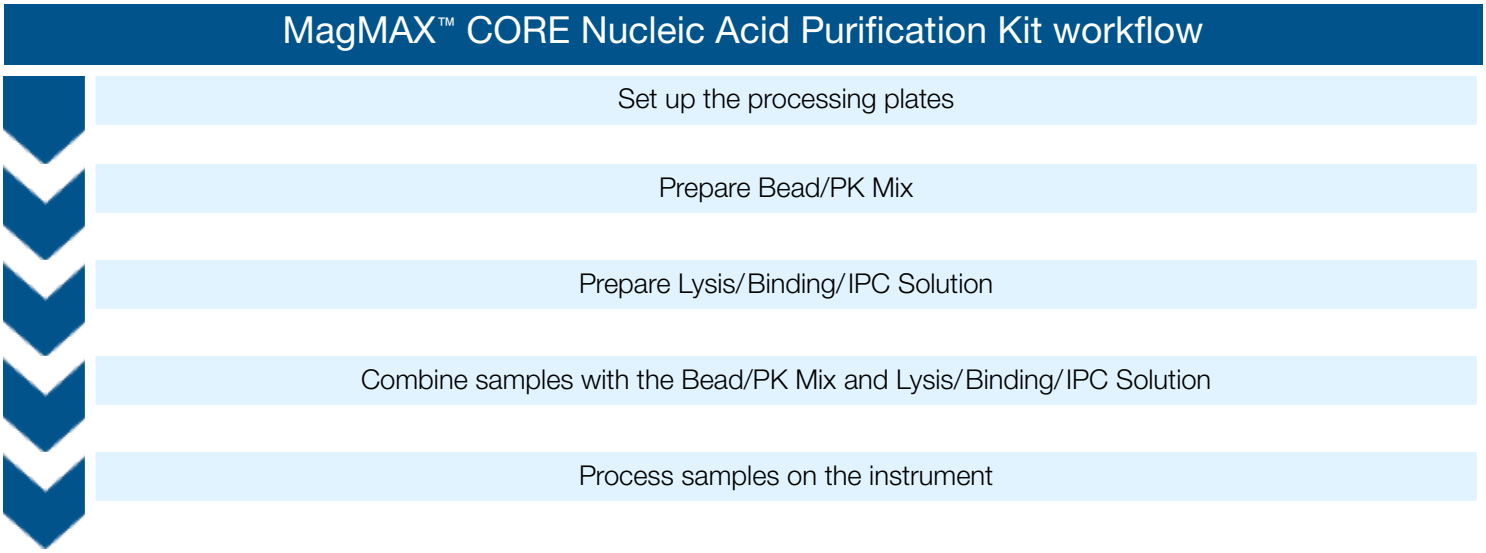
- KingFisher™ Duo Prime
- KingFisher™ mL

Overview

This procedure is designed for rapid purification of viral RNA from fecal samples.

If you are processing a combination of sample types, an alternative protocol is available. See Appendix A, "(Alternative protocol) Process a combination of sample types using the MagMAX™ CORE Nucleic Acid Purification Kit".

Workflow



Procedural guidelines

- Before use, invert bottles of solutions and buffers to ensure thorough mixing.
- Mix samples with reagents using a plate shaker or by pipetting up and down.

  Note: Do not use a plate shaker with the tube strips required by the KingFisher™ mL instrument.
- To prevent cross-contamination:
  - Cover the plate or tube strip during the incubation and shaking steps, to prevent spill-over.
  - Carefully pipet reagents and samples, to avoid splashing.
- To prevent nuclease contamination:
  - Wear laboratory gloves during the procedures. Gloves protect you from the reagents, and they protect the nucleic acid from nucleases that are present on skin.
  - Use nucleic acid-free pipette tips to handle the reagents, and avoid putting used tips into the reagent containers.
  - Decontaminate lab benches and pipettes before you begin.

Before first use of the kit

Determine the maximum plate shaker setting

If a plate shaker is used, determine the maximum setting.

1. Verify that the plate fits securely on your shaker.
2. Add 1 mL of water to each well of the plate, then cover with sealing foil.
3. Determine the maximum setting that you can use on your shaker without any of the water splashing onto the sealing foil.

Download and install the script

The appropriate script for the MagMAX™ CORE Nucleic Acid Purification Kit must be installed on the instrument before first use.

