CE

G2M

O1XRT

One for all Nucleic Acid Extraction Kit

MAGNXT

Tissue & body fluids Nucleic acid extraction kit

REF G2M212121

S. No.	Product Name	SKU Code	Pack Size
1.	MagNXT Tissue & body fluids Nucleic acid extraction kit	G2M212121-50T	50T
2.	MagNXT Tissue & body fluids Nucleic acid extraction kit	G2M212121-250T	250T
3.	MagNXT Tissue & body fluids Nucleic acid extraction kit	G2M212121-96T	96T
4.	MagNXT Tissue & body fluids Nucleic acid extraction kit	G2M212121-192T	192T
5.	MagNXT Tissue & body fluids Nucleic acid extraction kit (RX)	G2M212121RX-480T	480T
6.	MagNXT Tissue & body fluids Nucleic acid extraction kit (TK)	G2M212121TK-480T	480T
7.	MagNXT Tissue & body fluids Nucleic acid extraction kit (MG)	G2M212121MG-480T	480T

CE IVD | MADE IN INDIA

www.genes2me.com

Content Table

S. No.	Contents	Page No.
1.	Intended Use	3
2.	Intended User	3
3.	Test Principle	3
4.	Summary	3
5.	Materials Required but Not Provided	3
6.	Storage, Operating Conditions and Stability	3
7.	Important Note	3
8.	Instructions Before Use	4
9.	Sample Preparation Protocol	4
10.	Manual Protocol	6
11.	Automation Protocol (RapiX16)	7
12.	Automation Protocol (Rapi-X96)	8
13.	Automation Protocol (GENFast)	8
14.	Automation Protocol (KingFisher Flex System (Thermo Fisher)	10
15.	Automation Protocol (MGISP-960)	11
16.	Troubleshooting Guide	13
17.	Limitations	13
18.	Safety & Precautions	14
19.	Symbol Table	15
20.	Company Address	16

Intended Use

MagNXT- Tissue & Body Fluids NAE Extraction Kit is an *in-vitro* diagnostic test kit, intended for isolation and purification of nucleic acid from clinical samples such as tissues, Product of conception, chorionic villi sample, cell culture pellet, amniotic fluid, bronchial washing, urine, sputum, whole blood, buffy coat, plasma, serum, saliva, pleural fluids, vaginal swabs, cervical swab, oropharyngeal swabs, nasopharyngeal swabs, tissue swabs, bronchoalveolar lavage (BAL). MagNXT- Tissue & Body Fluids NAE Extraction Kit utilizes magnetic bead-based technology can be processed manual or automated on open-ended liquid handling platforms as well as magnetic processors. MagNXT- Tissue & Body Fluids NAE Extraction Kit for professional, laboratory trained personnel use only.

Intended User

The assay is intended to be performed by a laboratory professional in clinical laboratory.

Test Principle

Purification is based on the use of Magnetic Bead Particles that bind DNA and RNA under optimized binding conditions. LBTC Buffer (in case of tissue & body fluids) and Proteinase K are added to the sample, mixed and incubated at 56°C to lyse the cells. Magnetic Bead Suspension and ethanol are then added to the clean supernatant, and the resulting solution is placed on the magnetic separation rack. Only the nucleic acid will bind to the magnetic beads, while most of the proteins will be removed in the supernatant. The bound nucleic acid is then washed with wash buffer solutions, and the purified total DNA/RNA is eluted with the Elution Buffer.

Summary

The MagNXT Tissue & body fluids Nucleic acid extraction kit allows rapid, efficient and small scale preparation of total nucleic acid of host and pathogens DNA. Purification requires no phenol/chloroform extraction or alcohol precipitation and involves minimal handling. The kit is based on super paramagnetic particle purification technology with no phenol/chloroform extraction.

Materials Required But Not Provided

- Water bath or Heating block
- Micropipettes (Adjustable)
- Disposable barrier (Filter) pipette tips
- 1.5 ml microcentrifuge tubes
- Table top microcentrifuge
- Magnetic Separation Rack (can be supplied by Genes 2Me on request)
- Molecular biology grade ethanol (96-100%)
- Personal protective equipment (lab coat, gloves, goggles, etc)
- Disposable gloves
- Mortar and Pestle
- 1X PBS
- Vortexer

Storage, Operating Conditions and Stability

- This product can be stored at room temperature (4°C to 30°C) for the duration of its shelf life, as indicated on the box label. If precipitate forms in any of the reagents of the kit, warm at 55°C to dissolve.
- Magnetic Bead Particles shipped at room temperature and stored at 2°C - 8°C.
- After reconstitution, Proteinase K needs to be stored at -20°C.
- After reconstitution, Carrier RNA needs to be stored at -20°C.

