RNA/DNA/PROTEIN PURIFICATION PLUS KIT
(CAT. 47700)

- Sequentially purify total RNA (and miRNA), DNA and proteins from a single sample
- No sample splitting or need to use phenol or precipitation methods
- Purify RNA/DNA/Protein from cultured animal cells, tissues, blood, bacteria, yeast, fungi or plants
- Rapid and efficient spin column procedure - all done in 30 minutes
- Proteins are purified on column and are soluble in the elution buffer. No further cleaning is required
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR SEQUENTIAL ISOLATION OF **TOTAL RNA, GENOMIC DNA** AND **TOTAL PROTEINS** FROM THE **SAME SAMPLE**

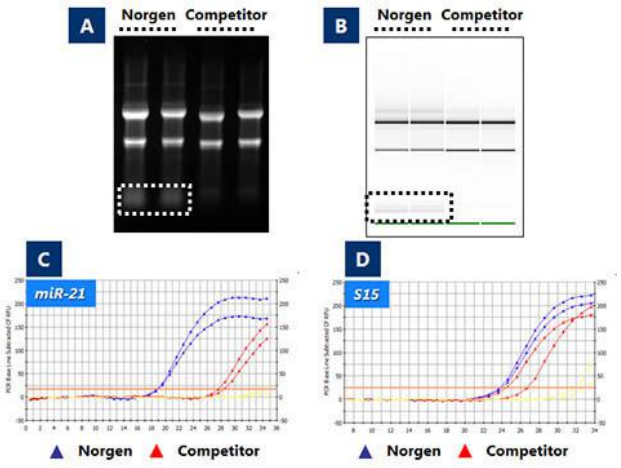

Figure 1. Recovery of True Total RNA including microRNA from HEK-293 Cells. Panel A is a 1X MOPS 1% agarose gel showing the RNA that was isolated from 2 different samples of ~ 800,000 HEK-293 cells using either Norgen's RNA/DNA/Protein Purification Plus Kit or a competitor's multiple-analyte purification kit. Both kits isolated large RNA (represented by 28S and 18S rRNA) with high integrity but Norgen's RNA/DNA/Protein Purification Plus Kit provided the added benefit of recovering small RNA without any additional protocol. Panel B is a result from a bioanalyzer resolution of the eluted RNA. Similar to the agarose gel, Norgen's RNA/DNA/Protein Purification Plus Kit showed the added benefit of recovering small RNA. The difference in small RNA recovery was also demonstrated by gene-specific RT-qPCR. One microgram of RNA was used in RT-qPCR reactions for human S15 (for Large RNA) and miR-21 (for microRNA) genes. The RNA isolated by Norgen's RNA/DNA/Protein Purification Plus Kit showed similar Ct value to RNA isolated by the competitor's kit for the large RNA (Panel D). However, Norgen's RNA/DNA/Protein Purification Plus Kit showed superior recovery of small RNA including microRNAs as depicted by the miR-21 RT-qPCR (Panel C).

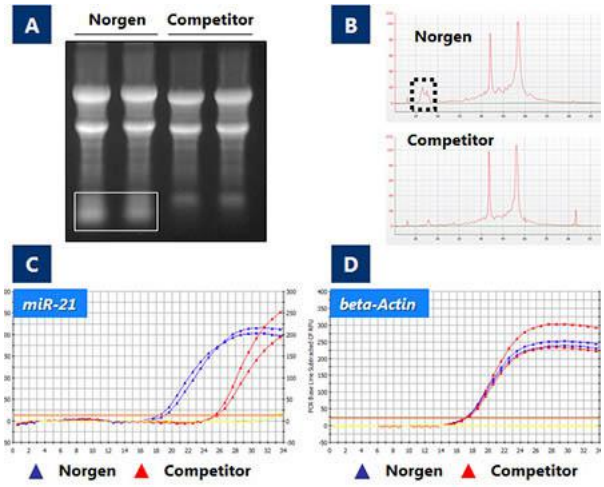

Figure 2. Recovery of True Total RNA including microRNA from Hamster Liver. Panel A is a 1X MOPS 1% agarose gel showing the RNA that was isolated from 2 different samples of 15 mg hamster liver using either Norgen's RNA/DNA/Protein Purification Plus Kit or a competitor's multiple-analyte purification kit. Both kits isolated large RNA (represented by 28S and 18S rRNA) with high integrity but Norgen's RNA/DNA/Protein Purification Plus Kit provided the added benefit of recovering small RNA without any additional protocol. Panel B is a result from a bioanalyzer resolution of the eluted RNA. Similar to the agarose gel, Norgen's RNA/DNA/Protein Purification Plus Kit showed the added benefit of recovering small RNA. The difference in small RNA recovery was also demonstrated by gene-specific RT-qPCR. One microgram of RNA was used in RT-qPCR reactions for hamster beta-Actin (for Large RNA) and miR-21 (for microRNA) genes. The RNA isolated by Norgen's RNA/DNA/Protein Purification Plus Kit showed similar Ct value to RNA isolated by the competitor's kit for the large RNA (Panel D). However, Norgen's RNA/DNA/Protein Purification Plus Kit showed superior recovery of small RNA including microRNAs as depicted by the miR-21 RT-qPCR (Panel C).