1. On the MagMAX™ CORE Nucleic Acid Purification Kit product web page (at **thermofisher.com**, search by catalogue number), scroll to the **Product Literature** section.

2. Right-click the appropriate file to download the latest version of the `MagMAX_CORE` script for your instrument.

   Table 4 Recommended scripts

Instrument	Script name
KingFisher™ Flex	`MagMAX_CORE_Flex.bdz`
KingFisher™ 96 MagMAX™ Express-96	`MagMAX_CORE_KF-96.bdz`
KingFisher™ Duo Prime	`MagMAX_CORE_DUO.bdz`
KingFisher™ mL	`MagMAX_CORE_mL_no_heat.bdz`

   If required by your laboratory, use one of the following scripts, which do not heat the liquid during the elution step.

   Table 5 Alternate scripts without heated elution step

Instrument	Script name
KingFisher™ Flex	`MagMAX_CORE_Flex_no_heat.bdz`
KingFisher™ 96 MagMAX™ Express-96	`MagMAX_CORE_KF-96_no_heat.bdz`
KingFisher™ Duo Prime	`MagMAX_CORE_DUO_no_heat.bdz`
KingFisher™ mL	`MagMAX_CORE_mL_no_heat.bdz`

3. See your instrument user guide or contact Technical Support for instructions for installing the script.

Perform the purification procedure

1 Set up the processing plates

1.1. Set up the processing plates.

Table 6 Plate setup: KingFisher™ Flex or MagMAX™ Express-96 instrument

Plate ID	Plate position[1]	Plate type	Reagent	Volume per well
Wash Plate 1	2	Deep Well	MagMAX™ CORE Wash Solution 1	500 µL
Wash Plate 2	3	Deep Well	MagMAX™ CORE Wash Solution 2	500 µL
Elution	4	Standard	MagMAX™ CORE Elution Buffer	90 µL
Tip Comb	5	Standard	Place a tip comb in the plate.	

[1] Position on the instrument.

Note: To set up processing plates or tube strips for the KingFisher™ Duo Prime or KingFisher™ mL instrument, see Appendix B, "Purification with the KingFisher™ Duo Prime or KingFisher™ mL instrument".

1.2. *(Optional)* To prevent evaporation and contamination, cover the prepared processing plates with sealing foil until they are loaded into the instrument.

2 Prepare the sample

2.1. Add the following components to a 10-mL conical tube.

- Feces—1 mL of liquid sample or 1 g of solid sample
- Nuclease-free water or PBS (1X), pH 7.4—10 mL
- PYREX™ Solid Glass Beads for Distillation Columns (5 mm)—2 beads

2 Prepare the sample *(continued)*

2.2. Vortex vigorously, then incubate at room temperature for 5 to 10 minutes.

Note: Incubate the sample on a surface that is free of vibration to allow the contents to settle before transferring the supernatant.

2.3. Transfer 1 mL of the supernatant to a 1.5-mL tube.

2.4. Centrifuge at 15,000 × *g* for 1 minute.

2.5. Proceed with 200 µL of fecal supernatant.

3 Prepare Bead/PK Mix

Prepare new Bead/PK Mix for each processing run.

3.1. Vortex the MagMAX™ CORE Magnetic Beads thoroughly to ensure that the beads are fully resuspended.

3.2. Combine the following components for the required number of samples, plus 10% overage (recommended).

Component	Volume per sample
MagMAX™ CORE Magnetic Beads	20 µL
MagMAX™ CORE Proteinase K	10 µL
Total Bead/PK Mix	**30 µL**

(Optional) Store the Bead/PK Mix at 4°C for up to 1 week.

4 Prepare Lysis/Binding/IPC Solution

4.1. Combine the following components for the required number of samples, plus 10% overage (recommended).

Component	Volume per sample
MagMAX™ CORE Lysis Solution	400 µL
MagMAX™ CORE Binding Solution	400 µL
5 - IPC Rota Corona[1]	5 µL
Total Lysis/Binding/IPC Solution	**805 µL**

[1] Supplied with the VetMAX™ Ruminant Rotavirus & Coronavirus Kit (Cat. No. RRC50).

4.2. Invert the tube or bottle at least 10 times to mix.

5 Combine samples with the Bead/PK Mix and Lysis/Binding/IPC Solution

5.1. Invert the tube of Bead/PK Mix several times to resuspend the beads, then add 30 µL of the Bead/PK Mix to the appropriate wells in the sample plate or tube strip.

