Hermes CORE

Automated purification of high-quality DNA and RNA from veterinary samples

Reference: 08337197

⚠ **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 HermesBiotech.com.

Product description

The HERMES CORE kit (Ref. 08337197) is specifically designed for Automated purification of high-quality DNA and RNA from veterinary samples. The kit utilizes MagMAX™ magnetic-bead technology, ensuring reproducible recovery of high-quality nucleic acid for a range of downstream analysis. This protocol guides users through automated isolation of RNA and DNA from different sample types using the KingFisher™ Flex Magnetic Particle Processor or the MagMAX™ Express-96 Deep Well Magnetic Particle Processor. The kit is also compatible with transport media specimens without any alterations to the workflow.

Contents and storage

Reagents that are provided in each kit support 96 reactions.

IMPORTANT! On receipt, store all plates and reagents in an upright position at room temperature (15°C to 25°C).

Table 1. MAGMAX CORE Prefilled Plates

Componet	Quantity	Storage
96 deep well plate filled with Binding and Lysis Solution. Samples will be added to this plate.	1	Store 15°C to 25°
Standard plate filled with Magnetic Beads	1	
96 deep well plate filled with Wash I Solution	1	
96 deep well plate filled with Wash II Solution	1	
Standard plate filled with Elution Solution	1	
96 deep well tip comb nested in a 96 deep well plate	1	
Proteinase K Solution	1 Tube	

Required materials not supplied

Unless otherwise indicated, all materials are available through **proquinorte.com**

Table 2 For automated protocol

Item	Proquinorte
Instrument	
KingFisher Flex Purification system	07234800
MagMAX™ Express-96 Deep Well Magnetic Particle Processor	07234800
Equipment	
Single and multichannel adjustable pipettors (1µL to 1,000 µL)	07432765 / 07432767 07432769
Laboratory mixer, vortex, or equivalent	08085156
Benchtop microcentrifuge capable of 15,000 × g	-
Tubes, plates and other consumables	
PBS (1x), pH 7.4 (without calcium and magnesium)	07228535
MicroAmp Clear Adhesive Film	07231264
MicroAmp Adhesive Film Applicator	4333183
Nonstick, RNase-free microcentrifuge tubes (1.5 mL and 2.0 mL)	00006464
Sterile aerosol barrier (filtered) pipette tips	00002105 / 00002106 00002107 / 00002110
(Optional) Internal positive control (IPC), one of the following:	
VetMAX™ Xeno™ Internal Positive Control DNA	A29764
VetMAX™ Xeno™ Internal Positive Control RNA	A29763
IPC supplied with your VetMAX™ PCR Kit	thermofisher.com

Table 3 Optional equipment

Item	Source
Biotang Inc Microplate Shaker, or equivalent titer plate shaker (for mixing beads with samples)	Fisher Scientific™

Procedural guidelines

• The plates provided in this kit are single use plates only. Do not reuse the plates.

• Ensure plates are stored upright for 24 hours before opening.

• Perform all steps at room temperature (15–25°C) unless otherwise noted.

• Yellowing of the Lysis/Binding and Wash I Solution is normal and will not impact the performance.

• Download and install the script on the instrument before first use:

*Ask your local provider (Proquinorte S.A.) for the appropiate script: Simple_CORE_v1.bdz (33min 46 sec)

Before each use of the kit

• Examine the plate containing the beads prior to opening. Ensure that the beads are at the bottom of each well. Hold the plate by the narrow end and sharply swing the sealed plate in a downward motion 5 times. Hold the plate on the opposite side and repeat. The plate may be gently centrifuged at 2,100 x g for 10-20 seconds if needed.

IMPORTANT! Do not over centrifuge the bead plate. This will compact the bead pellet and make it difficult for the instrument to pick up the beads from the plate.

Note: Beads are provided in excess in the bead plate. Some beads or coloration may remain in the bead plate after the extraction process has completed. This will not impact overall performance.

• To remove seals from prefilled plates, place the prefilled plate squarely onto the benchtop, secure the plate with one hand and grasp the seal at the lower left corner with the other hand. Using a gentle but steady motion, peel the seal of the plate diagonally toward the upper right corner without jostling the contents.

• If required by your assay, designate one well of the Sample Plate for a negative extraction control.