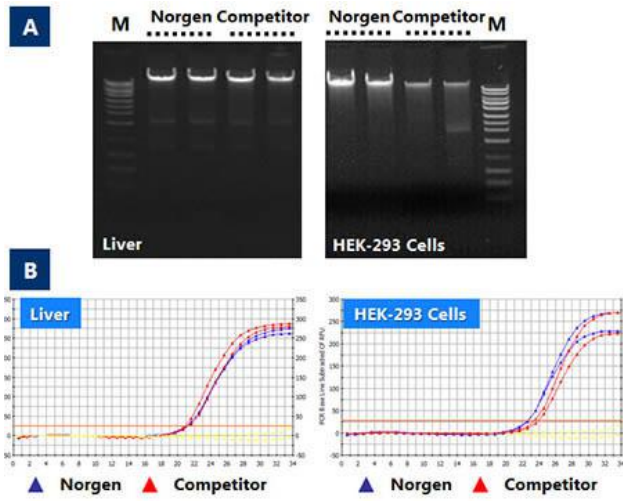

Figure 3. Recovery of Intact, High Quality Genomic DNA from HEK-293 cells and Hamster Liver. Panel A is a 1% agarose gel showing the gDNA isolated from the same HEK-293 cell or hamster liver samples using Norgen's RNA/DNA/Protein Purification Plus Kit or competitor's multiple-analyte purification kit. Lane M is Norgen's HighRanger 1 kb DNA Ladder and the sample lanes contain 10 µL of each of the 100 µL elutions. The gel showed high quality, and intact genomic DNA, with a better yield using Norgen's RNA/DNA/Protein Purification Plus Kit. Panel B is the result of qPCR amplification of 25 ng of eluted genomic DNA using 5S rRNA-specific primers. Genomic DNA isolated using Norgen's RNA/DNA/Protein Purification Plus Kit is of high quality and performed similar to or better than competitor's product.

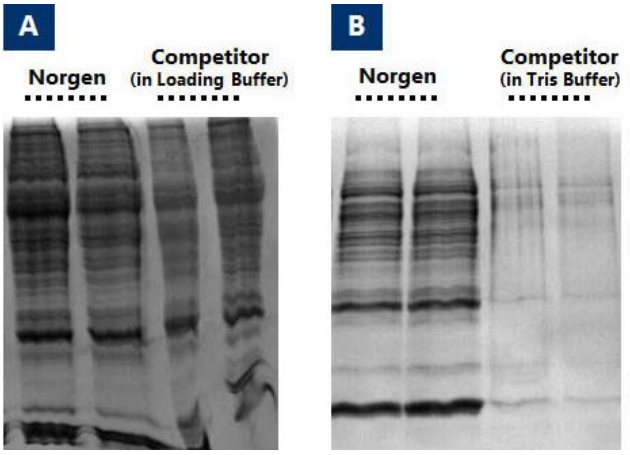

Figure 4. High Quality Total Proteins Eluted in Mass Spec-Compatible Buffer. Norgen's RNA/DNA/Protein Purification Plus Kit provides an additional column purification step for effective concentration and clean-up of the isolated proteins. In contrast, most competing multiple analyte isolation products require protein precipitation and the precipitated proteins are required to be resuspended in buffer with high-detergent content (such as SDS-PAGE loading dye) for full recovery. Protein fractions (from hamster liver) isolated by Norgen's RNA/DNA/Protein Purification Plus Kit and a competitor's kit were resolved on a 12% SDS-PAGE protein gel. Panel A showed that when the competitor's precipitated protein fraction was resuspended in a provided SDS-PAGE loading buffer, the protein recovery was similar among the two kits. Panel B showed that when the same precipitated protein fraction from the competitor's kit was resuspended in a Tris-based buffer containing no detergent or denaturant, the protein recovery became drastically reduced. In contrary, Norgen's RNA/DNA/Protein Purification Plus Kit purified proteins by column and the eluted proteins are already in a buffer compatible with most downstream applications including mass spectrophotometry as well as standard protein quantification methods (including Bradford assays).

