Instructions for Use

Magtration® Reagent

MagDEA® Dx SV RNA

(Research use only)

Version 1.0

Content: 1 December, 2018

48 tests

This reagent is designed for the PSS geneLEAD and magLEAD automated extraction systems. Please read thoroughly and familiarize yourself with the contents of this document and system operation manual prior to use.

REF E1330

10 °C – 30 °C

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Contents

1. Symbols

	Caution
	Catalog number
	Batch code/lot number
	Use by
	Temperature limitation
	Sufficient for
	Manufacturer
	Consult instructions for use
	Do not reuse
	Reproductive toxicity Specific target organ systemic toxicity - single exposure Specific target organ systemic toxicity - Repeated exposure
	Acute toxicity
	Corrosive
	Flammable

2. Product information

2.1. Introduction

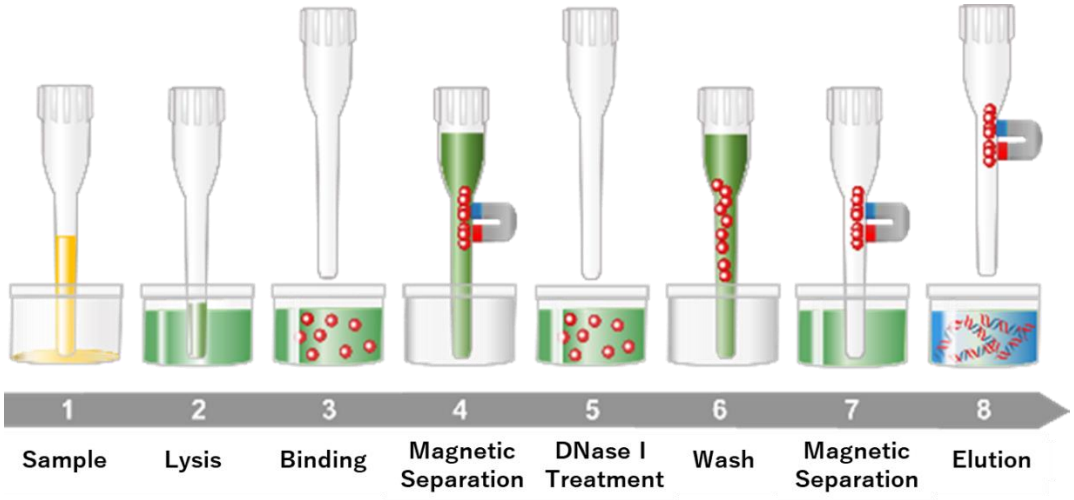
MagDEA® Dx SV RNA is a total RNA extraction reagent designed for the PSS geneLEAD and magLEAD automated extraction systems. The product is based on Magtration® Technology, allowing extraction of total RNA from 200 µL of PBS sample suspension through a simple procedure. Extracted total RNA can be used for downstream RT-PCR or real time PCR analyses. The PSS automated extraction systems by using Magtration® Technology and magnetic particles require no centrifugation or spin column steps during the process. The use of MagDEA® Dx SV RNA significantly reduces the risk of external contamination and allows extraction of high-quality of total RNA in a shorter period of time compared to conventional manual procedures.

2.2. Intended use

Total RNA extraction and purification from cultured cells (~1×10^7 cells) and leucocytes (~1×10^7 cells) isolated from peripheral blood treated with EDTA. MagDEA® Dx SV RNA alone does not provide any diagnostic results. For diagnostic purposes, please use the reagent in combination with commercially available nucleic acid amplification or detection assays.

2.3. Extraction principle (Magtration® Technology)

Magtration® Technology is a PSS trademarked technology that separates magnetic particles from liquid by capturing them in a tip. Below is a schematic representation of the automated total RNA extraction procedure. (1) Sample preparation. (2) Proteins in sample are digested by Proteinase K in lysis solution. (3) Nucleic acid attaches to the hydrophilic surface of magnetic particles in the presence of chaotropic ions and alcohol. (4) Magnetic particles are collected from the binding buffer through Magtration® Technology. (5) DNA in sample is degraded by DNase I. (6) Magnetic particles are washed with alcohol containing wash buffer. (7) Magnetic particles are collected from the wash buffer through Magtration® Technology. (8) Total RNA is eluted using hot water as an elution buffer. The eluate is recovered in the collection tube.



