

TOTAL RNA PURIFICATION KITS
(CAT. 17200, Dx17200, 37500, 17250, 17270)



- ✓ CE-IVDR marked in accordance with the European Commission Regulation (EU) No. 2017/746 (Dx17200)
- ✓ Authorized for sale by Health Canada (Dx17200)
- ✓ Extract high quality & purity total RNA including miRNA
- ✓ No phenol step required
- ✓ Bind & elute all RNA irrespective of size or GC content, without bias
- ✓ Very sensitive & linear down to a few cells without the need for carrier RNA
- ✓ Convenient & fast spin column format
- ✓ Isolate RNA from a wide variety of specimens
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

GENERATE **SMALL RNA LIBRARIES** TO BE USED FOR **NEXT-GENERATION SEQUENCING**

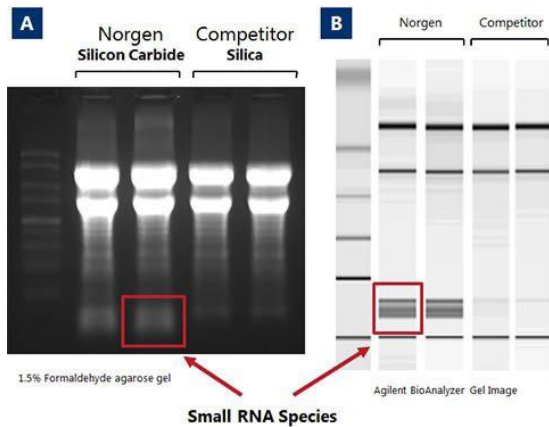




Figure 1. High Quality of Isolated RNA with Complete Size Range. Unlike most competitors' kits, Norgen's Total RNA Purification Kit allows for the isolation of all sizes of RNA, from the very large RNA down to the microRNA, without the use of phenol. Total RNA was isolated from 1×10^9 E. coli cells using Norgens Total RNA Purification Kit and a competitors kit. Five microliters and 1 μ L of the 50 μ L isolated RNA was analyzed on an agarose gel (Panel A) and the Agilent® 2100 BioAnalyzer RNA Nano 6000 chip (Panel B), respectively. Note the presence of small RNA species (red square) in the samples isolated via Norgen's kit and the absence of these RNA species in the competitor RNA preparation.

Ordering Information

| Total RNA Purification Kits | |
|-----------------------------|--|
| 50 Preps | Cat. 17200 |
| 50 Preps | Cat. Dx17200   |
| 100 Preps | Cat. 37500 |
| 250 Preps | Cat. 17250 |
| 500 Preps | Cat. 17270 |

SCAN ME WITH YOUR SMART PHONE




Intended for *in vitro* diagnostic use
CE-IVDR marked in accordance with the European Commission Regulation (EU) No. 2017/746

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For more data and technical specifications please visit **norgenbiotek.com** or scan the **QR code**.

TOTAL RNA PURIFICATION PLUS KITS (CAT. 48300, 48400)



- ✓ Extract high quality & purity total RNA including miRNA
- ✓ No phenol step required; isolate all RNA in one fraction
- ✓ Genomic DNA Removal Column for efficient elimination of gDNA
- ✓ Bind & elute all RNA irrespective of size or GC content, without bias
- ✓ Efficiently extract small RNA irrespective of GC content
- ✓ Very sensitive & linear down to a few cells without the need for carrier RNA
- ✓ Convenient & fast spin column format
- ✓ Isolate from a wide variety of specimens
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR THE PURIFICATION OF TOTAL RNA - INCLUDING MICRORNA - WITH RAPID GDNA REMOVAL

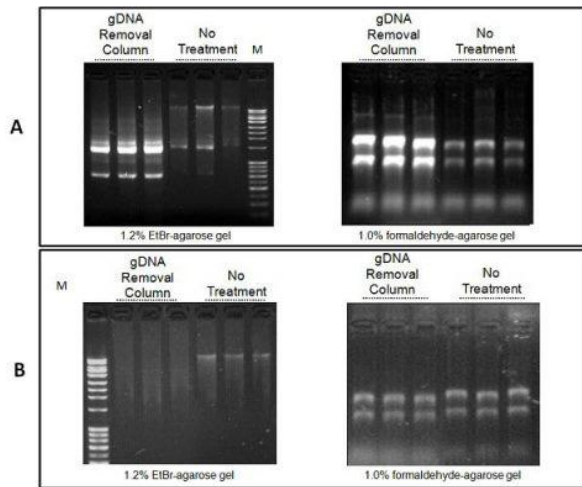


Figure 1. Genomic DNA Removal from HeLa cells. Norgen's Total RNA Purification Plus Kit is unique in that it contains a Genomic DNA Removal Column, allowing for gDNA removal without the use of enzymes. HeLa cells were either passed through the gDNA Removal Column, or received no gDNA removal treatment. The Genomic DNA Removal Column successfully removed gDNA from both 1 million HeLa cells (Panel A) and 1×10^6 HeLa cells (Panel B). For both Panels A and B, the left image displays the RNA run on a 1.2% EtBr-agarose gel, to better visualize any gDNA contamination. The right image displays a 1.0% formaldehyde-agarose gel to allow for better denaturation of RNA in the sample. For higher inputs, as in image A, the Genomic DNA Removal Column also resulted in higher RNA yields than the non-treated samples.

Ordering Information

| Total RNA Purification Plus Kits | |
|----------------------------------|------------|
| 50 Preps | Cat. 48300 |
| 100 Preps | Cat. 48400 |



For more data and technical specifications please visit norgenbiotech.com or scan the QR code.

TOTAL RNA PURIFICATION MICRO KITS
(CAT. 35300, 35350)



- ✓ Extract high quality & purity total RNA including miRNA
- ✓ No phenol step required - isolate all RNA in one fraction
- ✓ Elute extracted total RNA in small volume (20 µL)
- ✓ Bind & elute all RNA irrespective of size or GC content, without bias.
- ✓ Efficiently extract small RNA irrespective of GC content
- ✓ Very sensitive & linear down to a few cells without the need for carrier RNA
- ✓ Convenient & fast spin column format
- ✓ Isolate from a wide variety of specimens
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

RAPID PURIFICATION OF TOTAL RNA - INCLUDING MICRORNA - FROM SMALL INPUT AMOUNTS

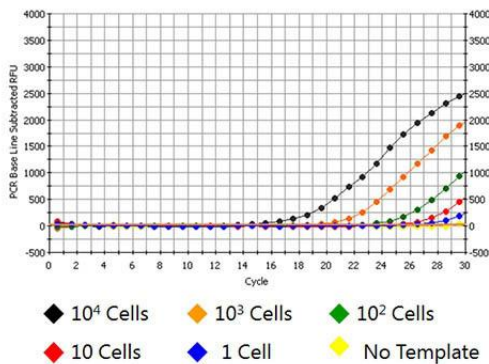


Figure 1. Great Isolation Sensitivity. Norgen's Total RNA Purification Micro Kit allows sensitive RNA extraction from as little as a single cell. Total RNA was extracted from a decreasing number of HeLa cells. 5 µL of the eluted RNA was used as the template in a 20 µL RT-qPCR reaction to detect the human S14 transcript. The S14 was detected from as little as a single cell.

Ordering Information

| Total RNA Purification Micro Kits | |
|-----------------------------------|------------|
| 50 Preps | Cat.35300 |
| 250 Preps | Cat. 35350 |

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For more data and technical specifications please visit norgenbiotek.com or scan the QR code.

TOTAL RNA PURIFICATION PLUS MICRO KIT (CAT. 48500)



- ✓ Extract high quality & purity total RNA including miRNA
- ✓ Elute extracted total RNA in smaller volume (20 µL)
- ✓ No phenol step required - isolate all RNA in one fraction
- ✓ Genomic DNA Removal Column for efficient elimination of gDNA
- ✓ Bind & elute all RNA irrespective of size or GC content, without bias.
- ✓ Efficiently extract small RNA irrespective of GC content
- ✓ Very sensitive & linear down to a few cells without the need for carrier RNA
- ✓ Convenient & fast spin column format
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

RAPID PURIFICATION OF TOTAL RNA - INCLUDING MICRORNA - FROM SMALL INPUT AMOUNTS

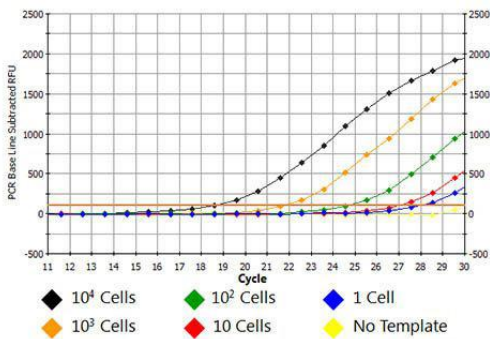


Figure 1. Great Isolation Sensitivity. Norgen's Total RNA Purification Plus Micro Kit allows sensitive RNA extraction from as little as a single cell. Total RNA was extracted from a decreasing number of HeLa cells followed by RT-qPCR to detect the human S14 transcript in the isolated RNA. PCR product of S14 was detected from as little as a single cell.