Simple Workflow

The Simple workflow is recommended for the following sample types:

- Biomed Diagnostics InPouch™ TF (Tritrichomonas foetus) culture
- Ear notch (triangular shape, approximately 1-cm width)
- Ear punch (circular shape, 2-to 3-mm diameter; PBS incubation)
- Milk
- Plasma
- Semen
- Serum
- Swabs—animal
- Tissue or organ
- Whole blood

Follow this procedure if you are using these instruments:

KingFisher™ Flex
MagMAX™ Express-96

Recommended workflows

Sample matrix	Nucleic acid	Recommended workflow
• Ear punch (circular shape, 2- to 3-mm diameter) in PBS • Ear notch (triangular shape, approximately 1-cm width) • Milk • Plasma • Serum	• Viral nucleic acid • Bacterial DNA	Simple
• Biomed Diagnostics InPouch TF (Tritrichomonas Simple foetus) culture	*Tritrichomonas foetusD NA*	
• Semen	Viral nucleic acid	
• Swabs- animal • Whole blood	• Viral nucleic acid • Genomic DNA	
• Tissue or organ	• Viral nucleic acid • Bacterial DNA	

Recommended workflows

Prepare samples according to sample type.

For…	Do this…
Biomed Diagnostics InPouch™ TF culture	Proceed with 300 µL of previously enriched culture media.
Ear notch (triangular shape, approximately 1-cm width)	1. Add one ear notch to a 5-mL specimen tube. 2. Add 2 mL of PBS, pH 7.4 to each sample. 3. Incubate at room temperature with or without shaking: • Without shaking—15 minutes • With moderate shaking—10 minutes 4. Proceed with 200 µL of supernatant.
Ear punch (circular shape, 2- to 3-mm diameter)	1. Add one ear punch to a 2-mL tube. 2. Add 200 µL of PBS, pH 7.4 to each sample. 3. Incubate at room temperature with or without shaking: • Without shaking—15 minutes • With moderate shaking—10 minutes 4. Proceed with 50–200 µL of supernatant.
Milk, plasma, serum or whole blood	Proceed with 200 µL of sample.
Semen	1. Add 500 µL of semen to a fresh tube. 2. Centrifuge at 15,000 × g for 2 minutes. 3. Proceed with 200 µL of supernatant.
Swabs—animal	Follow the manufacturer's recommended protocol, or follow this procedure: 1. Break off the tip of the swab and add to a 2-mL tube. 2. Add 1 mL of PBS, pH 7.4 to each sample. 3. Vortex for 3 minutes. 4. Proceed with 200 µL of supernatant.
Tissue or organ	1. Add the following components to a 2-mL tube: • Tissue—20 to 30 mg • PBS, pH 7.4—1 mL • PYREX™ Solid Glass Beads for Distillation Columns (3 mm)—2 beads 2. Disrupt (bead-beat) the samples in a Fisher Scientific™ Bead Mill 24 Homogenizer at 6 m/s for 45 seconds. 3. Centrifuge at 1,000 × g for 1 minute. 4. Proceed with 100 µL of supernatant.

Perform Nucleic Acid Isolation from samples using the KingFisher™ Flex instrument

IMPORTANT! Do not attempt to process more than the maximum volume allowed for each sample type. Yields and quality will be reduced.

1 Set up the instrument

1.1. Ensure that the instrument is set up with the proper magnetic head and the proper heat block, as indicated in the following table.

Component	Type
Magnetic head	96 deep well magnetic head
Heat block	96 standard plate heat block

IMPORTANT! Failure to use the proper magnetic head and heat block results in lower yields.

1.2. Ensure that the proper program has been loaded onto the instrument (Simple_CORE_v1.bdz)

2 Prepare Sample Plate

2.1. Remove the Elution Plate from the product box.

2.2. Remove the seal from the Elution Plate (for instructions on removing plate seals, see “Before each use of the kit” on page 2).
This is the final Elution Plate which will be slotted into deck position 5 on the instrument

2.3. Remove the Binding/Lysis Plate from the box (Sample Plate).

2.4. Remove the seal from the Binding/Lysis Plate (for instructions on removing plate seals, see “Before each use of the kit” on page 2). This is the Sample Plate which will be slotted into deck position 2 on the instrument after the samples, Proteinase K, and negative control are added.