Important Note:

- **Sample collection and storage:** Best results are obtained with fresh samples that has been immediately stored at appropriate temperature. Repeated freezing and thawing of stored samples should be avoided, since this leads to reduced quality of purified nucleic acid. Use of poor quality samples will lead to low yield of purified nucleic acid.

Instructions Before Use

- Buffer 1XRT-Wash 1, Buffer 1XRT-Wash 2 are supplied as concentrates. Before using for the first time, add the appropriate volume of ethanol (96–100%) as indicated on the bottle and shake thoroughly.
- After addition of ethanol, Buffer 1XRT-Wash 1, Buffer 1XRT-Wash 2 can be stored at room temperature (4°C to 30°C) for the duration of its shelf life, as indicated on the box label.
- Add Proteinase Dissolving Buffer into absolute amount of Proteinase K as mentioned on the label and store it at -20 °C.
- Add Buffer AVE into absolute amount of Carrier RNA as mentioned on the label and store it at -20°C.

Sample Preparation Protocol

A). Sample preparation (Tissues/POC/CVS)

1). For DNA extraction : Cut ~25 mg of tissue sample into pieces or grind using mortar and pestle for efficient lysis and transfer it into a 1.5 ml microcentrfuge tube. Add 180 µl Buffer LBTC along with 20 µl Proteinase K.

2). Incubate the mixture at 56°C for 20 min which can be extended up to 1-3 hours depending upon the tissue sample and centrifuge the mixture at 10,000x*g* for 1 min.

3). After centrifuge, Use 200 µl of mixture as sample and proceed with step-1 of Manual Protocol

4). In case of Automated extraction system(Rapi-X16) transfer 200 µl mixture in 2nd well & 8th well of the pre-filled plate and proceed with step-2 of the same.

5). In case of Automated extraction system (Rapi96X/KingFisher Flex System (Thermo Fisher)/MGISP-960) transfer 200 µl mixture in Buffer 1XRT-Lysis pre-filled plate and proceed with step-1 of the same.

6). For RNA extraction : Cut ~25 mg of tissue sample into pieces or grind using mortar and pestle for efficient lysis and transfer it into a 1.5 ml microcentrfuge tube. Add 400 µl Buffer RLB along with 20 µl Proteinase K.

7). Incubate the mixture at Room Temperature for 10 min and centrifuge the mixture at 10,000x*g* for 1 min.

8). After centrifuge, Use 200 µl of mixture as sample and proceed with step-1 of Manual Protocol

9). In case of Automated extraction system(Rapi-X16) transfer 200 µl mixture in 2nd well & 8th well of the pre-filled plate and proceed with step-2 of the same

10). In case of Automated extraction system (Rapi96X/KingFisher Flex System (Thermo Fisher)/MGISP-960) transfer 200 µl mixture in Buffer 1XRT-Lysis pre-filled plate and proceed with step-1 of the same.

B). Sample preparation (Cultured cells/mammalian cells/Amniotic fluid/ Urine/Cervical Swab/Vaginal Swab)

1). In case of Cultured cells/Mammalian cells, Centrifuge the appropriate number of cells (5x10^{6}) for 10 min at 5000x*g*. Discard the supernatant in such a way that 20 µl of supernantant remain in it and then resuspend the pellet in 180 µl Buffer LBTC by mixing properly.

2). Use 200 µl of mixture as sample and proceed with step-1 of Manual Protocol

3). In case of Automated extraction system(Rapi-X16) transfer 200 µl mixture in 2nd well & 8th well of the pre-filled plate and proceed with step-2 of the same

4). In case of Automated extraction system (Rapi96X/KingFisher Flex System (Thermo Fisher)/MGISP-960) transfer 200 µl mixture in Buffer 1XRT-Lysis pre-filled plate and proceed with step-1 of the same.

5). In case of Amniotic Fluid/Urine/Cervical swab/Vaginal swab, Centrifuge the appropriate volume 5 ml to 15 ml for 5 min at 5000x*g* Discard the supernatant in such a way that 200 µl of supernantant remain in it & make sure the cell pellet mix properly with the remaining supernatant.

6). Use 200 µl of supernatant as sample and proceed with step-1 of Manual Protocol

7). In case of Automated extraction system(Rapi-X16) transfer 200 µl supernatant in 2nd well & 8th well of the pre-filled plate and proceed with step-2 of the same.