Ordering Information

| Total RNA Purification Plus Micro Kit | |
|---------------------------------------|------------|
| 50 Preps | Cat. 48500 |



For more data and technical specifications please visit norgenbiotech.com or scan the QR code.

TOTAL RNA PURIFICATION MAXI KIT
(CAT. 26800)



- ✓ Extract high quality & purity total RNA including miRNA
- ✓ No phenol step required - isolate all RNA in one fraction
- ✓ Rapid processing in under 40 minutes
- ✓ Isolate total RNA from a wide variety of specimens
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

EXTRACT **HIGH QUALITY & PURITY TOTAL RNA**
INCLUDING MICRORNA

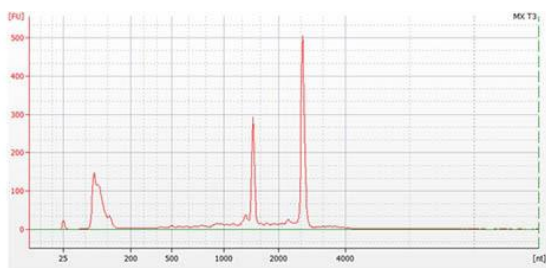


Figure 1. Isolate a Diversity of RNA Species Total RNA was isolated from 10 mL of an overnight E. coli culture using Norgen's Total RNA Purification Maxi Kit. One microliter of the 2 mL elution was analyzed on an Agilent® 2100 BioAnalyzer RNA Nano 6000 chip. As it can be seen, high-quality total RNA was isolated with minimal degradation. As well, a large amount of small RNA (< 200 nt) was recovered, indicating that the kit is able to isolate a diversity of RNA species

Ordering Information

| Total RNA Purification Maxi Kit | |
|---------------------------------|-----------|
| 8 Preps | Cat.26800 |

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For more data and technical specifications please visit norgenbiotek.com or scan the **QR code**.

TOTAL RNA PURIFICATION 96-WELL KITS
(CAT. 24300, Dx24300, 24350, Dx24350, 24370, 24380, Dx24380)



- ✓ CE-IVDR marked in accordance with the European Commission Regulation (EU) No. 2017/746 (Dx24300, Dx24350, Dx24380)
- ✓ Authorized for sale by Health Canada (Dx24300, Dx24350, Dx24380)
- ✓ Extract high quality & purity total RNA including miRNA
- ✓ Convenient high throughput format for vacuum, centrifuge, or automated system
- ✓ Very consistent well-to-well RNA isolation
- ✓ No phenol step required - isolate all RNA in one fraction
- ✓ Bind & elute all RNA irrespective of size or GC content, without bias
- ✓ Isolate from a wide variety of specimens
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR RAPID **HIGH-THROUGHPUT PURIFICATION** OF TOTAL RNA INCLUDING **MICRORNA**

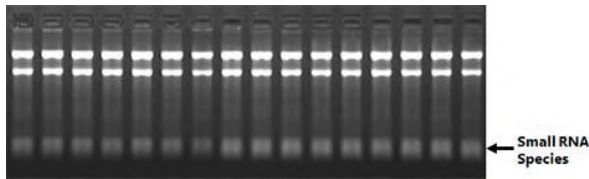


Figure 1. Great Isolation Sensitivity. Norgen's Total RNA Purification Kit allows for sensitive RNA extraction from even less than 10 cells. RT-qPCR was used to detect mRNA isolated from various input amounts of HeLa cells, from 10⁵ down to a single cell, using Norgen's Total RNA Purification 96-Well Kit. Ten microliters of the 75 µL isolated RNA were then subjected to a 20 µL reverse transcription using oligo dT primers. Three microliters of the reverse transcription were used in a 20 µL real-time PCR reaction with primers to detect the human S15 transcripts. The resulting Ct values were plotted against the input cell number. Total RNA was isolated and detected linearly from as little as a single HeLa cell.

Ordering Information

| Total RNA Purification 96-Well Kits | |
|-------------------------------------|-----------------|
| 2 x 96-well plates | Cat. 24300 |
| 2 x 96-well plates | Cat. DX24300 CE |
| 2 x 96-well plates (Deep Well) | Cat. 24350 |
| 2 x 96-well plates (Deep Well) | Cat. DX24350 CE |
| 6 x 96-well plates | Cat. 24370 |
| 6 x 96-well plates (Deep Well) | Cat. 24380 |
| 6 x 96-Well Plates (Deep Well) | Cat. Dx24380 CE |


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CE

Intended for *in vitro* diagnostic use
CE-IVDR marked in accordance with the European Commission Regulation (EU) No. 2017/746

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For more data and technical specifications please visit norgenbiotek.com or scan the **QR code**.

SINGLE CELL RNA PURIFICATION KIT (CAT. 51800)



- ✓ Fast and easy processing using rapid micro spin column format
- ✓ Small elution volume of 8 µL ready for direct utilization in qRT-PCR reactions
- ✓ Isolate total RNA including microRNA in a concentrated ready-to-use format
- ✓ Isolate high quality total RNA from a variety of sources
- ✓ RNA can be isolated from a single cell to 10⁵ cells
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

RAPID PURIFICATION OF TOTAL RNA - INCLUDING MICRORNA - FROM SMALL INPUT AMOUNTS

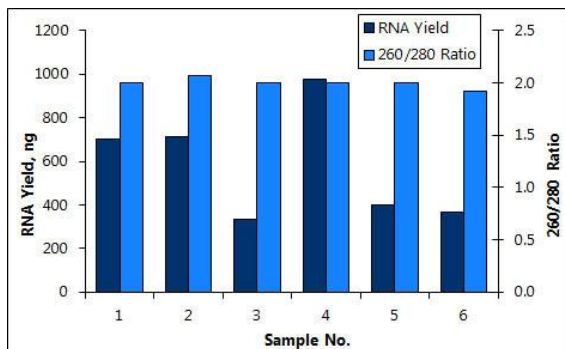


Figure 1. High Quality RNA Isolated from Laser-Captured Microdissection (LCM). Norgens Single Cell RNA Purification Kit allows sensitive but high-quality RNA extraction from small inputs such as Laser-Captured Microdissection (LCM). Total RNA was isolated from 6 different LCM samples. RNA yield and quality (260/280 ratio) were assessed by NanoVue spectrophotometry. Norgens Single Cell RNA Purification Kit recovered good amounts of RNA with an excellent 260/280 ratio.

Ordering Information

Single Cell RNA Purification Kit

50 Preps

Cat.51800

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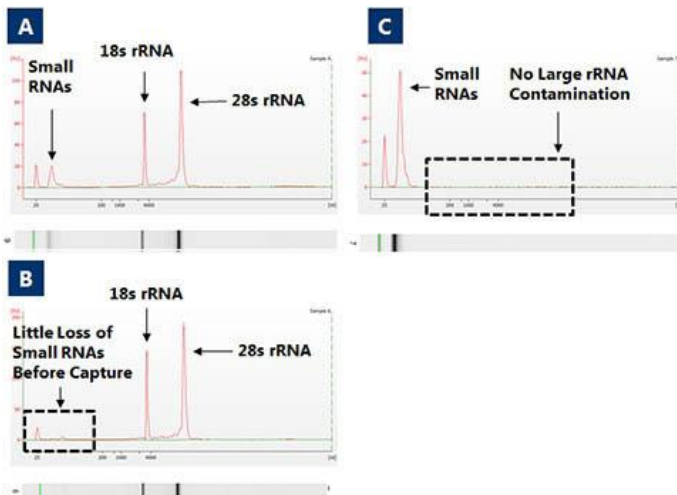
For more data and technical specifications please visit norgenbiotek.com or scan the **QR code**.

microRNA PURIFICATION KIT (CAT. 21300)



- ✓ Extract high quality & purity miRNA in 30 minutes
- ✓ Two column kit- eliminate large RNA on the first column and capture microRNA on a second column
- ✓ Elute microRNA in 25 μ L ready for miRNA profiling
- ✓ Process a wide range of samples- cell, tissue, bacteria, bodily fluids, etc.
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

RAPID PURIFICATION OF MICRORNA WITHOUT PHENOL; ISOLATION AND EXTRACTION OF MICRORNA



Ordering Information

| microRNA Purification Kit | |
|---------------------------|------------|
| 25 Preps | Cat. 21300 |

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Figure 1. Efficient Removal of Large RNA Species Different RNA species were isolated from 10^6 HeLa cells, resolved on an Agilent® Lab-On-A-Chip, and electropherograms were generated. Panel A contains all the RNA species present in 10^6 HeLa cells as isolated with Norgen's Total RNA Purification Kit and acts as a control. Panel B and C contain RNA that was isolated from 10^6 HeLa cells using Norgens microRNA Purification Kit. One microliter of the 50 μ L purified RNA for each fraction was loaded. Panel B shows the large RNA species removed using the Large RNA Removal Columns, and no small RNA can be detected. Panel C shows the small RNA that is isolated using the microRNA Enrichment Columns and shows that there is no contamination of the small RNA with any large RNA species above 200 nt. This demonstrates the effective separation of the small RNA from the large RNA species using Norgen's microRNA Purification Kit.

