TOYOBO

COSMO BIO CO., LTD.
Inspiration for Life Science

Instruction manual MagExtractor -Viral RNA- 0810

F0984K

MagExtractor -*Viral RNA*-

NPK-401F 100 preparations
Store at 4 °C

Contents

CAUTION
All reagents in this kit are intended for research purposes. Do not use for diagnosis or clinical purposes. Please observe general laboratory precautions, and follow safety guidelines while using this kit.

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[1] Introduction

Description

MagExtractor -*Viral RNA*- provides a simple and reliable method for the rapid purification of viral RNA from serum or plasma specimens using magnetic silica beads. This kit is based on the property that RNA can be absorbed onto a silica surface in the presence of chaotropic agents [1) 2)] and an RNA-binding accelerator. The purified viral RNA can be used directly for RT-PCR experiments.

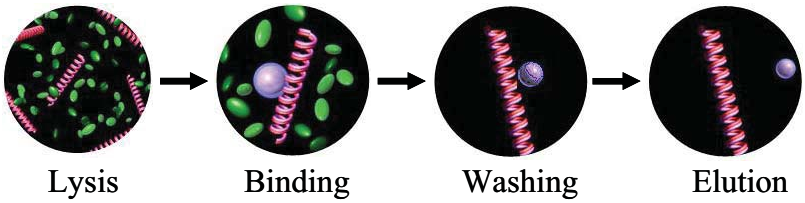

Fig. 1. Principles of the purification process.

Features

- This kit is suitable for the high-throughput extraction of viral RNA from serum or plasma specimens using magnetic silica beads.
- This kit does not contain hazardous substances such as phenol or chloroform.
- No ethanol is used in the washing steps.

[2] Components

This kit includes the following components for 100 preparations. All components should be stored at 4 °C.

Lysis & Binding Solution*	77 ml
Washing Solution I	154 ml
Washing Solution II	200 ml
Elution Solution	10 ml
Magnetic Beads	8 ml

* Lysis & Binding Solutions and 2-Mercaptoethanol should be mixed at a ratio of 100:1 prior to use. **2-ME is not supplied with this kit.**

Caution:

- The “Lysis & Binding Solution” and “Washing Solution I” contain chaotropic salts, which are irritant. Follow appropriate laboratory safety measures, and wear gloves when handling the reagents.
  If contact with skin occurs, wash thoroughly with water. If the eyes get affected, flush thoroughly for 15 min with cool water, and consult a physician.

[3] Materials required

The following materials are required.

- 2-Mercaptoethanol (2-ME)
- Magnetic stand
- Heating block (set at 65 °C).
- Tube mixer

Fig. 2. Magnetic stand
Magical Trapper (Code No.MGS-101)

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[4] Protocol

1. Preparation of additional reagents (not provided)

(1) Lysis & Binding solution (2-ME)

The Lysis & Binding Solution and 2-mercaptoethanol (2-ME) should be mixed at a ratio of 100:1 prior to use. If precipitates form, dissolve the precipitates at room temperature. **2-ME is not supplied with this kit.**

(2) Washing Solutions I and II are stored at room temperature, and should be used for purification.

2. Purification

(1) Add 700 µl **Lysis & Binding Solution (2-ME)** to 100-300 µl serum or plasma samples.

(2) **[Binding]** Add 50µl **Magnetic Beads,** and mix thoroughly for 10 min using a tube mixer.

Notes
Suspend the magnetic beads completely prior to use.

(3) Place each tube on a magnetic stand. The magnet will attract the magnetic beads, separating them from the specimen solution.

(4) After magnetic capture, carefully remove the supernatant.

Fig. 3
Magnetic separation

(5) **[Washing]** Add 700 µl **Washing Solution I** to the beads, and mix thoroughly for 10 sec. using the vortex mixture.

(6) Place each tube on a magnetic stand, and collect the beads with the magnet.

(7) After magnetic capture, carefully remove the supernatant.

(8) **[Washing]** Repeat (5) - (7)

(9) **[Washing]** Add 900 µl **Washing Solution II,** and mix thoroughly for 10 sec. using the vortex mixture.

(10) Place each tube on a magnetic stand, and collect the beads with the magnet.

(11) After magnetic capture, remove the supernatant carefully.

(12) **[Washing]** Repeat (9) - (11)

(13) **[Elution]** Add 55 µl **Elution Solution,** and mix thoroughly for 5 sec.

(14) Heat at 65 °C for 2 min, and mix thoroughly for 5 sec.

(15) Place the tube on a magnetic stand.

(16) Collect the supernatant into a fresh tube.

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[5] Troubleshooting

Symptom	Cause	Solution
Poor amplification at RT-PCR	Carry over of the magnetic beads in the Elution solution.	Remove the magnetic beads from the Elution solution. Residual magnetic beads may inhibit PCR reactions.
	Degradation of RNA	Reduce the serum or plasma sample volume for extraction. RNA extracted from excessive amounts of specimens may contain residual ribonuclease activity.

[6] References

1) B. Vogelstein and D. Gillespie, *Proc. Natl. Acad. Sci. USA*. 76: 615-619 (1979)

2) R. Boom, C. J. A. Sol, M. M. M.Salimans, C. L. Wertheim-van Dillen, P. M. E. Dillen and J. van der Noordaa, *J. Clin. Microbiol*., 28: 495-503 (1990)

[7] Related products

Product name	Package	Code No.
Magnetic standa **Mag*ical Trapper***	1 piece	MGS-101

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