8). In case of Automated extraction system (Rapi96X/KingFisher Flex System (Thermo Fisher)/MGISP-960) transfer 200 µl supernatant in Buffer 1XRT-Lysis pre-filled plate and proceed with step-1 of the same.

C). Sample preparation (Plasma/Serum)

1). Centrifuge 1.5 ml of whole blood at 3000x*g* for 10 min at room temperature. Three layers will be visible.

2). Collect approximately 200 µl of upper layer containing plasma/serum carefully into a fresh and sterile 1.5 ml microcentrifuge tube as sample and proceed with step-1 of Manual Protocol.

3). In case of Automated extraction system(Rapi-X16) transfer 200 µl sample in 2nd well & 8th well of the pre-filled plate and proceed with step-2 of the same

4). In case of Automated extraction system (Rapi96X/KingFisher Flex System (Thermo Fisher)/MGISP-960) transfer 200 µl sample in Buffer 1XRT-Lysis pre-filled plate and proceed with step-1 of the same.

D). Sample preparation (Saliva/Sputum/Bronco alveolar lavage (BAL)/pleural fluid/ bronchial washings/ Cerebrospinal fluid/Whole Blood/Bone Marrow/Buffy coat)

1). Use 200 µl of Saliva/Sputum/Bronco alveolar lavage (BAL)/pleural fluid/ bronchial washings/ Cerebrospinal fluid/Whole Blood/Bone Marrow/Buffy coat as sample and proceed with step-1 of Manual Protocol.

2). In case of Automated extraction system(Rapi-X16) transfer 200 µl sample in 2nd well & 8th well of the pre-filled plate and proceed with step-2 of the same

3). In case of Automated extraction system (Rapi96X/KingFisher Flex System (Thermo Fisher)/MGISP-960) transfer 200 µl sample in Buffer 1XRT-Lysis pre-filled plate and proceed with step-1 of the same.

Note: For TB Sputum samples we have different Extraction Kit.

E). Sample preparation from Oropharyngeal/ Nasopharyngeal/Tissue swab

1). Collect a swab and swirl it for 30 to 60 sec in 1 to 2 ml of 1X PBS.

2).Take 200 µl (from the above step-1) as sample & proceed with step-1 of Manual Protocol.

3). In case of Automated extraction system(Rapi-X16) transfer 200 µl sample from the above step-1 in 2nd well & 8th well of the pre-filled plate and proceed with step-2 of the same.

4). In case of Automated extraction system (Rapi96X/KingFisher Flex System (Thermo Fisher)/MGISP-960) transfer 200 µl sample from the above step-1 in Buffer 1XRT-Lysis pre-filled plate and proceed with step-1 of the same.

F). Sample preparation (Pus/Abscessic Fluid/Synovial Fluid/ Drain Fluid)

1). Allow the sample to thaw at room temperature.

2). Once thawed transfer 500 µl of sample to 1.5 ml microcentrifuge tube.

3). Add 500 µl of Buffer LBTC to the 1.5 ml microcentrifuge tube containing sample, vortex vigorously for 10 to 15 sec, incubate it at 56°C for 20 min or till the sample digests completely.

4). Once the sample is liquefied, transfer 200 µl of sample into 1.5 ml microcentrifuge tube and use it as sample proceed with step-1 of Manual Protocol.

5). In case of Automated extraction system(Rapi-X16) transfer 200 µl liquified sample in 2nd well & 8th well of the pre-filled plate and proceed with step-2 of the same.

6). In case of Automated extraction system (Rapi96X/KingFisher Flex System (Thermo Fisher)/MGISP-960) transfer 200 µl liquified sample from the above step-1 in Buffer 1XRT-Lysis pre-filled plate and proceed with step-1 of the same.