ANIMAL TISSUE RNA PURIFICATION KIT
(CAT. 25700)



- ✓ Extract high quality & purity total RNA including miRNA
- ✓ Isolate from a wide variety of animal tissues
- ✓ No phenol step required - isolate all RNA in one fraction
- ✓ Compatible with tissues stored in RNAlater® or Trizol®
- ✓ Convenient & fast spin column format
- ✓ Purification is based on spin column chromatography that uses Norgen's resin separation matrix

FOR PURIFICATION OF TOTAL RNA (INCLUDING MICRORNA) FROM ALL TYPES OF TISSUES INCLUDING FIBER-RICH TISSUES

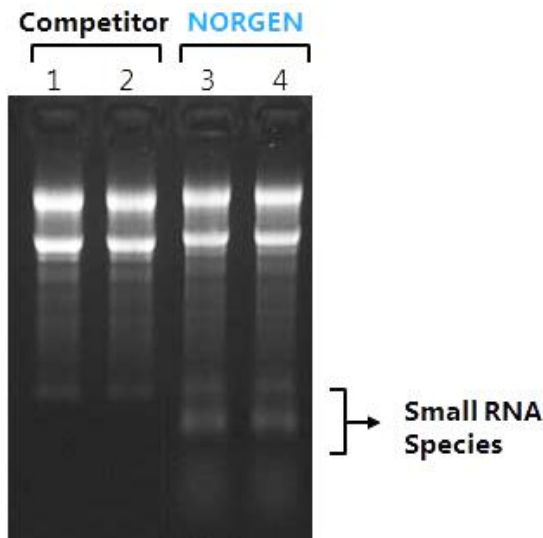


Figure 1. High Quality of Isolated RNA with Complete Size Range. Unlike most competitors kits, Norgen's Animal Tissue RNA Purification Kit allows for the isolation of all sizes of RNA, from very large RNA down to microRNA without the use of phenol. Total RNA was isolated from 25 mg samples of rat muscle using Norgens Animal Tissue RNA Purification Kit and a leading competitor's kit. Five microliters of the 50 µL RNA eluted from each kit were then resolved on a 1.2% formaldehyde-agarose gel. As it can be seen, only Norgens kit was able to isolate the full diversity of RNA species, including all the small RNA species.

Ordering Information

| Animal Tissue RNA Purification Kit | |
|------------------------------------|-----------|
| 50 Preps | Cat.25700 |

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For more data and technical specifications please visit norgenbiotek.com or scan the QR code.

FATTY TISSUE RNA PURIFICATION KIT (CAT. 36200)



- ✓ Isolate high quality total RNA from hard to extract fatty tissues
- ✓ Isolate total RNA, including microRNA (miRNA)
- ✓ No phenol or chloroform extractions
- ✓ Fast and easy processing using rapid spin-column format
- ✓ Genomic DNA removal without the use of nucleases
- ✓ Purification is based on spin column chromatography that uses Norgen's resin separation matrix

FOR PURIFICATION OF TOTAL RNA (INCLUDING MICRORNA) FROM ANIMAL TISSUES WITH HIGH LIPID CONTENT

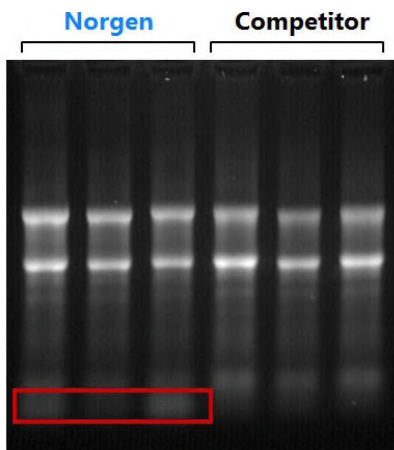


Figure 1. Isolation of High Quality Brain Total RNA including microRNA without the use of Phenol. Norgen's Fatty Tissue RNA Purification Kit isolates high quality total RNA from fatty tissues such as brain without the use of phenol. Total RNA was isolated from equal amounts of brain tissue using Norgens Fatty Tissue RNA Purification Kit and a leading competitors kit that involves a phenol:chloroform extraction step. The purified RNA was then resolved on a 1.2% formaldehyde-agarose gel. As it can be seen, Norgen not only isolated high and consistent yields of total RNA, but the RNA was also of high quality as evidenced by intactness of the major 28S and 18S rRNA. Importantly, only Norgen's Fatty Tissue RNA Purification Kit was able to recover the small RNA fraction, including the microRNA (red-boxed).

Ordering Information

| Fatty Tissue RNA Purification Kit | |
|-----------------------------------|------------|
| 25 Preps | Cat. 36200 |



For more data and technical specifications please visit norgenbiotech.com or scan the QR code.

SALIVA / SWAB RNA PURIFICATION KITS
(CAT. 69100, Dx69100, 69300, Dx69300)



- ✓ CE-IVDR marked in accordance with the European Commission Regulation (EU) No. 2017/746 (Dx69100, Dx69300)
- ✓ Authorized for sale by Health Canada
- ✓ Fits into in vitro diagnostic workflows
- ✓ Isolate high-quality total RNA, including viral RNA, from fresh and preserved saliva and swab samples
- ✓ Fast and easy processing using rapid spin column format
- ✓ Isolate total RNA, from large rRNA down to microRNA (miRNA)
- ✓ No phenol or chloroform extractions
- ✓ Very sensitive & linear down to a few cells/viral copies without the need for carrier RNA
- ✓ Buffer chemistry inactivates viruses including SARS-CoV-2
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

THE PURIFIED RNA IS INTENDED FOR *IN VITRO* DIAGNOSTIC USE FOR MEDICAL PURPOSES.

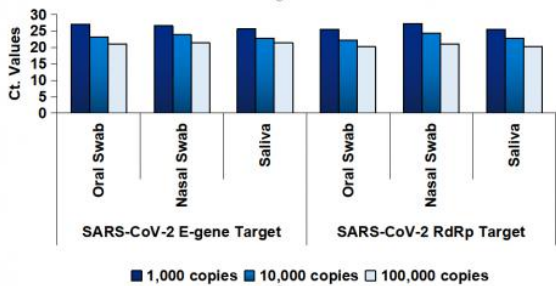


Figure 1. SARS-CoV-2 E-gene and RdRP Amplification from Preserved Swabs and Saliva RNA isolated by Norgens Saliva/Swab RNA Purification Kit (Cat. #69100). Duplicate Nasopharyngeal swabs, Oropharyngeal Swabs, and Saliva samples were collected from different donors. Nasopharyngeal and Oropharyngeal swab samples were collected into Norgens Total Nucleic Acid Preservative Tubes (Cat. 69200). Saliva samples were collected into Norgens Saliva RNA Collection and Preservation Devices (Cat. RU53800). All collected samples were spiked with 3 different concentrations from Norgens E/RdRP/RP Positive Control (included in Norgens COVID-19 TaqMan RT-PCR Kit (E/RdRP genes TM67200) and processed for RNA isolation using Norgens Saliva/Swab RNA Purification Kit (Cat. #69100), using an input of 0.25 mL from each preserved sample.

Ordering Information

| Total RNA Purification 96-Well Kits Dx | |
|--|--------------|
| 50 Preps | Cat. 69100 |
| 50 Preps | Cat. Dx69100 |
| 2 x 96-well plates | Cat. 69300 |
| 2 x 96-well plates | Cat. Dx69300 |

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URINE EXFOLIATED CELL RNA PURIFICATION KIT (CAT. 22550)



- ✓ Purify all sizes of RNA (including microRNA) without the need for phenol
- ✓ Isolate and detect total RNA from 1 mL and up to 50 mL urine
- ✓ Provides high-quality RNA for sensitive applications - isolate RNA from as little as 100 cells
- ✓ Rapid processing time from sampling to downstream testing
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

RAPID PURIFICATION OF MICRORNA WITHOUT PHENOL; ISOLATION AND EXTRACTION OF MICRORNA

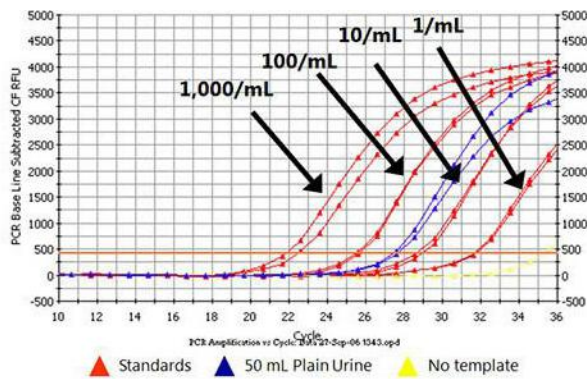


Figure 1. Isolation and Detection of RNA from the Exfoliated Cells in 50 mL of Urine. RNA was isolated from the exfoliated cells in a 50 mL urine sample obtained from a healthy male without any spiking using Norgen's Urine (Exfoliated Cell) RNA Purification Kit. The bind, wash, and elute procedure was followed, and the purified RNA was recovered in 20 µL of the Elution Buffer. A dilution series of HeLa cells with known concentration (from 1 cell per mL to 1,000 cells per mL) was isolated in parallel as standards. Seven microliters of the 20 µL eluted RNA were then subjected to a 20 µL reverse transcription. One microliter of the reverse transcription was used in a 20 µL real-time PCR reaction with primers to detect the ribosomal S14 transcript. The red lines in the PCR baseline graph above correspond to the HeLa RNA standards, while the blue lines correspond to the successful PCR results when RNA isolated from the exfoliated cells in 50 mL of non-spike urine was used as the template.