Ordering Information

RNA/DNA/Protein Purification Plus Kit	
50 Preps	Cat. 47700

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

RNA/DNA/PROTEIN PURIFICATION PLUS MICRO KIT (CAT. 51600)

- Sequentially purify RNA (and miRNA), DNA and proteins from a single sample
- Small elution volume down to 20 µL with a specialized column
- No sample splitting, no need to use phenol or precipitation methods
- Proteins are purified on column and are soluble in the elution buffer
- Proteins require no further cleaning - ready for Western blot and Mass spectrometry
- Suitable for cells, tissues, stem cells, CTC, small input of samples
- Rapid and efficient spin column procedure - all done in 30 minutes
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

MULTIPLE-ANALYTE ISOLATION FROM THE **SAME SAMPLE** WITH ELUTION VOLUMES **DOWN TO 20 µL**

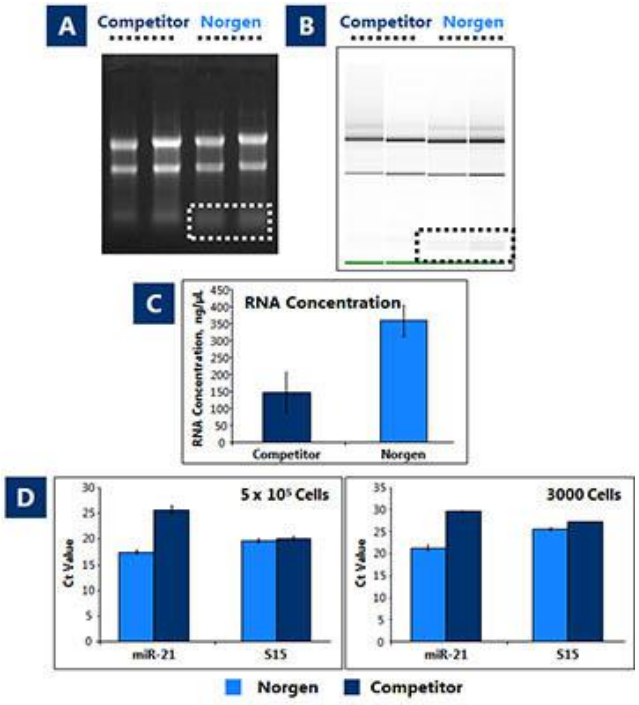

Figure 1. Recovery of True Total RNA including microRNA from HeLa Cells. Panel A is a 1X MOPS 1% agarose gel showing the RNA that was isolated from 2 different samples of ~500,000 HeLa cells using either Norgen's RNA/DNA/Protein Purification Plus Micro Kit or a competitor's multiple-analyte purification kit. Both kits isolated large RNA (represented by 28S and 18S rRNA) with high integrity but Norgen's RNA/DNA/Protein Purification Plus Micro Kit provided the added benefit of recovering small RNA without any additional protocols. Panel B is a result from a bioanalyzer resolution of the eluted RNA. Similar to the agarose gel, Norgen's RNA/DNA/Protein Purification Plus Micro Kit showed the added benefit of recovering small RNA as well as a much higher concentration of RNA (Panel C). The difference in small RNA recovery was also demonstrated by gene-specific RT-qPCR. Two microliters of RNA isolated from both 500,000 and 3,000 HeLa cells were used in RT-qPCR reactions for human S15 (for Large RNA) and miR-21 (for microRNA) genes. The RNA isolated by Norgen's RNA/DNA/Protein Purification Plus Micro Kit showed similar or better (lower) Ct value than RNA isolated by the competitor's kit for the large RNA. More importantly, Norgen's RNA/DNA/Protein Purification Plus Micro Kit showed superior recovery of small RNA including microRNAs as depicted by the miR-21 RT-qPCR (Panel D).