5.2. Transfer 200 µL of each fecal supernatant to a well or tube with Bead/PK Mix.

5.3. Mix the sample with the Bead/PK Mix for 2 minutes at room temperature according to your mixing method.

- **Using a plate shaker**—Shake vigorously for 2 minutes (see "Determine the maximum plate shaker setting" on page 4).
- **By pipetting**—Pipet up and down several times, then incubate for 2 minutes at room temperature. (For downstream processing on the KingFisher™ mL instrument, you must mix by pipetting.)

5.4. Add 800 µL of the Lysis/Binding/IPC Solution to each sample-containing well or tube.

5.5. Immediately proceed to process samples on the instrument (next section).

6 Process samples on the instrument

6.1. Select the appropriate script on the instrument (see "Download and install the script" on page 5).

6.2. Start the run, then load the prepared plates in the appropriate positions when prompted by the instrument.

Store purified nucleic acid on ice for immediate use, at –20°C for up to 1 month, or at –80°C for long-term storage.

Prepare samples for purification with other kits

1. Add the following components to a 10-mL conical tube.
   - Feces—1 mL of liquid sample or 1 g of solid sample
   - Nuclease-free water or PBS (1X), pH 7.4—4 mL
   - PYREX™ Solid Glass Beads for Distillation Columns (5 mm)—2 beads
2. Vortex vigorously for 1 minute or until the sample is suspended.
3. Transfer 1 mL of the homogenized sample to a 1.5-mL tube.
4. Centrifuge at 3,000 × *g* for 1 minute.
5. Proceed to RNA purification with the fecal supernatant.
   - "Purify nucleic acid using the MagVet™ Universal Isolation Kit (automated method)" on page 7
   - "Purify RNA using the QIAamp™ Viral RNA Mini Kit (manual method)" on page 8
   - "Purify RNA using the NucleoSpin™ RNA Virus kit (manual method)" on page 10

Purify nucleic acid using the MagVet™ Universal Isolation Kit (automated method)

The following protocol can be used with the KingFisher™ Flex, KingFisher™ mL, and MagMAX™ Express-96 instruments.

Before first use of the kit

- Prepare the NM1 Lysis Buffer—Transfer 100 mL of N1 Buffer to the bottle of M1 Buffer (25 mL), then vortex to mix thoroughly.

  Store the NM1 Lysis Buffer at room temperature for up to 1 year.

Before each use of the kit

Prepare NM2+Beads Mix—Combine the following components for the required number of samples plus 5–10% overage, then vortex to mix thoroughly.

Component	Volume per sample
NM2 Binding Solution	600 µL
NM_LSI_Beads	20 µL

Discard the NM2+Beads Mix after use.

Perform the purification procedure

1 Lyse the samples

Add the following components to the appropriate wells in the sample plate or tube strip.

Component	Volume per test sample	Volume per mock-purified sample
Prepared sample	135 µL of fecal supernatant	—
NM1 Lysis Buffer	250 µL	250 µL
5 - IPC Rota Corona	5 µL	5 µL

2 Set up the processing plates or tube strips

Set up the processing plates or tube strips outside the instrument as described in the following table.

Position[1]	Plate type[2]	Reagent	Volume per well
2	Deep Well	NM3 Wash Buffer	600 µL
3	Deep Well	NM4 Wash Buffer	600 µL
4	Deep Well	80% ethanol	600 µL
5	Standard	NM6 Elution Buffer	80 µL
6	Deep Well	Place a tip comb in the plate or tube strip.	

[1] Position on the instrument.
[2] Does not apply if using tube strips.

3 Process samples on the instrument

3.1. Vortex the NM2+Beads Mix thoroughly to ensure that the beads are fully resuspended.

3.2. Add 620 µL of NM2+Beads Mix to each sample and control.

3.3. Select the appropriate script on the instrument.

- KingFisher™ Flex/MagMAX™ Express-96: **NM_LSI_RRC96**
- KingFisher™ mL: **NM_LSI_15prep**

3.4. Start the run, then load the prepared plates in the appropriate positions when prompted by the instrument.

Load the sample plate or tube strip at position 1 on the instrument.

Note: If you are using the KingFisher™ mL instrument, load the tip comb and all of the tube strips at the same time. The instrument does not prompt you to load items individually.