MagNXT Tissue & body fluids Nucleic acid extraction kit

Platform-Manual

SKU Code-G2M212121-50T, G2M212121-250T

Table 1. Kit Components

Kit Contents	Kit Content Code	Kit Content Quantity	Kit Content Code	Kit Content Quantity
	50 Tests	50 Tests	250 Tests	250 Tests
Magnetic Bead Particles	G2MA3-1694-1	1 ml	G2MA3-1694-2	5 ml
Buffer 1XRT-Lysis	G2MA3-1695-1	25 ml	G2MA3-1695-2	115 ml
Buffer 1XRT-Wash 1	G2MA3-1697-1	12 ml	G2MA3-1697-2	60 ml
Buffer 1XRT-Wash 2	G2MA3-1698-1	12 ml	G2MA3-1698-2	2 X 30 ml
Buffer AE	G2MA3-1699-1	10 ml	G2MA3-1699-2	30 ml
Proteinase K	G2MA3-1700-1	20 mg	G2MA3-1700-2	100 mg
Proteinase Dissolving Buffer	G2MA3-1701-1	2 ml	G2MA3-1701-2	6 ml
Carrier RNA	G2MA3-1702-1	50 preps	G2MA3-1702-2	250 preps
Buffer LBTC	G2MA3-1696-1	15 ml	G2MA3-1696-2	60 ml
Buffer RLB	G2MA3-1703-1	25 ml	G2MA3-1703-2	110 ml
Buffer AVE	G2MA3-8005-1	125 µl	G2MA3-8005-2	600 µl

Manual Protocol

1). Add 20 µl Proteinase K & 2 µl Carrier RNA (if not added in pre-processing step), 20 µl Magnetic Bead Particles and 450 µl Buffer 1XRT-Lysis and vortex for 15 sec. Leave at room temperature for 10 min with several invert mix. Transfer to a magnetic stand, and leave it undisturbed for ~3 min to adsorb the magnetic beads. carefully discard the supernatant.

2). Add 500 µl Buffer 1XRT-Wash 1 and vortex for 10 sec. Transfer the microcentrifuge tubes into a magnetic stand and leave it undisturbed for ~1 min to adsorb magnetic beads. Carefully discard the supernatant.

3). Add 500 µl Buffer 1XRT-Wash 2 and vortex for 10 sec. Transfer the microcentrifuge tubes to a magnetic stand and leave it undisturbed for 1 min to adsorb magnetic beads. Completely remove and discard the cleared supernatant.

4). Repeat step 4 again.

5). Discard all the leftover supernantant, and air dry the pellet for ~10 min.

6). Add 50 µl Buffer AE to the pellet and vortex for proper mixing. Leave it undisturbed for 5 min, vortex several times for efficient mixing. (**Note:** Add 100 µl Buffer AE in case of sputum sample).

7). Transfer to a magnetic stand and leave it undisturbed for 3 min. Transfer the extracted elute (DNA/RNA) to a new 1.5 ml microcentrifuge tube.

8). Upon completion, the extracted elute in case of DNA shall be stored at -20°C, while RNA shall be stored at -80°C.

MagNXT Tissue & body fluids Nucleic acid extraction kit

Platform- Rapi-X16 Automated Nucleic acid extraction system

SKU Code-G2M212121-96T, G2M212121-192T

Table 2. Kit Components

Kit Contents	Kit Content Code		Kit Content Quantity	Kit Content Code		Kit Content Quantity
	96 Tests		96 Tests	192 Tests		192 Tests
Magnetic Bead Particles	G2MA3-1780-1	Single Test Cartridge code G2MA3-2983-1	96-Cartridges	G2MA3-1729-1	Prefilled Plates code G2MA3-2983-2	12 Plates
Buffer 1XRT-Lysis	G2MA3-1714-1			G2MA3-1725-1		
Buffer 1XRT-Wash 1	G2MA3-1715-1			G2MA3-1726-1		
Buffer 1XRT-Wash 2	G2MA3-1716-1			G2MA3-1727-1		
Buffer AE	G2MA3-1717-1			G2MA3-1728-1		
Proteinase K	G2MA3-3111-3		40 mg	G2MA3-3111-4		80 mg
Proteinase Dissolving Buffer	G2MA3-2962-1		3 ml	G2MA3-8007-1		6 ml
Carrier RNA	G2MA3-8008-1		96 Preps	G2MA3-8008-2		192 Preps
Buffer LBTC	G2MA3-1720-1		18 ml	G2MA3-1731-1		36 ml
Buffer RLB	G2MA3-1722-1		50 ml	G2MA3-1733-1		100 ml
Buffer AVE	G2MA3-8005-3		250 µl	G2MA3-8005-4		500 µl

*96 cartridges, 48 combs with all the buffers and other kit components preloaded.

**12 Prefilled plates, 24 combs with all the buffers and other kit components preloaded.

Automation Protocol (Rapi-X16)

A). For Single Test Cartridge

1). In Single test cartridge the 1st well contains Magnetic Bead Particles, 2nd well contains Buffer 1X RT-Lysis ,the 3rd and 4th wells contain Buffer 1XRT-Wash 1 and Buffer 1XRT-Wash 2, respectively, and the 6th well contains Buffer AE.