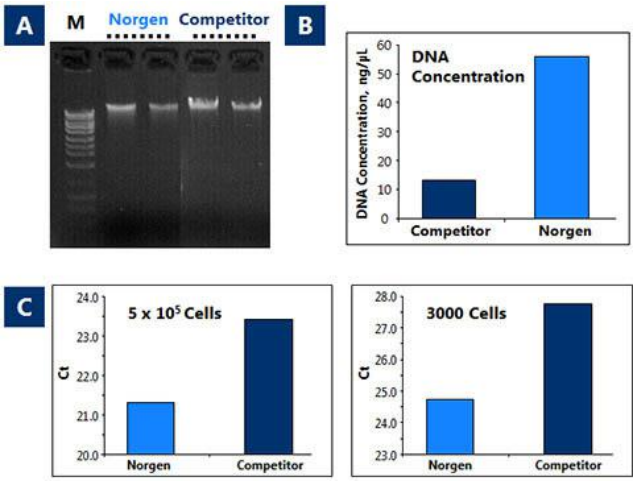

Figure 2. Recovery of Intact, High Quality Genomic DNA from HeLa Cells. Panel A is a 1% agarose gel showing equal amounts of gDNA isolated from the same HeLa cells using Norgen's RNA/DNA/Protein Purification Plus Micro Kit or competitor's multiple-analyte purification kit. Lane M is Norgen's HighRanger 1 kb DNA Ladder. The gel shows high quality, intact genomic DNA with a better DNA concentration using Norgen's RNA/DNA/Protein Purification Plus Micro Kit (Panel B). Panel C is the result of qPCR amplification of 2 µL of eluted genomic DNA using 5S rRNA-specific primers. Genomic DNA isolated using Norgen's RNA/DNA/Protein Purification Plus Micro Kit is of high quality, and performed better than DNA purified using a competitor's product.

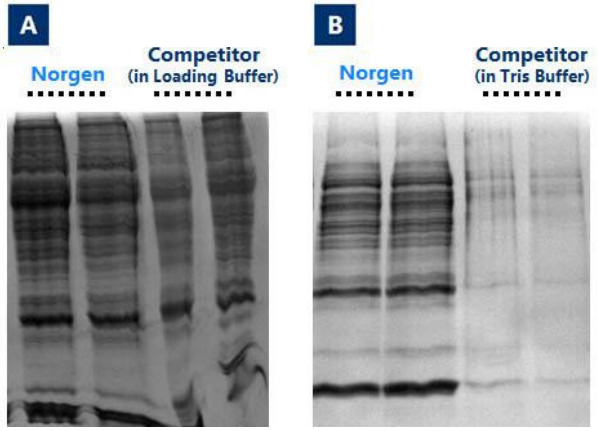

Figure 3. High Quality Total Proteins Eluted in Mass Spec-Compatible Buffer. Norgen's RNA/DNA/Protein Purification Plus Micro Kit provides an additional column purification step for effective concentration and clean-up of the isolated proteins. In contrast, most competing multiple analyte isolation products require protein precipitation and the precipitated proteins need to be resuspended in a buffer with high-detergent content (such as SDS-PAGE loading dye) for full recovery. Protein fractions (from hamster liver) isolated by Norgen's RNA/DNA/Protein Purification Plus Micro Kit and a competitor's kit were resolved on a 12% SDS-PAGE protein gel. Panel A showed that when the competitor's precipitated protein fraction was resuspended in a provided SDS-PAGE loading buffer, the protein recovery was similar among the two kits. Panel B showed that when the same precipitated protein fraction from the competitor's kit was resuspended in a Tris-based buffer containing no detergent or denaturant, the protein recovery became drastically reduced. In contrast, Norgen's RNA/DNA/Protein Purification Plus Micro Kit purified proteins by column and the eluted proteins are already in a buffer compatible with most downstream applications including mass spectrophotometry as well as standard protein quantification methods (including Bradford assays).

Ordering Information

RNA/DNA/Protein Purification Plus Micro Kit	
50 Preps	Cat. 51600

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RNA/DNA/PROTEIN PURIFICATION 96-WELL PLUS KIT (CAT. 51700)

- Consistent, high quality RNA/DNA/Proteins ready for downstream applications
- Sequentially isolate nucleic acids and proteins from a single lysate – no need to split the lysate
- Isolate total RNA including microRNA
- Proteins are eluted ready to use- require no further clean up or purification
- No phenol or chloroform extractions
- Fast and easy processing using vacuum manifold, centrifuge and easily automatable
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR **96-WELL SEQUENTIAL ISOLATION** OF **TOTAL RNA, GENOMIC DNA** AND **TOTAL PROTEINS** FROM **THE SAME SAMPLE**