Ordering Information

Urine Exfoliated Cell RNA Purification Kit

25 Preps

Cat. 22550

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For more data and technical specifications please visit norgenbiotech.com or scan the QR code.

URINE MICRORNA PURIFICATION KIT
(CAT. 29000)



- ✓ Isolate high quality total RNA (including small RNA and microRNA) and all sizes of circulating and exosomal RNA, including microRNA from urine and cerebrospinal fluid (CSF) samples
- ✓ Small urine and CSF input ranging from as low as 0.5 mL to 1 mL
- ✓ No phenol extractions
- ✓ Very sensitive and linear down to a few cells without the need for carrier RNA
- ✓ Bind and elute all RNA irrespective of size or GC content, without bias
- ✓ Rapid and convenient spin column protocol
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

RAPID PURIFICATION OF MICRORNA FROM URINE WITHOUT PHENOL

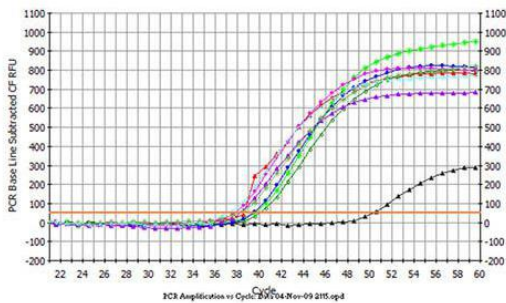


Figure 1. Isolation and Detection of microRNA from Urine Samples. Norgen's Urine microRNA Purification Kit was used to isolate microRNA from 8 different 1.5 mL urine samples. The purified microRNA was then used as the template in an RT-qPCR reaction to detect the human miR-21 gene. Five microlitres of the isolated RNA were used as the template in the RT step, and 5 µL from the RT step was used in the qPCR reaction. As it can be seen, the qPCR was able to successfully detect and amplify the miR-21 gene in all cases, indicating the high quality of the isolated urine microRNA. The black line in the graph above corresponds to the No Template Control.

Ordering Information

Urine microRNA Purification Kit

25 Preps

Cat. 29000

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For more data and technical specifications please visit norgenbiotek.com or scan the **QR code**.

URINE TOTAL RNA PURIFICATION MAXI KITS (SLURRY FORMAT) (CAT. 29600, Dx29600, 29650)



- ✓ Isolate high quality total RNA and all sizes of circulating and exosomal RNA, including microRNA
- ✓ No phenol extractions
- ✓ Very sensitive and linear without the need for carrier RNA
- ✓ Bind and elute all RNA irrespective of size or GC content, without bias
- ✓ Isolate inhibitor-free urinary RNA
- ✓ Slurry/Spin column and Slurry/96-well format available
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

RAPID PURIFICATION OF TOTAL RNA FROM 5 ML - 10 ML URINE WITHOUT PHENOL

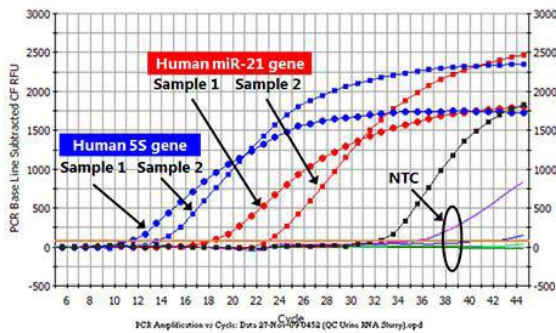


Figure 1. Isolation and Detection of Total RNA from 10 mL Urine Samples. Norgen's Urine Total RNA Purification Maxi Kit (Slurry Format) was used to isolate total RNA from two 10 mL urine samples. The purified total RNA was then used as the template in an RT-qPCR reaction to detect the human miR-21 gene (Red line) and the human 5S gene (Blue line). Five microlitres of the isolated RNA was used as the template in the RT step, and 5 µL from the RT step was used in the qPCR reaction. As it can be seen, the qPCR was able to successfully detect and amplify both the 5S gene and the miR-21 gene in all cases, indicating the high quality of the isolated urine total RNA. The purple line in the graph above corresponds to the No Template Control.

Ordering Information

| Total RNA Purification 96-Well Kits Dx | |
|--|--------------|
| 50 Preps | Cat. 29600 |
| 50 Preps | Cat. Dx29600 |
| 1 x 96-well Plate | Cat. 29650 |

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 CE-IVDR marked in accordance with the European Commission Regulation (EU) No. 2017/746

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URINE EXOSOME RNA ISOLATION KIT (CAT. 47200)



- ✓ Isolation of exosomal RNA molecules from urine samples
- ✓ Rapid and convenient spin-column protocol
- ✓ Isolate inhibitor-free urinary microRNA for any application
- ✓ Purification of exosomal proteins for western blot analysis
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)

A RAPID PROCEDURE FOR THE ISOLATION OF EXOSOMAL RNA FROM URINE SAMPLE

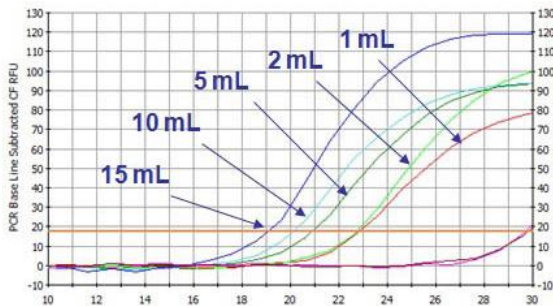


Figure 1. Detection of Urine Exosomal RNA Isolated from Different Urine Volumes. Norgen's Urine Exosome RNA Isolation Kit was used to isolate urine exosomal RNA from different urine volumes ranging from 1 to 15 mL. The purified urine exosomal RNA was then used as the template in an RT-qPCR reaction to detect the human 5S gene. 3 μ L of the isolated urine exosomal RNA was used as the template in the RT step, and 3 μ L from the RT step was used in the qPCR reaction. As it can be seen, the qPCR was able to successfully detect and amplify the 5S gene from RNA isolated from different urine volumes, indicating the high quality of the isolated urine exosomal RNA.

Ordering Information

Urine Exosome RNA Isolation Kit

50 Preps

Cat. 47200

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LEUKOCYTE RNA PURIFICATION KITS (CAT. 21200, 21250, 37800)



- ✓ Fractionate leukocytes from whole blood in minutes with provided RBC Lysis Buffer
- ✓ Isolate total RNA, including microRNA, without phenol
- ✓ Rapid and convenient spin-column format
- ✓ Also available in high-throughput 96-well format
- ✓ Purified RNA is ready for any downstream application including RT-PCR, qRT-PCR, NGS, arrays and more
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR THE **RAPID EXTRACTION AND PURIFICATION OF TOTAL RNA FROM LEUKOCYTES**

Norgen

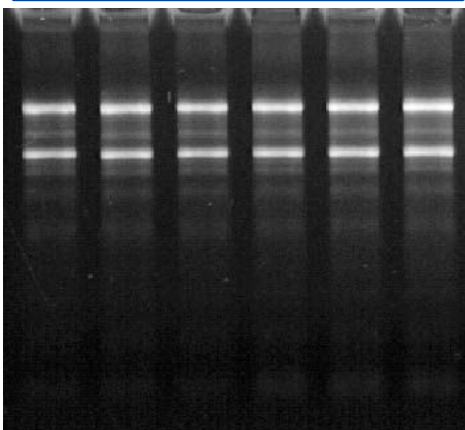


Figure 1. Consistent Isolation of High Quality Leukocyte RNA. Norgen's Leukocyte RNA Purification Kit isolates leukocyte RNA of high quality with great consistency. Total leukocyte RNA was isolated from 100 μ L of hamster blood using Norgen's Leukocyte RNA Purification Kit. A total of 6 replicates were performed, and 7 μ L of the 50 μ L purified RNA was then resolved on a 1.2% formaldehyde-agarose gel. As can be seen, Norgen's kit not only isolated high and consistent yields of total RNA, but the RNA was also of high quality as evidenced by intactness of the major 28S and 18S rRNA

Ordering Information

| Leukocyte RNA Purification Kits | |
|---------------------------------|------------|
| 50 Preps | Cat. 21200 |
| 50 Preps | Cat. 21250 |
| 2 x 96-well plates | Cat. 37800 |

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For more data and technical specifications please visit norgenbiotech.com or scan the QR code.