2). Add 20 µl of Proteinase K and 2 µl Carrier RNA (if not added in pre-processing step) to the 2nd well of the single test cartridge.

3). If processing only 1 sample, place the cartridge on A and add empty cartridge on G position for balance & select the channel 1-8 in machine window.

4).For 1–4 samples, place cartridges on positions A, C, E, G of the block & select the channel 1-8 in machine window.

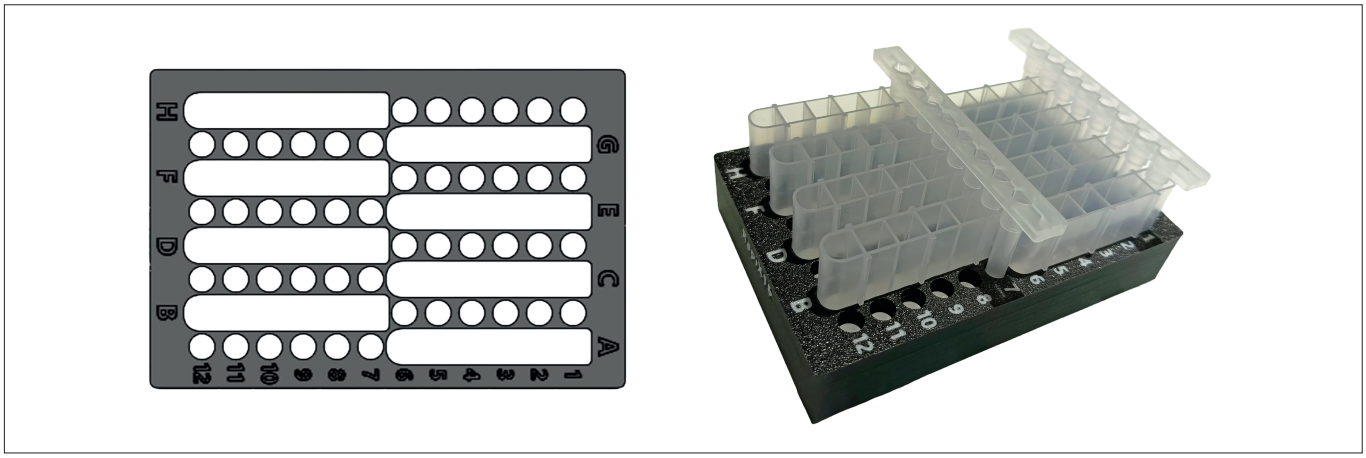
5). For 1–8 samples, place cartridges on positions A, C, E, G, B, D, F, H of the block & select the channel 1-8 & 9-16 in machine window.

6). Insert combs into positions 1 and 7, ensuring alignment with the 1st well of each cartridge and the block.

7). Close the door and select the program 'MAGNXT_01XRT_V1' on the Genes 2Me Rapi-X16 Automated Extraction System, then click 'Start' to begin the run.

8). After completion, collect the eluted nucleic acid (DNA/RNA) from the 6th well, ready for downstream applications.

9). Upon completion, the extracted elute in case of DNA shall be stored at -20°C, while RNA shall be stored at -80°C.



B). For Pre-filled Plates

1). In Pre-filled plate, the 1st well contains Magnetic Bead Particles, 2nd well contains Buffer 1X RT-Lysis the 3rd and 4th wells contain Buffer 1XRT-Wash 1 and Buffer 1XRT-Wash 2, respectively, and the 6th well contains Buffer AE.

2). Add 20 µl of Proteinase K and 2 µl Carrier RNA (if not added in pre-processing step) to the 2nd well of the single test cartridge.

3). In Case of 1-16 samples - Place the combs on position 1 & 7 & place plate properly in machine.

4). Close the door and select the corresponding program 'MAGNXT_01XRT_V1' on Genes 2Me Rapi-X16 Automated extraction system & channel 1-8 & 9-16.

5). Click 'Start' to run the current program and wait to finish the operation.

6). After completion, collect the eluted nucleic acid (DNA/RNA) from the 6th well & 12th well ready for downstream applications.

7). Upon completion, the extracted elute in case of DNA shall be stored at -20°C, while RNA shall be stored at -80°C.