3.5. At the end of the run, when prompted by the instrument, remove the plate or tubes containing the purified nucleic acid.

Instrument	Procedure
• KingFisher™ Flex • MagMAX™ Express-96	Remove the plate at position 5, then cover with an adhesive film.
KingFisher™ mL	Remove the tube strip at position 5, then transfer the purified nucleic acid to new microcentrifuge tubes.

Store the purified nucleic acid at 2–8°C for immediate use or below –16°C for long-term storage.

Purify RNA using the QIAamp™ Viral RNA Mini Kit (manual method)

Before first use of the kit

- Reconstitute the AVL+Carrier Buffer—Follow the recommendations of the supplier.
- Reconstitute the AW1 and AW2 Buffers—Add the required volume of 96–100% ethanol according to the recommendations of the supplier.

Perform the purification procedure

1 Lyse, then homogenize the samples

1.1. Combine the following components in the order indicated, then immediately proceed to the next step.

Component	Volume per test sample	Volume per mock-purified sample
Prepared sample	135 µL of fecal supernatant	—
Nuclease-free water or PBS (1X), pH 7.4	—	135 µL
AVL+Carrier Buffer	560 µL	560 µL
5 - IPC Rota Corona	5 µL	5 µL

1.2. Vortex for 15 seconds.

1.3. Incubate at room temperature for 10 minutes.

1.4. Add 560 µL of 96–100% ethanol to each sample, vortex for 15 seconds, then briefly centrifuge to collect the contents.

2 Bind the RNA to the column

2.1. Insert a QIAamp™ Viral RNA Mini Kit column into a collection tube, then transfer 630 µL of the sample to the column.

2.2. Cap the column, then centrifuge the assembly at 6,000 × *g* for 1 minute.

2.3. Discard the collection tube, then place the column on a new collection tube.

2.4. Transfer the remaining sample volume to the column, cap the column, then centrifuge at 6,000 × *g* for 1 minute.

2.5. Discard the collection tube, then place the column on a new collection tube.

3 Wash, then elute the RNA

3.1. Add 500 µL of AW1 Buffer to each column, cap the column, then centrifuge at 6,000 × *g* for 1 minute.

3.2. Discard the collection tube, then place the column on a new collection tube.

3.3. Add 500 µL of AW2 Buffer to each column, cap the column, then centrifuge at 14,000 × *g* for 1 minute.

3.4. Discard the collection tube, then place the column on a new collection tube.

3.5. Centrifuge at 14,000 × *g* for 3 minutes to dry the membrane.

3.6. Discard the collection tube.

3.7. Place the column on a new 1.5-mL microtube, then add 50 µL of AVE Buffer.

3.8. Cap the column, then incubate at room temperature for 1 minute.

3.9. Centrifuge at 6,000 × *g* for 1 minute, then discard the column.
The purified RNA is in the microtube.

Store the purified RNA at 2–8°C for immediate use or below –16°C for long-term storage.

Purify RNA using the NucleoSpin™ RNA Virus kit (manual method)

Before first use of the kit

- Reconstitute the RAV1+Carrier Buffer—Follow the recommendations of the supplier.
- Reconstitute the RAV3 Buffer—Add the required volume of 96–100% ethanol according to the recommendations of the supplier.

Perform the purification procedure

1 Lyse, then homogenize the samples

1.1. Combine the following components in the order indicated, then immediately proceed to the next step.

Component	Volume per test sample	Volume per mock-purified sample
Prepared sample	135 µL of fecal supernatant	—
Nuclease-free water or PBS (1X), pH 7.4	—	135 µL
RAV1+Carrier Buffer	560 µL	560 µL
5 - IPC Rota Corona	5 µL	5 µL

1.2. Vortex for 15 seconds.

1.3. Incubate at room temperature for 10 minutes.

1.4. Add 560 µL of 96–100% ethanol to each sample, vortex for 15 seconds, then briefly centrifuge to collect the contents.