PRESERVED BLOOD RNA PURIFICATION KIT I (FOR USE WITH TEMPUS BLOOD RNA TUBES)
(CAT. 43400)



- ✓ Compatible with Tempus™ Blood RNA Tubes
- ✓ Isolate true total RNA including siRNA and microRNA
- ✓ No phenol extractions
- ✓ Purify high-quality RNA in 30 minutes
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

RAPID ISOLATION AND PURIFICATION OF TOTAL RNA FROM BLOOD THAT HAS BEEN PRESERVED USING TEMPUS™ BLOOD RNA TUBES

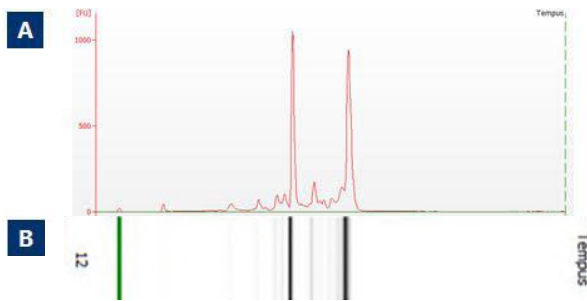


Figure 1. Isolation of High Quality Total RNA. Total RNA was isolated in duplicate from 3 mL hamster blood samples collected into Tempus™RNA Blood Tubes using Norgen's Preserved Blood RNA Purification Kit I and was subsequently analyzed using an Agilent BioAnalyzer. Panel A shows the electropherogram from the Agilent Bioanalyzer, where the y axis represents fluorescence units and the x axis represents the runtime (s). The bands of the 18S and 28S rRNA fragments are clearly visible and the RNA integrity number score is 9.0. Panel B demonstrates the gel banding pattern of the RNA species purified from hamster blood.

Ordering Information

| Preserved Blood RNA Purification Kit | |
|--------------------------------------|------------|
| 50 Preps | Cat. 43400 |



For more data and technical specifications please visit norgenbiotek.com or scan the **QR code**.

**PRESERVED BLOOD RNA PURIFICATION KIT II
(FOR USE WITH PAXGENE BLOOD RNA TUBES)
(CAT. 43500)**



- ✓ Compatible with PAXgene Blood RNA Tubes
- ✓ Isolate true total RNA including siRNA and microRNA
- ✓ No phenol extractions
- ✓ Purify high-quality RNA in 30 minutes
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

**RAPID ISOLATION AND PURIFICATION OF TOTAL RNA
FROM BLOOD THAT HAS BEEN PRESERVED USING
PAXGENE BLOOD RNA TUBES**

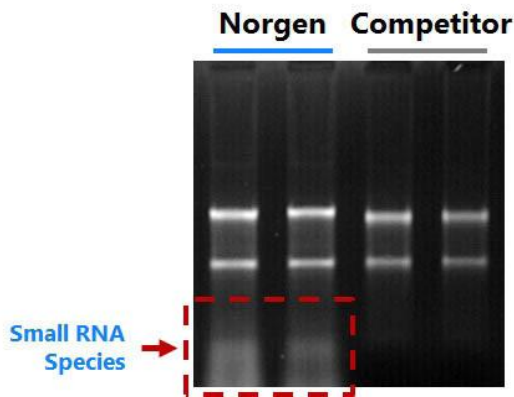


Figure 1. High Quality of Isolated RNA with Complete Size Range. Unlike most competitors kits, Norgen's Preserved Blood RNA Purification Kit II (for use with Paxgene Blood RNA Tubes) allows for the isolation of all sizes of RNA, from the very large RNA down to the microRNA without the use of phenol. Total RNA was isolated from preserved blood using Norgen's Preserved Blood RNA Purification Kit II(for use with PAXgeneBlood RNATubes) and a leading competitors kit. The purified RNA was then resolved on a 1.2% formaldehyde-agarose gel. As it can be seen, only Norgen's kit was able to isolate the full diversity of RNA species, including all the small RNA species.

Ordering Information

| Preserved Blood RNA Purification Kit | |
|--------------------------------------|------------|
| 50 Preps | Cat. 43500 |

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For more data and technical specifications please visit norgenbiotech.com or scan the **QR code**.

FFPE RNA PURIFICATION KITS
(CAT. 25300, Dx25300, 25400)



- ✓ CE-IVDR marked in accordance with the European Commission Regulation (EU) No. 2017/746 (Dx25300)
- ✓ Extract total RNA (including microRNA) from FFPE samples
- ✓ No phenol extraction step
- ✓ Includes DNase for optional on-column DNA removal
- ✓ Isolated RNA is of the highest quality and integrity
- ✓ Isolate a diversity of RNA species
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR THE RAPID AND EFFICIENT EXTRACTION AND PURIFICATION OF RNA (INCLUDING MICRORNA) FROM FORMALIN-FIXED PARAFFIN-EMBEDDED (FFPE) SAMPLES

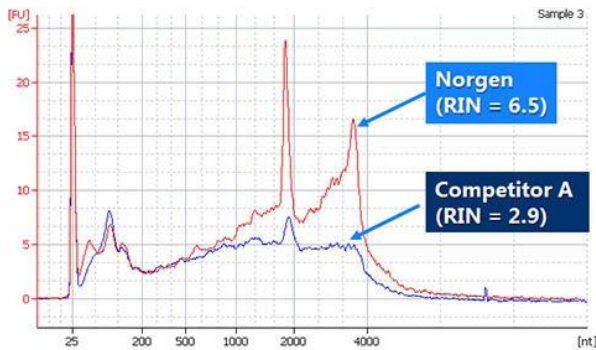


Figure 1. High Quality and Yield of Total RNA. Norgen's FFPE RNA Purification Kit isolates FFPE RNA that exceeds both yield and quality of competitors. Total RNA was isolated from one slice of hamster FFPE kidney section (20 micron thickness) using Norgen's FFPE RNA Purification Kit and a leading competitors kit. One microliter of the 50 µL purified RNA was then resolved on an Agilent 2100 BioAnalyzer using an RNA Nano 6000 chip. As it can be seen, Norgen not only isolated higher yields of total RNA, but the RNA was also of a higher quality as evidenced by the higher RIN values obtained with Norgen's RNA.

Ordering Information

| FFPE RNA Purification Kits | |
|----------------------------|------------------------|
| 50 Preps | Cat. 25300 |
| 50 Preps | Cat. Dx25300 CE |
| 2 x 96-well plates | Cat. 25400 |

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CE-IVDR marked in accordance with the European Commission Regulation (EU) No. 2017/746

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Exosomes: The Essentials

- 1** **Exosomes** are small extracellular vesicles that are released from cells throughout the body, and provide a method of intercellular communication. They carry a variety of cargo unique to the cell they are released from, including specific microRNAs, proteins and metabolites.
- 2** **Exosomes** transit through the body in a variety of fluids, including **blood, saliva, breast milk, CSF, amniotic fluid, and urine**, before being taken up by specific recipient cells. By taking a sample of such fluids, researchers can isolate exosomes and look closer at what they are specifically carrying.
- 3** How do **exosomes** know which cell to 'deliver' their messages to? Researchers are still studying the exact mechanisms by which target cells uptake exosomes. However, it is believed to involve interaction between the target cell and specific protein markers on the exosome's surface.

Size Comparison



Purification



There is no universal method for purifying exosomes from bodily fluids or culture media. While ultracentrifugation was once the traditional method, a variety of alternative methods are now available:

| Method | Throughput | Purity | Time | Cost |
|--------|------------|--------|------|------|
| | | | | |



Discover More Knowledge.

norgenbiotek.com/exclusive-infographic



PLANT MICRORNA PURIFICATION KIT
(CAT.54700)



- ✓ Fast and easy processing using a rapid spin-column format
- ✓ No phenol or chloroform extractions
- ✓ Isolate all small RNA molecules (<200 nt)
- ✓ Minimal contamination from large RNA molecules and genomic DNA
- ✓ High quality small RNA can be used in various downstream applications
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR THE **RAPID PURIFICATION OF MICRORNA**
FROM **PLANTS.**

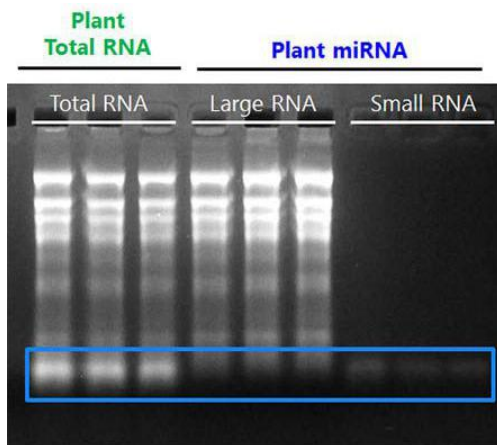


Figure 1. Fractionation of Large and Small RNA. Large RNA and small RNA were sequentially purified using Norgen's Plant miRNA Purification Kit from 50 mg of raspberry leaf tissue and the RNA profile was compared with the RNA isolated using Norgen's Plant/Fungi Total RNA Purification Kit (Cat. #25800). For visualization, 10 µL of RNA from 50 µL of RNA elution was loaded on 2% 1x MOPS agarose gel. Norgen's kit was able to isolate both the large and small RNA fractions, and the small RNA fraction does not contain any of the large RNA species.