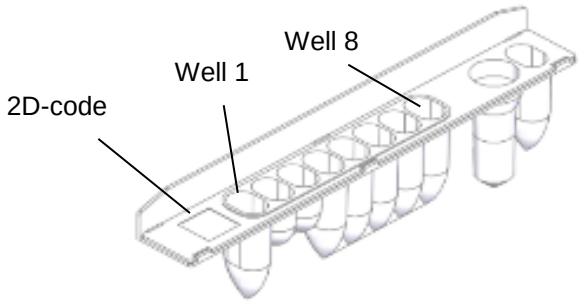
2.4. Kit contents

Total RNA extraction cartridge box

1. Total RNA extraction reagent cartridge 48 pcs

This kit is designed for the PSS geneLEAD and magLEAD automated extraction systems. Please use this kit with DNase I (Lyophilized), the DNase I tube adapter, DNase I tube decapper, and the geneLEAD consumable set/magLEAD consumable kit specialized for the automated systems. All sold separately.

Total RNA extraction reagent cartridge



Well No.	Reagent name	Quantity
1	Reductant solution	48 x 100 µL
2	PK solution	48 x 80 µL
3	Carrier solution	48 x 80 µL
4	Magnetic particles	48 x 200 µL
5	Binding buffer	48 x 1200 µL
6	Wash buffer 1	48 x 1200 µL
7	Wash buffer 2	48 x 700 µL
8	Distilled water	48 x 1200 µL
9	Lysis solution	48 x 800 µL

2.5. Process time

The process time of total RNA extraction from extraction to recovery of eluate is as follows

Protocol	200 µL protocol
System	geneLEAD or magLEAD series
Process time	Approx. 65min.

2.6. Storage conditions

Keep the extraction reagent kit at 10 to 30℃. Do not freeze and keep the reagent away from high temperatures, humidity or intense vibrations. To protect the reagent kit from direct sunlight, keep the case closed during storage. Always store the kit cartridges with the seal on top, avoiding the upside-down position and unnecessary vibrations.

3. How to use

3.1. Safety instructions

Check the following items prior to use.

- This extraction reagent kit is only for dedicated use with the PSS geneLEAD and magLEAD automated extraction systems. Please read the instrument operation manual carefully prior to use.
- If instrument error occurs, please refer to the instrument operation manual.

Safety notes

- Reagents inside the prefilled cartridges contain toxic and flammable materials. Refer to the material safety data sheet (MSDS) and follow the safety handling procedures.
- Follow laboratory safety instructions and be cautious of infection risk.
- Do not drink or smoke close to the testing area.
- Wear protective gloves, coat and eye gear when using the kit.
- Dispose of gloves and clean your hands carefully after use.

Notes on disposal

- When disposing of reagent or consumables, handle them as if infectious. Refer to the MSDS and follow your regional disposal regulations.
- The reagents contain isopropyl alcohol. Keep them away from fire and flame during disposal.

Notes on reagent performance

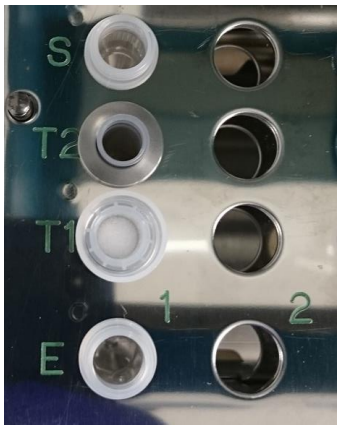
- Do not use expired reagent kits.
- Do not reuse extraction cartridges or consumables.
- Do not damage or dirty the 2D code.
- Check whether the reagent sticks to the cartridge interior wall prior to use. If so, shake/flick lightly to allow the drops to fall without generating bubbles.
- The elution consists of sterile distilled water. The final elution volume may vary with the residual amount on the magnetic particles or tip surface, or as a result of evaporation.
- Start extraction immediately once the sample is suspended in PBS.
- Do not leave the reagent on the instrument for unnecessary prolonged period before starting.
- Controls for PCR, such as internal control or positive control, are recommended in order to ensure reliable diagnostic results.

3.2. Operation procedures

Carefully read the operation procedures for the automated extraction systems in the operation manual prior to use.

The geneLEAD consumable set/magLEAD consumable kit, DNase I (Lyophilized), the DNase I tube adapter, and DNase I tube decapper (sold separately) are required.