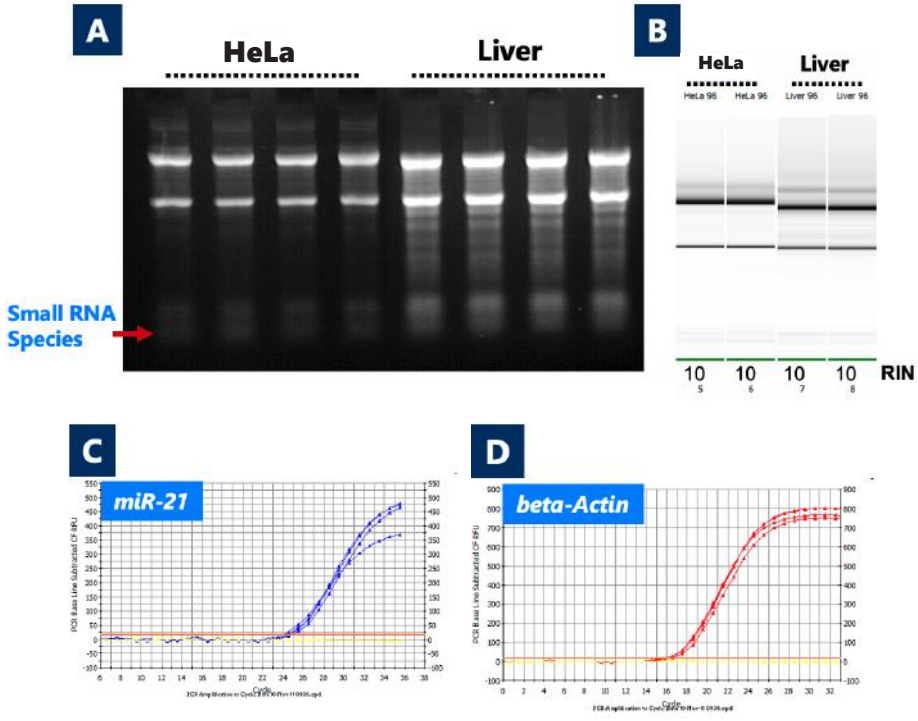

Figure 1. High Throughput Isolation of High Quality RNA with Complete Size Range without the Use of Phenol. Norgen's RNA/DNA/Protein Purification 96-Well Plus Kit allows for the consistent isolation of high quality RNA, with complete size range from the very large RNA down to small RNA without the use of phenol. HeLa RNA and hamster liver RNA was isolated using Norgen's RNA/DNA/Protein Purification 96-Well Plus Kit in replicates. (A) The isolated RNA was resolved on a 1.2% formaldehyde agarose gel. All replicates showed both high yield and high quality. In addition, all replicates showed effective recovery of all sizes of RNA including the small RNA (arrow). (B) The isolated RNA was resolved on an Agilent RNA Nano 6000 Chip. All RNA achieved high RNA Integrity Number (RIN). The RNA isolated by Norgen's RNA/DNA/Protein Purification 96-Well Plus Kit showed good recovery of both small RNA (miR-21, (C)) and large RNA (beta-Actin, (D)).

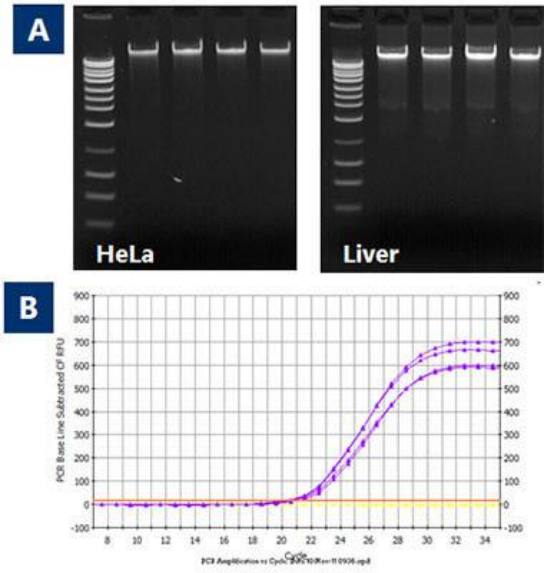

Figure 2 Recovery of Intact, High Quality Genomic DNA from HeLa cells and Hamster Liver. Panel A is a 1% agarose gel showing the gDNA isolated from the same HeLa cell or hamster liver samples using Norgen's RNA/DNA/Protein Purification 96-Well Plus Kit with Norgen's HighRanger 1 kb DNA Ladder and the sample lanes contain 10 µL of each of the 100 µL elutions. The gel showed high quality, and intact genomic DNA. Panel B is the result of qPCR amplification of 25 ng of eluted genomic DNA using 5S rRNA-specific primers. Genomic DNA isolated using Norgen's RNA/DNA/Protein Purification 96-Well Plus Kit is of high quality and is compatible to sensitive downstream applications.