Ordering Information

| Plant microRNA Purification Kit | |
|---------------------------------|------------|
| 25 Preps | Cat. 54700 |

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For more data and technical specifications please visit norgenbiotek.com or scan the **QR code**.

SOIL TOTAL RNA PURIFICATION KIT (CAT. 27750)



- ✓ Isolate high quality total RNA from a variety of soil samples
- ✓ Process all types of soil, including common soil, compost and manure
- ✓ Remove all traces of humic acids and other inhibitors of PCR
- ✓ Isolates all sizes of RNA, including microRNA, without phenol
- ✓ Complete kit including bead tubes and humic acid removal columns (HAR)
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR THE RAPID PREPARATION OF INHIBITOR-FREE TOTAL RNA FROM SOIL.

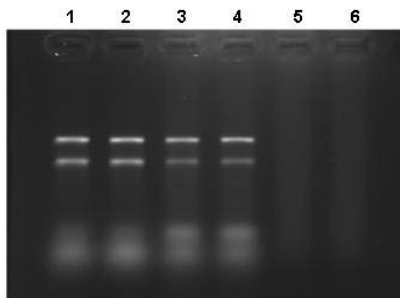


Figure 1. Isolation of Total RNA from Bacteria in Soil. *Pseudomonas fluorescens* was spiked into 250 mg samples of autoclaved soil and total RNA was isolated using Norgen's Soil Total RNA Purification Kit. RNA was visualized by running 7.5 μ L of each 75 μ L elution on a 1.2% agarose-formaldehyde RNA gel. Total RNA (large and small) of *Pseudomonas fluorescens* was recovered from the autoclaved spiked soil without any significant degradation, indicating that high integrity RNA can be purified from the microorganisms in the soil. Lanes 1 and 2 contain total RNA from *Pseudomonas fluorescens*, Lanes 3 and 4 contain total RNA purified from the autoclaved soil spiked with *Pseudomonas fluorescens*, and Lanes 5 and 6 contain RNA purified from the autoclaved soil (no RNA was found).

Ordering Information

| Soil Total RNA Purification Kit | |
|---------------------------------|------------|
| 50 Preps | Cat. 27750 |

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For more data and technical specifications please visit norgenbiotek.com or scan the QR code.

STOOL TOTAL RNA PURIFICATION KITS
(CAT.49500, DX49500)



- ✓ CE-IVDR marked in accordance with the European Commission Regulation (EU) No. 2017/746 (Dx49500)
- ✓ Simultaneous isolation of both host RNA and microbial RNA (universal protocol)
- ✓ Isolate full diversity of RNA from large RNA down to small and microRNAs
- ✓ Eliminates PCR inhibitors including humic acids
- ✓ High quality RNA for sensitive downstream application
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

A **CONVENIENT AND RAPID** METHOD TO PURIFY **TOTAL RNA** FROM **SMALL AMOUNTS OF STOOL** SAMPLES.

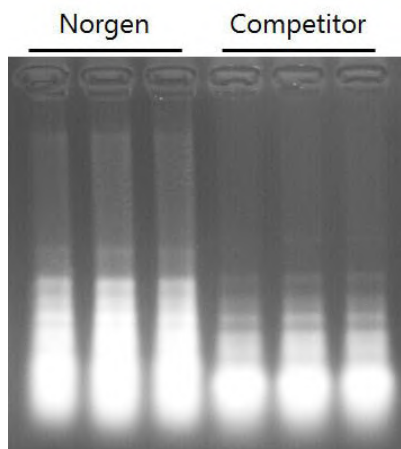


Figure 1. High yields of stool total RNA were purified from 200 mg of human stool using Norgen's Stool RNA Purification Kit and a leading competitor's kit, in triplicate. For analysis, 7.5 μ L of each 75 μ L elution was loaded on a 1.2 % 1x MOPS formaldehyde-agarose gel. Norgen's kit was found to have a higher yield of RNA, isolated from 200 mg of human infant stool.

Ordering Information

| Stool Total RNA Purification Kits | |
|-----------------------------------|--------------------------|
| 50 Preps | Cat. 49500 |
| 50 Preps | Cat. DX49500 CE |


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PLASMA/SERUM cfc-RNA ADVANCED PURIFICATION KIT (CAT. 68200)



- ✓ Versatile plasma/serum input ranging from 1 mL to 6 mL
- ✓ No phenol extractions
- ✓ No carrier RNA
- ✓ Bind and elute all RNA irrespective of size or GC content, without bias
- ✓ Concentrate circulating RNA and exosomal RNA into a flexible elution volume ranging from 25 µL to 50 µL
- ✓ Purify superior-quality and superior quantity RNA in 45 minutes
- ✓ Fully automated purification procedure on Hamilton MicroLab Nimbus
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

ISOLATE ALL SIZES OF CIRCULATING AND EXOSOMAL RNA, INCLUDING MICRORNA.

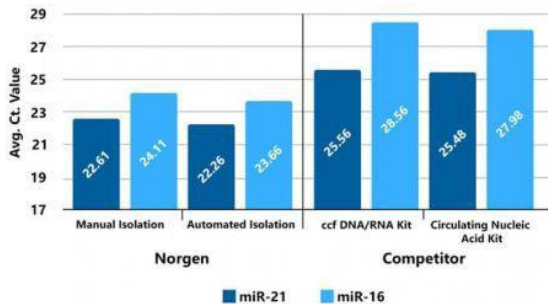


Figure 1. RT-qPCR amplification of miR-21 and miR-16 from RNA purified from K₂EDTA plasma using different cfc-RNA purification methods. Norgens SiC technology, manual and automated procedure, was superior as compared to the amplification of the same miRNA targets amplified from RNA purified from K₂EDTA plasma using the Silica-based technology represented by Qiagens purification kits.

Ordering Information

Plasma/Serum cfc-RNA Advanced Purification Kit

50 Preps

Cat. 68200

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For more data and technical specifications please visit norgenbiotek.com or scan the QR code.

PLASMA/SERUM RNA PURIFICATION KITS
(CAT. 55000, 56100, 56200)



- ✓ Isolate all sizes of circulating and exosomal RNA, including microRNA
- ✓ Versatile plasma/serum input ranging from 50 µL to 200 µL
- ✓ No phenol extractions
- ✓ No carrier RNA
- ✓ Bind and elute all RNA irrespective of size or GC content, without bias
- ✓ Concentrate circulating RNA and exosomal RNA into a flexible elution volume ranging from 10 µL to 100 µL
- ✓ Purify high-quality RNA in 15-20 minutes
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Compatible with Streck Cell-Free RNA BCT® Tubes
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR RAPID AND SIMPLE PURIFICATION OF CIRCULATING RNA AND EXOSOMAL RNA FROM PLASMA/SERUM SAMPLES

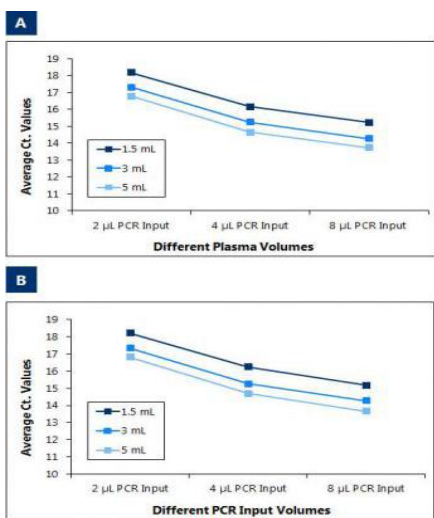


Figure 1. Determination of the amount of inhibition present in plasma RNA samples when detecting the human 5S transcript and miR-21. DNA was isolated from 1.5 mL, 3 mL and 5 mL plasma using Norgen's Plasma/Serum RNA Purification Maxi Kit (Cat# 56200). Increasing volumes of the elution (2, 4 and 8 µL) were used in a 20 µL reverse transcription reaction followed by qPCR amplification reaction to observe any decrease in Ct value. An increase in Ct values with increasing amount of template would be a clear indication of PCR inhibitors present in the sample. An increase in the PCR input volume used as a template in the reverse transcription reaction did not affect the Ct value generated from the qPCR amplification for both (A) 5S rRNA transcript and (B) miR-21. In fact the Ct. values tend to decrease with increasing the PCR input volume indicating that RNA purified from plasma using Norgen's kit is free of the common inhibitors usually present in plasma.