2 Bind the RNA to the column

2.1. Insert a NucleoSpin™ RNA Virus kit column into a collection tube, then transfer 630 µL of the sample to the column.

2.2. Cap the column, then centrifuge the assembly at 8,000 × *g* for 1 minute.

2.3. Discard the collection tube, then place the column on a new collection tube.

2.4. Transfer the remaining sample volume to the column, cap the column, then centrifuge at 8,000 × *g* for 1 minute.

2.5. Discard the collection tube, then place the column on a new collection tube.

3 Wash, then elute the RNA

3.1. Add 500 µL of RAW Buffer to each column, cap the column, then centrifuge at 8,000 × *g* for 1 minute.

3.2. Discard the collection tube, then place the column on a new collection tube.

3.3. Add 600 µL of RAV3 Buffer to each column, cap the column, then centrifuge at 8,000 × *g* for 1 minute.

3.4. Discard the collection tube, then place the column on a new collection tube.

3.5. Centrifuge at 11,000 × *g* for 3 minutes to dry the membrane.

3.6. Discard the collection tube.

3.7. Place the column on a new 1.5-mL microtube, then add 50 µL of nuclease-free water.

3.8. Cap the column, then incubate at room temperature for 1 minute.

3.9. Centrifuge at 8,000 × *g* for 1 minute, then discard the column.
The purified RNA is in the microtube.

3	Wash, then elute the RNA *(continued)*	Store the purified RNA at 2–8°C for immediate use or below –16°C for long-term storage.

Good laboratory practices for PCR and RT-PCR

- Wear clean gloves and a clean lab coat.
  - Do not wear the same gloves and lab coat that you have previously used when handling amplified products or preparing samples.
- Change gloves if you suspect that they are contaminated.
- Maintain separate areas and dedicated equipment and supplies for:
  - Sample preparation and reaction setup.
  - Amplification and analysis of products.
- Do not bring amplified products into the reaction setup area.
- Open and close all sample tubes carefully. Avoid splashing or spraying samples.
- Keep reactions and components capped as much as possible.
- Use a positive-displacement pipettor or aerosol-resistant barrier pipette tips.
- Clean lab benches and equipment periodically with 10% bleach solution or DNA decontamination solution.

Appendix A *(Alternative protocol)* Process a combination of sample types using the MagMAX™ CORE Nucleic Acid Purification Kit

Follow this procedure if you are using these instruments:

- KingFisher™ Flex
- MagMAX™ Express-96

Follow Appendix B, "Purification with the KingFisher™ Duo Prime or KingFisher™ mL instrument" if you are using these instruments:

- KingFisher™ Duo Prime
- KingFisher™ mL

Before you begin

Follow the protocol, starting with setting up the processing plates through preparing the sample.

- "Set up the processing plates" on page 5
- "Prepare the sample" on page 5

Prepare Lysis/Binding/Bead/IPC Mix

1. Vortex the MagMAX™ CORE Magnetic Beads thoroughly to ensure that the beads are fully resuspended.
2. Combine the following components for the required number of samples, plus 10% overage (recommended).

Component	Volume per sample
MagMAX™ CORE Lysis Solution	400 µL
MagMAX™ CORE Binding Solution	400 µL
MagMAX™ CORE Magnetic Beads	20 µL
5 - IPC Rota Corona[1]	5 µL
Total Lysis/Binding/Bead/IPC Mix	**825 µL**

[1] Supplied with the VetMAX™ Ruminant Rotavirus & Coronavirus Kit (Cat. No. RRC50).

3. Invert the tube or bottle at least 10 times to mix.

Combine the sample with PK, then add the Lysis/Binding/Bead/IPC Mix

1. Add 10 µL of MagMAX™ CORE Proteinase K to the required wells in the plate or tube strip.
2. Transfer 200 µL of each prepared fecal supernatant to a well or tube with MagMAX™ CORE Proteinase K.
3. Mix the sample with Proteinase K for 2 minutes at room temperature according to your mixing method.
   - **Using a plate shaker**—Shake vigorously for 2 minutes (see "Determine the maximum plate shaker setting" on page 4).
   - **By pipetting**—Pipet up and down several times, then incubate for 2 minutes at room temperature. (For downstream processing on the KingFisher™ mL instrument, you must mix by pipetting.)
4. Invert the tube of Lysis/Binding/Bead/IPC Mix several times to resuspend the beads, then add 820 µL of Lysis/Binding/Bead/IPC Mix to each sample.
5. Immediately proceed to "Process samples on the instrument" on page 7.

   Note: If you are using the KingFisher™ Duo Prime or KingFisher™ mL instrument, see Appendix B, "Purification with the KingFisher™ Duo Prime or KingFisher™ mL instrument".