MagNXT Tissue & body fluids Nucleic acid extraction kit

Platform- Rapi-X96 Automated Nucleic acid extraction system & GENFast Automated DNA/RNA extraction System

SKU Code -G2M212121RX-480T

Table 3. Kit Components

Kit Contents	Kit Content Code	Kit Content Quantity
	480 Tests	480 Tests
Magnetic Bead Particles	G2MA3-1740-1	Pre-mixed in buffer plates
Buffer 1XRT-Lysis	G2MA3-1746-1	05 Plates (96-well)
Buffer 1XRT-Wash 1	G2MA3-1747-1	05 Plates (96-well)
Buffer 1XRT-Wash 2	G2MA3-1748-1	05 Plates (96-well)
Buffer AE	G2MA3-1749-1	05 Plates (96-well)
Proteinase K	G2MA3-8006-1	200 mg
Proteinase Dissolving Buffer	G2MA3-3120-1	12 ml
Carrier RNA	G2MA3-8008-3	480 Preps
Buffer LBTC	G2MA3-1752-1	90 ml
Buffer RLB	G2MA3-1753-1	250 ml
Buffer AVE	G2MA3-8005-5	1.5 ml

Automation Protocol (Rapi-X96)

For Rapi-X96 Automated Nucleic acid extraction system

1). Add 20 µl Proteinase K and 2 µl Carrier RNA into corresponding wells of Buffer 1XRT-Lysis pre-filled plate.

2). Turn-on the machine, start the corresponding program 'OneXtract.Vir'.

3). Place the pre-filled cartridges at defined workstations as per table below.

4). Upon completion of the processing period (almost 25 min), the extracted elute in case of DNA shall be stored at -20°C, while RNA shall be stored at -80°C.

Table 4.

Workstation	Pre-filled Plates
Pos-1	Buffer 1XRT-Lysis
Pos-2	Buffer 1XRT-Wash 1
Pos-3	Buffer 1XRT-Wash 2
Pos-4	Buffer AE

Table 5.

Step	Position	Step Name	Time(S)	Volume (µl)	Temperature (°C)
1	3	Get Beads	70	500	OFF
2	1	Binding	490	700	56
3	2	Washing	60	500	OFF
4	3	Washing	70	500	OFF
5	3	Incubate	30	500	OFF
6	4	Elution	330	100	56

*20 Prefilled plates, 5 combs with all the buffers and other kit components preloaded.

Automation Protocol (GENFast)

For GENFast Automated Nucleic acid extraction system

1). Add 20 µl Proteinase K and 2 µl Carrier RNA into corresponding wells of Buffer 1XRT-Lysis pre-filled plate.

2). Turn on the machine, start the corresponding program.

3). Place the pre-filled cartridges at defined workstations as per table below.

4). Upon completion of the 25 min processing period, the extracted elute in case of DNA shall be stored at -20°C, while RNA shall be stored at -80°C.

Table 6. Details of Work Station For GenFast 96

Workstation	Pre-filled Plates
Pos-1	Buffer 1XRT-Lysis
Pos-2	Buffer 1XRT-Wash 1
Pos-3	Buffer 1XRT-Wash 2
Pos-6	Buffer AE

Details of Protocol For GenFast 96.

Table 7. Kit Components

Step	Station	Waiting T (Min)	Mixing T (Min)	Mixing S	Magnet T (Sec)	Magnet S	Volume (µl)
1	3	0	1	3	50	1	500
2	1	0	1	3	0	1	700
3	1	2	0	3	45	3	700
4	2	0	1	4	45	2	500
5	3	0	1	4	45	2	500
6	6	3	1	3	0	1	100
7	6	3	1	3	60	1	100
8	1	0	1	3	0	1	0

Cracking Set (T1)	56.0 °C	Open fan temperature	35 °C	Open time	000 min
Elution Set	56.0 °C	Storage set	000.0 °C		

MagNXT Tissue & body fluids Nucleic acid extraction kit

Platform- KingFisher Flex System (Thermo Fisher)

SKU Code -G2M212121TK-480T

Table 8. Kit Components

Kit Contents	Kit Content Code	Kit Content Quantity
	480 Tests	480 Tests
Magnetic Bead Particles	G2MA3-1740-1	Pre-mixed in buffer plates
Buffer 1XRT-Lysis	G2MA3-1746-1	05 Plates (96-well)
Buffer 1XRT-Wash 1	G2MA3-1747-1	05 Plates (96-well)
Buffer 1XRT-Wash 2	G2MA3-1748-1	05 Plates (96-well)
Buffer AE	G2MA3-1749-1	05 Plates (96-well)
Proteinase K	G2MA3-8006-1	200 mg
Proteinase Dissolving Buffer	G2MA3-3120-1	12 ml
Carrier RNA	G2MA3-8008-3	480 Preps
Buffer LBTC	G2MA3-1752-1	90 ml
Buffer RLB	G2MA3-1753-1	250 ml
Buffer AVE	G2MA3-8005-5	1.5 ml

Automation Protocol (KingFisher Flex System (Thermo Fisher)

1). Add 20 µl Proteinase K and 2 µl Carrier RNA into corresponding wells of Buffer 1XRT-Lysis plate.