Ordering Information

| Plasma/Serum RNA Purification Kits | |
|------------------------------------|------------|
| 50 Preps (Mini) | Cat. 55000 |
| 20 Preps (Midi) | Cat. 56100 |
| 10 Preps (Maxi) | Cat. 56200 |



For more data and technical specifications please visit norgenbiotek.com or scan the QR code.

PLASMA/SERUM CIRCULATING AND EXOSOMAL RNA PURIFICATION KITS (SLURRY FORMAT)

(CAT. 42800, Dx42800, 50900, 29500)



- ✓ CE-IVDR marked in accordance with the European Commission Regulation (EU) No. 2017/746 (Dx42800)
- ✓ Isolate all sizes of circulating and exosomal RNA, including microRNA
- ✓ Versatile plasma and serum input volumes (0.25 mL to 5 mL)
- ✓ Concentrate circulating and exosomal RNA into small elution volumes
- ✓ Isolate inhibitor-free circulating and exosomal RNA
- ✓ Bind and elute all RNA irrespective of size or GC content, without bias
- ✓ Available in Spin Column or 96-well plate formats
- ✓ Process 96-well plates using vacuum or centrifugation
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Compatible with Streck Cell-Free RNA BCT® Tubes
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR RAPID AND SIMPLE ISOLATION OF CIRCULATING RNA INCLUDING EXOSOMAL RNA FROM PLASMA/SERUM SAMPLES

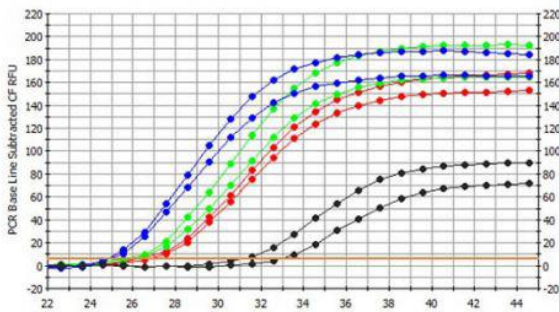


Figure 1. Isolation and Detection of Circulating RNA from Different Plasma Volumes. Norgen's Plasma/Serum Circulating RNA Purification Mini Kit (Slurry Format) was used to isolate circulating RNA from 0.5 mL, 1 mL and 2 mL plasma. 3 µL of the purified RNA was then used as the template in RT-qPCR reactions to detect the human 5S gene. The 5S housekeeping gene was detected from all plasma sample volumes used. The amplification of the 5S rRNA showed an increasing amount of RNA with increasing the sample input volume. This is represented by the decrease of the Ct value with increasing the sample input volume. RNA isolated from 0.5 mL plasma are represented by the Red lines, RNA isolated from 1 mL plasma are represented by the Green lines whereas RNA isolated from 2 mL plasma are represented by the Blue lines. The black lines correspond to the no template control.

Ordering Information

| Plasma/Serum Circulating and Exosomal RNA Purification Kits (Slurry Format) | |
|---|--------------|
| 50 Preps (Mini) | Cat. 51000 |
| 50 Preps | Cat. 42800 |
| 50 Preps | Cat. Dx42800 |
| 25 Preps (Maxi) | Cat. 50900 |
| 1 x 96-Well Plate | Cat. 29500 |

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URINE CELL-FREE CIRCULATING RNA PURIFICATION KITS
(CAT. 56900, 57000, 57100)



- ✓ Versatile urine input ranging from 250 µL to 30 mL
- ✓ No phenol extractions
- ✓ No carrier RNA
- ✓ Bind and elute all RNA irrespective of size or GC content, without bias
- ✓ Concentrate circulating RNA and exosomal RNA into a flexible elution volume ranging from 50 µL to 100 µL
- ✓ Purify high-quality RNA in 25 - 30 minutes
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on **Norgen's NGS services (pg. 188)**
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

ISOLATE ALL SIZES OF CIRCULATING AND EXOSOMAL RNA, INCLUDING MICRORNA

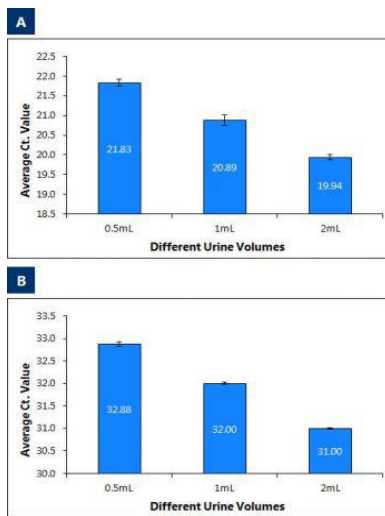


Figure 1. Purification of cell-free circulating RNA and exosomal RNA from different urine volumes. Norgen's Urine Cell-Free Circulating RNA Purification Mini Kit (Cat# 56900) was used to purify cell-free circulating and exosomal RNA from 0.5 mL, 1 mL and 2 mL urine samples. Two microlitres of the purified RNA was then used as the template in RT-qPCR reactions to assess the amplification of (A) the housekeeping 5S rRNA transcript and (B) miR-21. The average Ct value for both (A) 5S rRNA transcript and (B) miR-21 is linearly decreasing with increasing the sample input volume.

Ordering Information

| Urine Cell-Free Circulating RNA Purification Kits | |
|---|------------|
| 50 Preps (Mini) | Cat. 56900 |
| 20 Preps (Midi) | Cat. 57000 |
| 10 Preps (Maxi) | Cat. 57100 |



For more data and technical specifications please visit norgenbiotek.com or scan the QR code.

LOW ABUNDANCE RNA QUANTIFICATION KIT (CAT. 58900)



- ✓ Quantify RNA of a wide spectrum of concentrations, including the lower ng per μL and pg per μL range
- ✓ RNA is accurately quantified using a standard curve constructed from the provided RNA standard

COMPATIBLE WITH **ANY REAL-TIME PCR SYSTEM.**

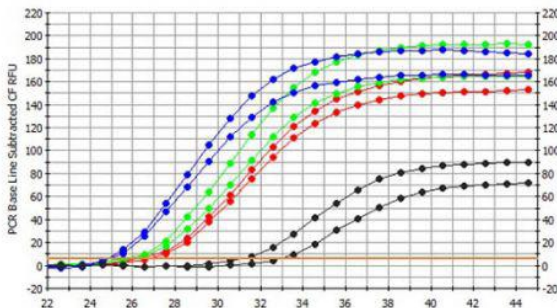


Figure 1. Sensitivity of RNA Quantification from Small Volumes of Human Plasma using the Low Abundance RNA Quantification Kit. A representative qPCR Baseline Graph showing the amplification of total plasma RNA isolated from either 50 or 200 μL of human plasma using Norgen's Plasma/Serum RNA Purification Mini Kit (Cat. 55000). The Low Abundance RNA Quantification Kit could quantify purified RNA from such low abundance samples (and others such as urine, exosomes etc) with purified RNA concentrations that are 100 pg per μL or less.

Ordering Information

Low Abundance RNA Quantification Kit

48 Reactions

Cat. 58900

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RNA CLEAN-UP AND CONCENTRATION KITS
(CAT. 23600, 43200, 25100)



- ✓ Clean-up & concentrate total RNA (including miRNA) in minutes
- ✓ Clean-up & concentrate RNA from TRIzol®, TRI Reagent®, etc
- ✓ Clean-up RNA from contaminants including enzymes, primers, nucleotides
- ✓ Rapid spin-column protocol, elute in 20 µL
- ✓ 96-well format for high throughput processing & small spin column formats for 8 µL are available
- ✓ Purified RNA is fully compatible with all downstream applications
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR RAPID AND EFFICIENT CLEAN-UP AND CONCENTRATION OF TOTAL RNA, INCLUDING MICRORNA, WITHOUT PHENOL.

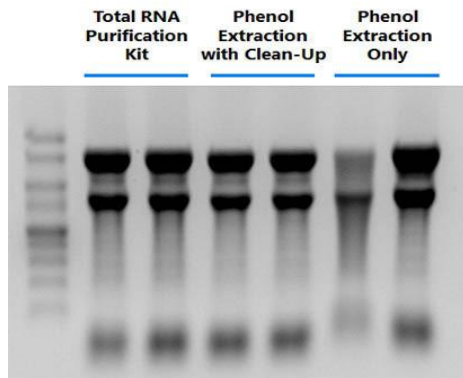


Figure 1. Effective Clean-Up to Produce High Quality Total RNA with Complete Size Diversity. Norgen's RNA Clean-Up and Concentration Kit effectively cleans up RNA isolated from phenol-based extractions without the loss of RNA diversity by retaining all RNA species including small RNAs. Total RNA was isolated from 5×10^8 E. coli using a competitor's phenol-based RNA extraction reagent. The resulting RNA was then purified using Norgens RNA Clean-Up and Concentration Kit. As controls, total RNA was extracted using both Norgen's Total RNA Purification Kit (#17200, no phenol required) and the phenol-based RNA extraction reagent only without any clean-up. Resolution of 7 µL of the 50 µL purified RNA on a 1X MOPS, 1.5% formaldehyde-agarose gel showed the RNA extracted with phenol was successfully cleaned-up by Norgen's RNA Clean-Up and Concentration Kit without the loss of small RNA species.