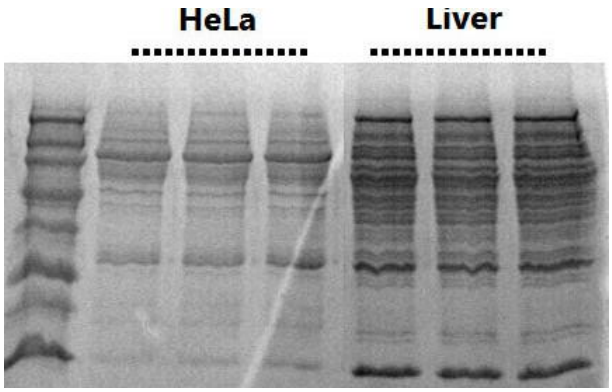

Figure 3. Consistent Isolation and Purification of Total Protein from the same sample used for RNA and DNA Isolation. Norgen's RNA/DNA/Protein Purification 96-Well Plus Kit allows sequential isolation of RNA, DNA and protein from the same sample without splitting. The flowthrough samples from the RNA/DNA isolation in Figure 1 and Figure 2 were further purified using Norgen's RNA/DNA/Protein Purification 96-Well Plus Kit. Ten microliters of the 100 µL protein elutions were loaded on a 10% SDS-PAGE gel. The proteins are consistent in yield, intact and of the highest quality, and can be used in a number of different downstream applications.

Ordering Information

RNA/DNA/Protein Purification 96-Well Plus Kit	
1 x 96-well plate	Cat. 51700

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RNA/DNA PURIFICATION KIT
(CAT. 48700)

- Sequentially isolate and purify total RNA and DNA from a single sample
- Two column system: one for DNA and one for RNA
- The RNA column is for the purification of total RNA including microRNA
- No need to split the lysate, or to use phenol or precipitation methods
- Rapid and efficient spin column procedure - it takes only 30 minutes
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR **SEQUENTIAL ISOLATION** OF **TOTAL RNA** AND **GENOMIC DNA** FROM **THE SAME SAMPLE**

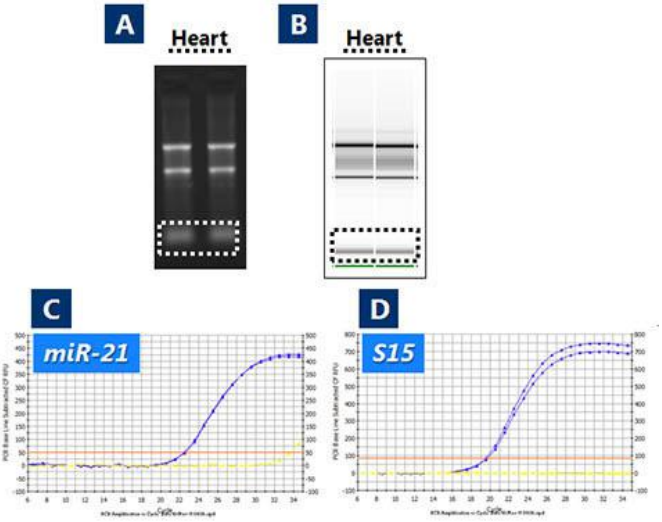

Figure 1. Recovery of True Total RNA including microRNA from Hamster Heart. Panel A is a 1X MOPS 1% agarose gel showing the RNA that was isolated from 2 different samples of 10 mg hamster heart using Norgen's RNA/DNA Purification Kit. Norgen's RNA/DNA Purification Kit isolated large RNA (represented by 28S and 18S rRNA) with high integrity. Moreover, it provided the added benefit of recovering small RNA without any additional protocol. Panel B is a result from a bioanalyzer resolution of the eluted RNA. Similar to the agarose gel, Norgen's RNA/DNA Purification Kit showed the added benefit of recovering small RNA. The effectiveness of small RNA recovery was also demonstrated by gene-specific RT-qPCR. One microgram of RNA was used in RT-qPCR reactions for human S15 (for Large RNA) and miR-21 (for microRNA) genes. The RNA isolated by Norgen's RNA/DNA Purification Kit showed detection of both small RNA (Panel C) and the large RNA (Panel D).

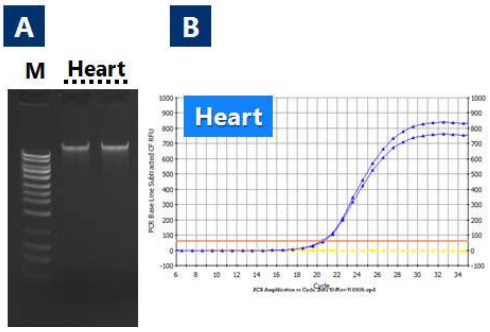

Figure 2. Recovery of Intact, High Quality Genomic DNA from Hamster Heart. Panel A is a 1% agarose gel showing the gDNA isolated from the same hamster heart samples above using Norgen's RNA/DNA Purification Kit. Lane M is Norgen's HighRanger 1 kb DNA Ladder and the sample lanes contain 10 µL of each of the 100 µL elutions. The gel showed high quality, and intact genomic DNA. Panel B is the result of qPCR amplification of 25 ng of eluted genomic DNA using 5S rRNA-specific primers. Genomic DNA isolated using Norgen's RNA/DNA Purification Kit is of high quality with effective qPCR amplification.