1. Switch ON the instrument.
2. Select program from the graphic user interface (GUI).
3. Put the total RNA extraction reagent cartridge, DNase I (Lyophilized), DNase I tube adapter, tip set included in the consumable set, and sample in positions as indicated on the GUI.



Hole	Consumable, Reagent
S	Sample tube (Micro tube 1.5mL)
T2	DNase I (Lyophilized) DNase I tube adapter
T1	Tip & Sheath
E	Elution tube (Micro tube 1.5mL)

<Example: magLEAD setting>

4. Examine if the reagent sticks to the interior wall of the cartridge before use. Shake lightly to allow the drops to fall without making bubbles. If DNase I powder sticks to the cap or interior wall of the vial, spin down briefly. Make sure to put DNase I (Lyophilized) into the DNase I tube adapter and remove the cap before placing into the instrument.

   Reagent and consumables required for one sample extraction are listed as follows. Put them into the instrument according to the GUI guidelines of the instrument.

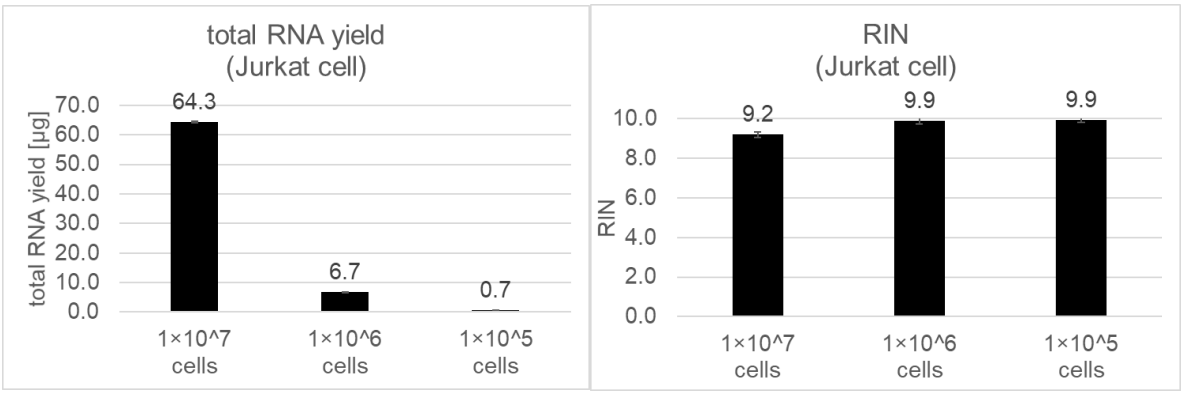
Total RNA extraction reagent cartridge MagDEA® Dx SV RNA	1pc
DNase I (Lyophilized)	1pc
DNase I tube adapter	1pc
Tip set	1pc
Collection tube	1pc
Sample tube/Sonication tube	1pc
Sonication cap (if needed)	1pc

5. Place MagDEA® Dx SV RNA, the sample tube or sonication tube, sonication cap (if needed), DNase I (Lyophilized), DNase I tube adapter, collection tube for elution, tip rack and PCR cartridges in proper positions as indicated on the GUI.

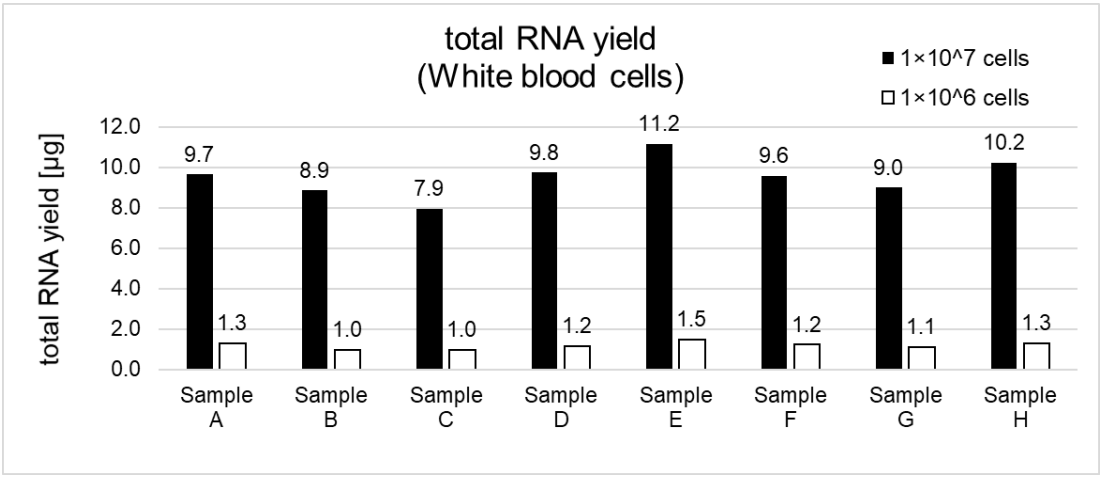
6. Close the front door of the instrument.
7. Push the start button to start the total RNA extraction process.
8. After the process is completed, open the front door as directed on the GUI.