Ordering Information

| RNA Clean-Up and Concentration Kits | |
|-------------------------------------|------------|
| 50 Preps | Cat. 23600 |
| 100 Preps | Cat. 43200 |
| 2 x 96-Well Plates | Cat. 25100 |

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RNA CLEAN-UP AND CONCENTRATION MICRO-ELUTE KIT (CAT. 61000)



- ✓ Concentration of small amounts of RNA into 8 μ L
- ✓ Ideal for concentrating RNA samples prior to NGS library preparation
- ✓ Concentrate from larger elution volumes to more manageable elution volumes
- ✓ Ideal for concentrating RNA purified from exosomes, plasma, serum, urine, and other bodily fluids, and any RNA samples initially purified in large volumes
- ✓ Efficient RNA cleanup from enzymatic reactions – labeling, DNase treatment and in vitro transcription
- ✓ Cleanup of RNA isolated using different methods, including phenol/chloroform extractions
- ✓ Fast and easy processing using rapid spin-column format in 15 minutes
- ✓ Suitable for all sizes of RNA, including microRNA (miRNA) without bias
- ✓ Purified RNA is suitable for a variety of downstream applications, including Small RNA Sequencing. Find out more information on Norgen's NGS services (pg 184)
- ✓ Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR **RAPID AND EFFICIENT CLEAN-UP AND CONCENTRATION OF TOTAL RNA, INCLUDING MICRORNA, WITHOUT PHENOL FROM SMALL INPUT VOLUMES.**

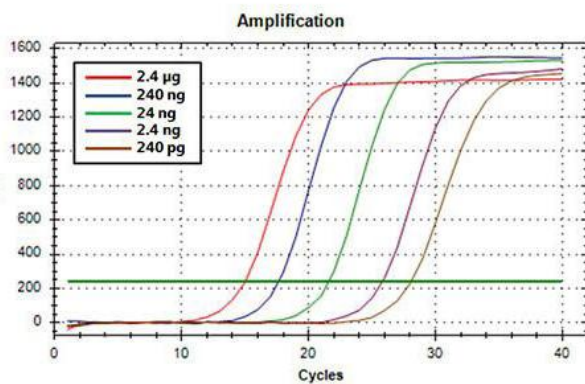


Figure 4. Concentration of miRNA. The indicated amounts of HeLa RNA were concentrated using the RNA Clean-Up and Concentration Micro-Elute Kit. Three microliters of each 8 μ L eluate were used in 10 μ L RT reactions with the miR-21-SLR primer, followed by real-time PCR using 3 μ L of the resulting cDNA and the forward primer specific for miR-21.

Ordering Information

| RNA Clean-Up and Concentration Micro-Elute Kit | |
|--|------------|
| 50 Preps | Cat. 61000 |



For more data and technical specifications please visit norgenbiotek.com or scan the QR code.

SELECT PUBLICATIONS AND APPLICATION NOTES

Total RNA Purification Kits (Cat. 17200, Dx17200, 37500, 17250, 17270), Total RNA Purification Plus Kits (Cat. 48300, 48400), Total RNA Purification Micro Kit (Cat. 35300, 35350), Total RNA Purification Plus Micro Kit (Cat. 48500), Total RNA Purification Maxi Kit (Cat. 26800), Total RNA Purification 96-Well Kits Dx (Cat. 24300, Dx24300, 24350, Dx24350, 24370, 24380, Dx24380)

Paoli, D., Pallotti, F., Nigro, G., Mazzuti, L., Hirsch, M. N., Valli, M. B., ... Lombardo, F. (2021). **Molecular diagnosis of SARS-CoV-2 in seminal fluid.** *Journal of Endocrinological Investigation*, 44(12), 2675–2684.

<https://doi.org/10.1007/s40618-021-01580-x>



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Single Cell RNA Purification Kit (Cat. 51800)

Li, B. B., Scott, E. Y., Chamberlain, M. D., Duong, B. T., Zhang, S., Done, S. J., & Wheeler, A. R. (2020). **Cell invasion in digital microfluidic microgel systems.** *Science Advances*, 6(29), eaba9589–eaba9589.

<https://doi.org/10.1126/sciadv.aba9589>



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microRNA Purification Kit (Cat. 21300)

Delfour, O., Michot, B. (2016, April 21). **Methods of detecting lung cancer.** *United States Patent Application 20160108478* Retrieved July 7, 2022.

<https://www.freepatentsonline.com/y2016/0108478.html>



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Animal Tissue RNA Purification Kit (Cat. 25700)

Alves, G. F., Aimaretti, E., Einaudi, G., Mastrocola, R., de Oliveira, J. G., Collotta, D., ... Collino, M. (2022). **Pharmacological Inhibition of FAK-Pyk2 Pathway Protects Against Organ Damage and Prolongs the Survival of Septic Mice.** *Frontiers in Immunology*, 13, 837180–837180.

<https://doi.org/10.3389/fimmu.2022.837180>



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Fatty Tissue RNA Purification Kit (Cat. 36200)

Saul, M. , Zhao, C., Driessen, T. , Eisinger, B. , & Gammie, S. . (2015). **MicroRNA expression is altered in lateral septum across reproductive stages.** *Neuroscience*, 312, 130–140.

<https://doi.org/10.1016/j.neuroscience.2015.11.019>



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Urine Exfoliated Cell RNA Purification Kit (Cat. 22550)

Guelfi, G., Cochetti, G., Stefanetti, V., Zampini, D., Diverio, S., Boni, A., & Mearini, E. (2018). **Next Generation Sequencing of urine exfoliated cells: an approach of prostate cancer microRNAs research.** *Scientific Reports*, 8(1), 7111–7118.

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Urine microRNA Purification Kit (Cat. 29000)

Pospisilova, S., Pazourkova, E., Horinek, A., Brisuda, A., Svobodova, I., Soukup, V., Hrbacek, J., Capoun, O., Hanus, T., Mares, J., Korabecna, M., Babjuk, M., (2016). **MicroRNAs in urine supernatant as potential non-invasive markers for bladder cancer detection.** *Neoplasma*, 63(05), 799–808.

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Urine Total RNA Purification Maxi Kit (Slurry Format) (Cat. 29600, Dx29600, 29650)

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Microbiome DNA Isolation Kit (Cat. 64100)

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Biofilm DNA Isolation Kit (Cat. 62300)

Rodríguez, J., Mais, L., Campana, R., Piroddi, L., Mascia, M., Gurauskis, J., ... Palmas, S. (2021). **Comprehensive characterization of a cost-effective microbial fuel cell with Pt-free catalyst cathode and slip-casted ceramic membrane.** *International Journal of Hydrogen Energy*, 46(51), 26205–26223.

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Fungi/Yeast Genomic DNA Isolation Kit (Cat. 27300, 27350)

Sikandar, S., Ujor, V. C., Ezeji, T. C., Rossington, J. L., Michel, F. C., McMahan, C. M., ... Cornish, K. (2017). **Thermomyces lanuginosus STM: A source of thermostable hydrolytic enzymes for novel application in extraction of high-quality natural rubber from Taraxacum kok-saghyz (Rubber dandelion).** *Industrial Crops and Products*, 103, 161–168.

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Bacterial Genomic DNA Isolation Kit (Cat. 17900, 17950)

Tao, X., Franasiak, J. M., Zhan, Y., Scott, R. T., Rajchel, J., Bedard, J., ... Chu, T. (2017). **Characterizing the endometrial microbiome by analyzing the ultra-low bacteria from embryo transfer catheter tips in IVF cycles: Next generation sequencing (NGS) analysis of the 16S ribosomal gene.** *Human Microbiome Journal*, 3, 15–21.

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Phage DNA Isolation Kit (Cat. 46800, 46850)

Nepal, R., Houtak, G., Karki, S., Dhungana, G., Vreugde, S., & Malla, R. (2022). **Genomic characterization of three bacteriophages targeting multidrug resistant clinical isolates of Escherichia, Klebsiella and Salmonella.** *Archives of Microbiology*, 204(6), 334–334.

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Milk DNA Preservation And Isolation Kit (Cat. 44800)

Lackey, K. A., Williams, J. E., Price, W. J., Carrothers, J. M., Brooker, S. L., Shafii, B., ... McGuire, M. K. (2017). **Comparison of commercially-available preservatives for maintaining the integrity of bacterial DNA in human milk.** *Journal of Microbiological Methods*, 141, 73–81.

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Plasma/Serum Circulating and Exosomal RNA Purification Kit (Slurry Format) (Cat. 50900)

Tritten, L., Burkman, E., Moorhead, A., Satti, M., Geary, J., Mackenzie, C., & Geary, T. (2014). **Detection of circulating parasite-derived microRNAs in filarial infections.** *PLoS Neglected Tropical Diseases*, 8(7), e2971–e2971.

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