Appendix B Purification with the KingFisher™ Duo Prime or KingFisher™ mL instrument

Follow this procedure for purification with the MagMAX™ CORE Nucleic Acid Purification Kit using the KingFisher™ Duo Prime or KingFisher™ mL instrument.

Required materials not supplied

Table 7 Materials required for processing on the KingFisher™ Duo Prime and KingFisher™ mL instruments

Item	Source[1]
Consumables for the KingFisher™ Duo Prime instrument	
KingFisher™ Duo Combi pack for Microtiter 96 Deepwell plate (tip combs, plates, and elution strips for 96 samples)	97003530
KingFisher™ Duo Elution Strip (40 pieces)[2]	97003520
KingFisher™ Duo 12-tip comb for Microtiter 96 Deepwell plate (50 pieces)[2]	97003500
KingFisher™ Flex Microtiter Deep-Well 96 plates[2]	95040460
Consumables for the KingFisher™ mL instrument	
KingFisher™ mL Tubes and tip combs (for 240 samples)	97002141
KingFisher™ mL Tip comb (800 pieces)	97002111
KingFisher™ mL Tube (20 x 45 pieces)	97002121

[1] Unless otherwise indicated, all materials are available through thermofisher.com. "MLS" indicates that the material is available from fisherscientific.com or another major laboratory supplier.

[2] Included in the KingFisher™ Duo Combi pack (Cat. No. 97003530).

Purification procedure

Note: When performing this procedure for processing on the KingFisher™ mL instrument, mix samples by pipetting up and down. Do not use a plate shaker with the large tube strips required by this instrument.

1. Follow the protocol, starting with sample lysate preparation through combining the samples with beads and lysis solution.

   Note: Do not set up processing plates or tubes before preparing samples.

2. Add MagMAX™ CORE Wash Solutions and MagMAX™ CORE Elution Buffer to the indicated positions, according to your instrument.

Table 8 Plate setup: KingFisher™ Duo Prime instrument

Row ID	Row in the plate	Plate type	Reagent	Volume per well
Sample	A	Deep Well	Sample lysate/bead mix	Varies by sample
Wash 1	B		MagMAX™ CORE Wash Solution 1	500 µL
Wash 2	C		MagMAX™ CORE Wash Solution 2	500 µL
Elution[1]	Separate tube strip[2]	Elution strip	MagMAX™ CORE Elution Buffer	90 µL
Tip Comb	H	Deep Well	Place a tip comb in the plate.	

[1] Ensure that the elution strip is placed in the correct direction in the elution block.
[2] Placed on the heating element.

Table 9 Tube strip setup: KingFisher™ mL instrument

Position ID	Tube strip position	Tube	Reagent	Volume per well
Sample	1	Standard	Sample lysate/bead mix	Varies by sample
Wash 1	2		MagMAX™ CORE Wash Solution 1	500 µL
Wash 2	3		MagMAX™ CORE Wash Solution 2	500 µL
Elution	4		MagMAX™ CORE Elution Buffer	90 µL
Tip Comb	N/A	N/A	Slide the tip comb into the tip comb holder.	

3. Select the appropriate script on the instrument (see “Download and install the script” on page 5).

4. Start the run, then load the prepared plates or tube strips into the instrument at the same time. The instrument does not prompt you to load items individually.

Store purified nucleic acid on ice for immediate use, at –20°C for up to 1 month, or at –80°C for long-term storage.

Appendix C Documentation and support

Customer and technical support

Visit **thermofisher.com/support** for the latest service and support information.

- Worldwide contact telephone numbers
- Product support information
  - Product FAQs
  - Software, patches, and updates
  - Training for many applications and instruments
- Order and web support
- Product documentation
  - User guides, manuals, and protocols
  - Certificates of Analysis
  - Safety Data Sheets (SDSs; also known as MSDSs)

  Note: For SDSs for reagents and chemicals from other manufacturers, contact the manufacturer.

Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale at **www.thermofisher.com/us/en/home/global/terms-and-conditions.html**. If you have any questions, please contact Life Technologies at **www.thermofisher.com/support**.

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The information in this guide is subject to change without notice.

Revision history: Pub. No. MAN0019290

Revision	Date	Description
A.0	8 March 2021	New document translated from the French document (MAN0008865 Rev. B.0) with the following updates: • Added the MagMAX™ CORE Nucleic Acid Purification Kit protocol. • Made minor wording and formatting updates for consistency with related documents.