2). Turn-on the machine, start the corresponding program.

3). Place the pre-filled cartridges at defined workstations as per table below.

4). Upon completion of the 25 min processing period, the extracted elute in case of DNA shall be stored at -20°C, RNA shall be stored at -80°C.

Table 9.

Workstation	Pre-filled Plates
Pos-1	Buffer 1XRT-Lysis
Pos-2	Buffer 1XRT-Wash 1
Pos-3	Buffer 1XRT-Wash 2
Pos-4	Buffer AE
Pos-5	Tip Comb Plate

MagNXT Tissue & body fluids Nucleic acid extraction kit

Platform- MGISP-960

SKU Code -G2M212121MG-480T

Table 10. Kit Components

Kit Contents	Kit Content Code	Kit Content Quantity
	480 Tests	480 Tests
Magnetic Bead Particles	G2MA3-1740-1	Pre-mixed in buffer plates
Buffer 1XRT-Lysis	G2MA3-1746-1	05 Plates (96-well)
Buffer 1XRT-Wash 1	G2MA3-1747-1	05 Plates (96-well)
Buffer 1XRT-Wash 2	G2MA3-1748-1	05 Plates (96-well)
Buffer AE	G2MA3-1749-1	05 Plates (96-well)
Proteinase K	G2MA3-8006-1	200 mg
Proteinase Dissolving Buffer	G2MA3-3120-1	12 ml
Carrier RNA	G2MA3-8008-3	480 Preps
Buffer LBTC	G2MA3-1752-1	90 ml
Buffer RLB	G2MA3-1753-1	250 ml
Buffer AVE	G2MA3-8005-5	1.5 ml

Automation Protocol (MGISP-960)

1). Add the reagents/sample to the corresponding wells of the deep well plate according to the table below.

Table 11.

Position	Pre-filled Cartridges	Volume/Nos.
Pos1 - Pos4	250 µl automated filter tips	4 Nos.
Pos12	Hard-shell thin-wall 96-well skirted PCR plates, white shell/clear well	1 Nos.
Pos21	Buffer 1XRT-Lysis (360 µl) add 10 µl Proteinase K & Carrier RNA Mix and 20 µl Magnetic Bead Particles	390 µl
Pos17	Sample	180 µl
Pos13	Buffer AE	50 µl
Pos23	Buffer 1XRT-Wash 1	170 µl
Pos14	Buffer 1XRT-Wash 2	340 µl

2). Double-click the icon of MGISP-960 on the desktop. The mode selection interface is displayed.

3). The initialization interface is displayed. Click to initialize. The initialization takes about 2 min.

4). Click the Menu button and select Wizard in the menu.

5). In the Wizard interface, click Application. Operation deck layout for the script is displayed and select the (JB-A09-039 MGISP-960 Nucleic Acid Extraction Kit).

6). Follow the onscreen instructions to place the consumables, samples, and reagents. Confirm the Placement and close the door.

7). Upon completion of the 60 min processing period, the extracted elute, in case of DNA, shall be stored at -20°C, while RNA shall be stored at -80°C.

Troubleshooting Guide

A. Poor yield / low sensitivity

1) Incomplete sample lysis

- Sample mixed with Lysis Buffer and was not thoroughly homogenized. The mixture has to be shaken continuously. Alternatively, prolong the incubation time with Lysis Buffer.

2) Insufficient elution buffer volume

- Bead pellet must be covered completely with elution buffer and needs to be fully resuspended. Insufficient performance of elution buffer during elution step.
- Remove all buffers completely from the bead pellet after the binding and wash steps. Remaining buffer decreases the efficiency of the subsequent steps. Aspiration of adsorbed bead pellet.
- Do not disturb the attracted beads while aspirating the supernatant. This requires special caution when removing the lysate from the beads as the lysate is usually too opaque to allow visual control of the pellet.
- Time for magnetic separation too short or aspiration speed too high.