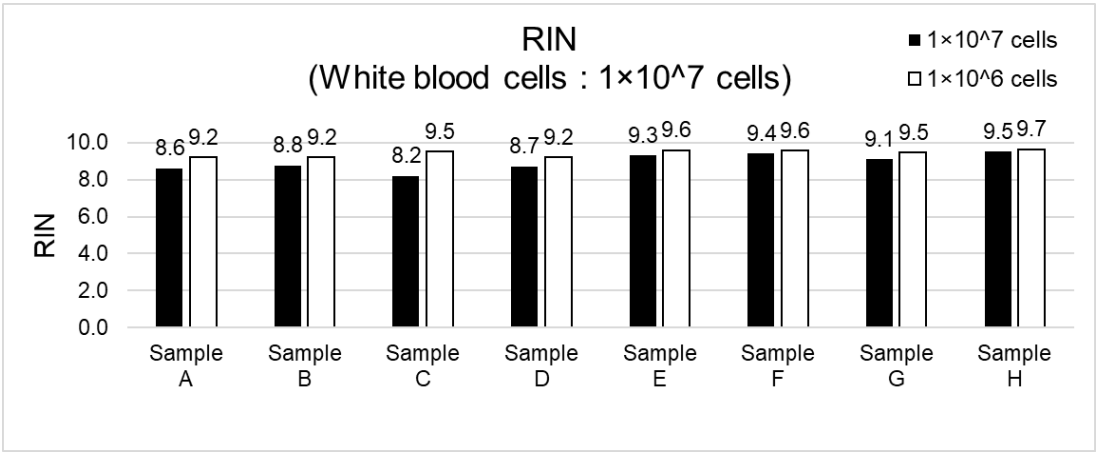
4. Reagent performance

4.1. Results of total RNA extraction from cultured cells



4.2. Results of total RNA extraction from isolated leukocytes (Human sample)





5. Troubleshooting

If encountered any problems, refer to the corresponding solutions below. Follow the instrument operation manual if instrument error occurred.

（1）Low extraction yield, low purity

Cause	Solution
Sample problem	Check whether the sample is stored properly. Only use fresh samples or samples stored under appropriate conditions. The extraction yield and quality of total RNA extracted from chilled or frozen samples can vary with storage duration.
Reagent problem	Ensure that the extraction reagent cartridge storage conditions are appropriate. If the kit was refrigerated, return it to room temperature prior to use. Do not freeze the reagent and do not store in areas subjected to vibration.
Presence of solid substances	Solid substances present in samples may cause the tip to clog, resulting in inefficient mixing processes. Sample should be a clear solution that can be smoothly handled with a 1000 µL pipet. Do not use solid samples for extraction.
Contamination	Clean all instrument parts and surfaces thoroughly with 0.1% sodium hypochlorite or 70 to 80% ethanol after use.
Trouble with the automated system	Refer to the error code of the automated system and follow prescribed measures.

（2）RNA degraded

Cause	Solution
Sample was too concentrated	RNase cannot be inactivated if the concentration of the sample is too high. Reduce sample concentration.
Prolonged suspension time	Start extraction immediately as soon as suspended in PBS.
Eluate was left in the instrument for too long	Do not leave eluted samples at RT for too long after extraction. Tighten the cap of the elution tube as soon as possible and store at -80℃.
External RNase contamination	Use an RNase removal agent to carefully clean all instrument surfaces after use.

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Information in this document is current as of December 2018.

Please note that information such as specifications is subject to change without notice.

Produced/sold by

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