Ordering Information

RNA/DNA Purification Kit	
50 preps	Cat. 48700

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RNA/DNA PURIFICATION MICRO KIT
(CAT. 50300)

- Sequentially isolate and purify total RNA and DNA from a single sample
- Two specialized small diameter columns: 1) for DNA and 2) for RNA
- The RNA column is for the purification of Total RNA including microRNA
- Ideal for cell number inputs of 500,000 and as little as 5 cells
- Elute DNA or RNA in as little as 20 µL for clean and concentrated sample
- No need to split the lysate, or to use phenol or precipitation methods
- Rapid and efficient spin column procedure - it takes only 30 minutes
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR **SEQUENTIAL ISOLATION** OF **TOTAL RNA** AND **GENOMIC DNA** USING **THE SAME SAMPLE** FROM AS LITTLE AS **20 µL**

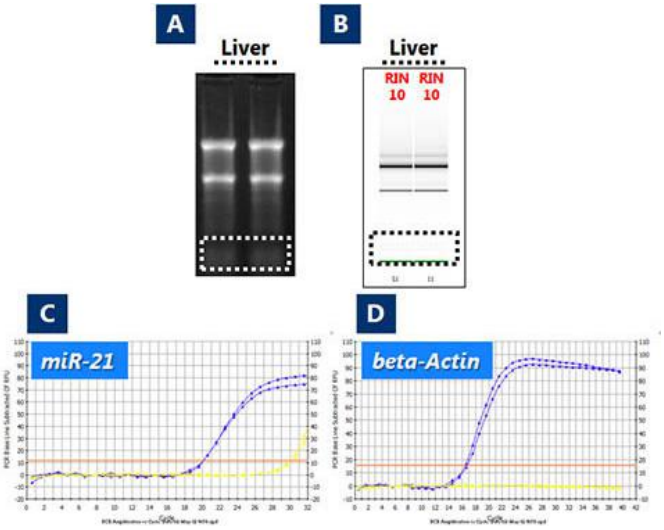

Figure 1. Recovery of True Total RNA including microRNA from Hamster Liver. Panel A is a 1X MOPS 1% agarose gel showing 3 µL of 20 µL eluted RNA that was isolated from 2 different samples of 5 mg hamster liver using Norgen's RNA/DNA Purification Micro Kit. Norgen's RNA/DNA Purification Micro Kit isolated large RNA (represented by 28S and 18S rRNA) with high integrity. Moreover, it provided the added benefit of recovering small RNA without any additional protocol. Panel B is a result from a bioanalyzer resolution of the eluted RNA. Similar to the agarose gel, Norgen's RNA/DNA Purification Micro Kit showed the added benefit of recovering small RNA while isolating very high quality RNA. The effectiveness in small RNA recovery was also demonstrated by gene-specific RT-qPCR. One microgram of RNA was used in RT-qPCR reactions for beta-Actin (for Large RNA) and miR-21 (for microRNA) genes. The RNA isolated by Norgen's RNA/DNA Purification Micro Kit showed detection of both small RNA (Panel C) and the large RNA (Panel D).

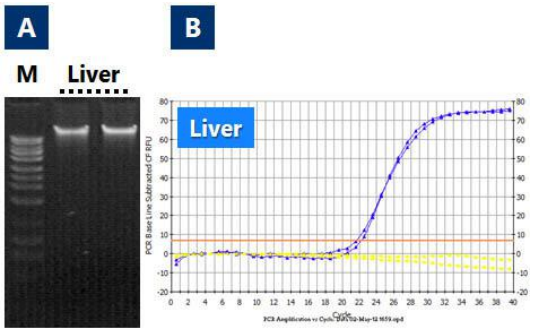

Figure 2. Recovery of Intact, High Quality Genomic DNA from Hamster Liver. Panel A is a 1% agarose gel showing the gDNA isolated from the same hamster liver samples using Norgen's RNA/DNA Purification Micro Kit. Lane M is Norgen's HighRanger 1 kb DNA Ladder and the sample lanes contain 3 µL of each of the 20 µL elutions. The gel showed high quality, and intact genomic DNA. Panel B is the result of qPCR amplification of 25 ng of eluted genomic DNA using 5S rRNA-specific primers. Genomic DNA isolated using Norgen's RNA/DNA Purification Micro Kit is of high quality with effective qPCR amplification.