B. Low Purity/Low Sensitivity Insufficient washing procedure

- Make sure that beads are resuspended completely during the washing procedure. If shaking is not sufficient to resuspend the beads completely mix by repeated pipetting up and down.

C. Poor performance of Nucleic acid in down-stream applications Carry-over of ethanol from wash buffers

- Be sure to remove all of the 80% ethanolic wash solution from the final wash, as residual ethanol interferes with downstream applications. Ethanol evaporation from wash buffers.
- Close the buffer bottles tightly, avoid ethanol evaporation from buffer bottles as well as from buffer filled in reservoirs. Do not reuse buffer reservoirs.

Limitations

- **Sample Variability:** Different body fluids may contain varying amounts of DNA/RNA, leading to differences in extraction efficiency and yield. Each sample type requires specific preprocessing and the use of appropriate buffers and protocols. Failure to preprocess samples adequately may result in reduced efficiency or failure of DNA/RNA extraction due to potential inhibitors present in certain body fluids.
- **Cross-Contamination:** Improper handling or inadequate cleaning of equipment may lead to cross-contamination between samples, compromising the reliability of the extracted DNA/RNA. Maintaining a contamination-free environment and following proper cleaning protocols are essential to minimize the risk of cross-contamination.
- **Processing Time:** The extraction process can be time-consuming, particularly when dealing with multiple types of body fluids. This can lead to workflow bottlenecks, especially in high-throughput settings. Efficient workflow management and optimization of extraction protocols are necessary to minimize processing time and increase productivity.
- **Operator Skill:** The efficiency of the extraction process may vary depending on the expertise of the operator. Variability in results between different users can occur if operators lack sufficient training or experience. Standardized protocols and regular training sessions can help ensure consistency in results across different operators.

Safety and Precautions

- **Chemical Handling:** Reagent cartridges/plates contain guanidine hydrochloride/guanidine thiocyanate, which may react with bleach to form highly reactive compounds. In case of spillage, clean with laboratory detergent and water.
- **Biological Samples:** Tissues, body fluids, infectious agents, and blood may carry infectious diseases. Ensure all laboratory personnel are familiar with general safety guidelines for chemical usage, storage, and waste disposal. Refer to relevant Safety Data Sheets (SDS) for specific precautions.
- **Personal Protective Equipment (PPE):** Wear appropriate attire, including lab coats, gloves, goggles, and closed-toe shoes to protect against spills, splashes, and inhalation.
- **Ventilation:** Work in well-ventilated areas or use fume hoods to minimize exposure to harmful vapors or inhalation of chemicals. Handle the chemical waste in designated fume hoods.
- **Storage:** Store the chemicals correctly in designated areas, adhering to guidelines for temperature, compatibility, and segregation.

  Labeling: Ensure all the containers are clearly labeled with the chemical name, concentration, and hazard warnings to prevent accidents or confusion.
- **Handling:** Employ proper techniques, while handling chemicals, pour chemicals carefully and steadily to avoid spills, splashes, and excessive vapor release. Keep chemical containers closed while not in use.
- **Emergency Equipment:** Familiarize yourself with the location and proper use of safety showers, eyewash stations, fire extinguishers, and spill kits for swift response to emergencies.
- **Training:** All individuals must undergo comprehensive training on chemical handling, emergency procedures, and the use of safety equipment as per regulatory and institutional requirements before handling potentially biohazardous materials.

Symbols for Use in the Labeling	
Symbols	**Definition**
	KEEP AWAY FROM SUNLIGHT
	TEMPERATURE LIMIT
	IN VITRO DIAGNOSTIC MEDICAL DEVICE
	UPWARD
	CONSULT INSTRUCTIONS FOR USE
	BATCH CODE
	CATALOGUE NUMBER
	USE BY DATE
	DATE OF MANUFACTURE
	MANUFACTURER
	CONTAINS SUFFICIENT FOR <n> TESTS
	CAUTION
	DO NOT USE IF PACKAGE IS DAMAGED
	AUTHORIZED REPRESENTATIVE IN THE EUROPEAN COMMUNITY/ EUROPEAN UNION
	EUROPEAN CONFORMITY

Genes 2Me Private Limited 1105, 11th Floor, SAS Tower B, Medicity, Sector 38, Gurgaon, Haryana, 122001, India Tel: +91 18001 214030 / +91 88000 23600 / +91 8800821778, E-mail: contact@genes2me.com

EC REP **OBELIS S.A.** Bd General Wahis 53 B-1030 Brussels Belgium
Tel: +3227325954, Fax: +3227326003 E-mail: mail@obelis.net