2.5. Add the sample to the Sample Plate.

For…	Use…
Biomed Diagnostics InPouch™ TF culture	300 µL of supernatant
Ear notch (triangular shape, approximately 1-cm width) Semen Swabs—animal	200 µL of supernatant
Ear punch (circular shape, 2- to 3-mm diameter)	50–200 µL of supernatant
Milk, plasma, serum, or whole blood	200 µL of sample
Tissue or organ	100 µL of supernatant

2.6. Add the following reagents to the Sample Plate.

- Nuclease-free water (not DEPC-Treated): Add 200 µL to the negative control well.
- Proteinase K: Add 10µL to the sample layer of each sample-containing well

Note: Do not push the pipette tip into the bottom binding mix layer.
Mix by pipetting—Pipet up and down several times, then incubate for 2 minutes at room temperature.

2.7. Remove the tip comb and the remaining sealed reagent plates from the product box.

2.8. Remove the seals from the reagent plates (for instructions on removing plate seals, see “Before each use of the kit” on page 2).

2 Prepare Sample Plate

2.9. Confirm KingFisher™ Flex deck positions with the following table, then start the run.
Note: Deck positions are also denoted on labels on the plates.

Deck position	Prefilled plate	Contents	Final volume
1	Sample Plate	350µl of Binding Solution+ 350µl of Lysis Solution Add 10µl of Proteinase K Add 50 to 300µl of Sample	760µl-1010µl
2	Bead Plate	20µl of Magnetic beads+ 80µl of Nuclease Free Water	100µl
3	Wash I	500µL of Wash I	500µL
4	Wash II	500µL of Wash II	500µL
5	Elution Plate	90µL of Elution Solution	90µL
6	Tip comb	Tip Comb	96 deep well tip comp nested in a 96 deep well plate

2.9. At the end of the run, immediately remove the Elution Plate from the instrument, place on ice and cover with MicroAmp™ Clear Adhesive Film, then transfer the eluate to the final tube/plate of choice for final storage.

IMPORTANT! Immediately seal the plate containing the eluate to prevent evaporation.

Note: Significant bead carryover in the eluate may adversely impact performance of RT-PCR or other downstream assays. If there are beads left in the Elution Plate after processing is complete, place the plate on a 96-well magnetic stand, collect the beads, then transfer the eluate to a new plate.

To ensure reliable performance of the instrument, perform preventive maintainance as instructed by the manufacturer.

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.

Troubleshooting

Observation	Possible cause	Recommended action
Low or inconsistent yield	Plates were stored incorrectly.	Store plates in an upright position at room temperature. Examine the plate or row containing the beads before removing the seal for an indication of how to proceed.
		For plates that have been inverted, store them upright for at least 24 hours, then check that the beads form a tight dark pellet in the center of the bottom of the well before unsealing the plate.
		For plates without beads in that were not stored correctly, flck the plates in a fast downward motion to ensure that the materials are in the well and not on the seal before unsealing.
		For plates that were stored inverted, the beads are dry and uneven in the bottom of the wells and or not fully resuspended. Flick the plate in a fast downward motion to remove the fluid from the seal, then gently vortex to resuspend the beads before unsealing. A gentle brief centrifugation can be performed after resuspension but is not always necessary.
	After removing the seal, there were some wet or dry beads on the seal.	For wet beads, carefully pipet the liquid from the seal back to its proper well.
		For dry beads, resuspend the dry beads in Nuclease-Free water, then carefully pipet the liquid from the seal back to its proper well.
	There were bubbles in the wells.	Centrifuge the plates to remove the bubbles before use.
	The wells were blocked.	Remove any seal covering well openings and blocking tip comb access. Seal remnants on the plate edge will not interfere with tip comb access and do not have to be removed.
		If the seal has delaminated and left a transparent seal over the well then rotate plate 180 degrees and peel diagonally from the corner that is now on the bottom left. If the problem persists, call technical support.
	Heat block was installed incorrectly.	Install the correct deep well heat block.
	Sample input limits were below or above recommended amounts.	Consult user guide for recommended sample input ranges.

Obtenga más información en
hermesbiotech.com/support

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