Automated Extraction of Nucleic Acid from Serum Samples with the KingFisher™ Flex

Materials provided

Contents	Cat. No. TC-9119-480 (480 reactions)	Storage
VetAlert™ MagBead Proteinase K	25 mL	15-30°C (room temperature)
VetAlert™ MagBead Lysis Solution	190 mL	
VetAlert™ MagBead Wash Buffer	485 mL	
VetAlert™ MagBead Elution Buffer	45 mL	
VetAlert™ MagBead Resin	22 mL	
VetAlert™ MagBead Stabilization Buffer*	100 mL	
VetAlert™ MagBead Stabilization Additive*	2 mL	2-8°C (refrigerated)

*Included in kit but not used in this protocol

Materials required but not provided

Reagents

- 100% ethanol, ACS reagent grade or equivalent
- 100% isopropanol, ACS reagent grade or equivalent
- Molecular biology grade water
- (Optional) VetAlert™ DNA Internal Control System [Tetracore, Inc. Cat.# TC-9123-100, includes VetAlert™ DNA Internal Control (DNA IC) and VetAlert™ Internal Control Primer Probe Mix]
- (Optional) VetAlert™ RNA Internal Control System [Tetracore, Inc. Cat.# TC-9122-100, includes VetAlert™ RNA Internal Control (RNA IC) and VetAlert™ Internal Control Primer Probe Mix]

Equipment and consumables

- KingFisher™ Flex Purification System (Thermo Fisher Cat.# 5400630)
- Eppendorf ThermoMixer® C (Eppendorf Cat.# 5382000023) or similar and compatible microcentrifuge tubes
- Micropipettes and sterile pipette tips with aerosol barriers
- Vortex mixer
- Microcentrifuge
- KingFisher™ 96 deep-well plates (Thermo Fisher Cat.# 95040460)
- KingFisher™ 96 well microplate, 200 µL (Thermo Fisher Cat.# 97002540)
- KingFisher ™ 96 tip comb for deep-well magnets (Thermo Fisher Cat.# 97002534)

Before you begin

Prepare 50% Ethanol:

- Dilute 100% ethanol to 50% with an equal volume of molecular biology grade water.

Preprocessing of samples

1. Transfer 250 µL of sample to a microcentrifuge tube.
2. Add 350 µL of Lysis Solution and 30 µL of Proteinase K to each sample.

   Optional: Add 6 µL of VetAlert™ RNA IC or VetAlert™ DNA IC to the Lysis Solution if IC is used as an extraction control.
3. Mix sample on an Eppendorf Thermomixer (or similar) at 56°C and 1400 rpm for 15 minutes.
4. Allow sample to cool at room temperature for 5 minutes.
5. Briefly centrifuge the sample tubes before preparing the Sample Plate (Step 10).

Prepare purification plates and sample plate

6. **Wash Plate 1**: Add 100 µL of 50% ethanol and 900 µL of Wash Buffer to each well of a KingFisher™ 96 deep-well plate required for purification.
7. **Wash Plate 2**: Add 450 µL of 50% ethanol to each well of a KingFisher™ 96 deep-well plate required for purification.
8. **Elution Plate**: Add 50 µL of Elution Buffer to each well of a KingFisher™ 96 well microplate (200 µL) required for purification.
9. **Tip Comb Plate**: Place KingFisher™ 96 tip comb into an empty KingFisher™ 96 well microplate (200 µL).
10. **Sample Plate**:

    a. Transfer 600 µL of sample lysate to a well of a KingFisher™ 96 deep-well plate.

    b. Add 350 µL of 100% isopropanol to each well containing sample.

    c. Add 20 µL of Resin to each well containing sample.

       Note: The magnetic beads tend to drop out of suspension when not in use. Please ensure the Resin is completely resuspended prior to transfer by vigorously shaking or vortexing the bottle.

Begin process on the KingFisher Flex

11. Start KingFisher method ***Tetracore_VetAlert_MagBeadExtraction.bdz*** and follow instrument prompts for plate placement (see below).

Plate ID	Plate position on the KingFisher Flex
Sample Plate	1
Wash Plate 1	2
Wash Plate 2	3
Elution Plate	4
Tip Comb Plate	5

12. Follow prompts for removal of plates from the KingFisher Flex.

13. Transfer final eluates to a container of your choice for storage.

Note: Extracted nucleic acid can be stored at 4°C (2°C to 8°C) for immediate use, or at -20°C (-15°C to -25°C) or -80°C (-60°C to -90°C) for long-term storage.

Symbols

Symbol	Meaning	Symbol	Meaning
	Catalog Number		Lot Number
	Consult Instructions for Use		Manufacturer
	Expiration Date		Temperature Limit

Revision History

Revision	Date	Description of Change
00	18 July 2024	Initial Release

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