Ordering Information

RNA/DNA Purification Micro Kit	
50 preps	Cat. 50300

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RNA/PROTEIN PURIFICATION PLUS KIT (CAT. 48200)

- Sequentially purify total RNA and total proteins from a single sample
- Kit includes a gDNA elimination column
- No sample splitting required
- No phenol step required for efficient isolation
- Ideal for small or difficult to obtain samples
- Purify RNA and proteins from cultured animal cells, tissues, blood, bacteria, yeast, fungi or plants
- Rapid and efficient spin column procedure
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR **SEQUENTIAL ISOLATION** OF **TOTAL RNA** AND **TOTAL PROTEINS** FROM **THE SAME SAMPLE**

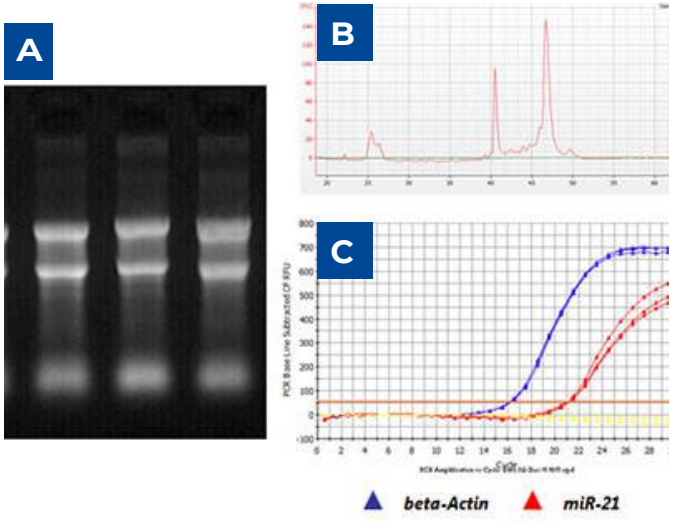

Figure 1. Recovery of True Total RNA including microRNA from Hamster Liver. Panel A is a 1X MOPS 1% agarose gel showing the RNA that was isolated from 2 different samples of 10 mg hamster liver using Norgen's RNA/Protein Purification Plus Kit. Norgen's RNA/Protein Purification Plus Kit isolated both large RNA (represented by 28S and 18S rRNA) as well as small RNA with high integrity and without having to perform any additional protocol. Panel B is a result from a bioanalyzer resolution of the eluted RNA. Similar to the agarose gel, the Bioanalyzer showed that Norgen's RNA/Protein Purification Plus Kit has the added benefit of recovering small RNA. One microgram of the RNA was used in RT-qPCR reactions for the detection of human beta-Actin (for Large RNA) and miR-21 (for microRNA) genes. The RNA isolated using Norgen's RNA/Protein Purification Plus Kit showed superior recovery of both large RNA and small RNA including microRNAs as depicted by the successful miR-21 RT-qPCR (Panel C).

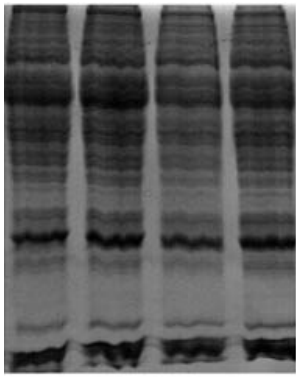

Figure 2. High Quality Total Proteins Eluted in Mass Spec-Compatible Buffer. Norgen's RNA/Protein Purification Plus Kit provides a column purification step for effective concentration and clean-up of the isolated proteins. The proteins are eluted into a buffer which is compatible with many downstream applications including mass spectrometry as well as standard protein quantification methods (including Bradford assays). In contrast, most competing multiple analyte isolation products require protein precipitation and the precipitated proteins are required to be resuspended in buffer with high-detergent content (such as SDS-PAGE loading dye) for full recovery. In this figure, the protein fraction isolated from hamster liver using Norgen's RNA/Protein Purification Plus Kit was resolved direclty on a 12% SDS-PAGE protein gel. Norgen's RNA/Protein Purification Plus Kit purified the proteins by column and the eluted proteins are already in buffer compatible with downstream applications.

Ordering Information

RNA/Protein Purification Plus Kit	
50 preps	Cat. 48200

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PLASMA/SERUM TOTAL CFC-NUCLEIC ACID ADVANCED PURIFICATION KIT (CAT. 68100)

- Versatile plasma/serum input ranging from 1 mL to 6 mL
- No phenol extractions
- No carrier RNA
- Minimal high molecular weight gDNA contamination in the purified cfc-DNA
- 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
- Compatible with fresh, preserved or frozen serum/plasma prepared from blood collected on either Norgen's cf-DNA/cf-RNA Preservative Tubes (Cat. 63950, 63960), Cell-Free DNA BCT® (Streck), EDTA or Citrate
- 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 **SIMPLE COMBINED PURIFICATION** OF **ALL SIZES** OF **CFC-DNA, CT-DNA** AND **CIRCULATING/EXOSOMAL RNA, INCLUDING MICRORNA.**

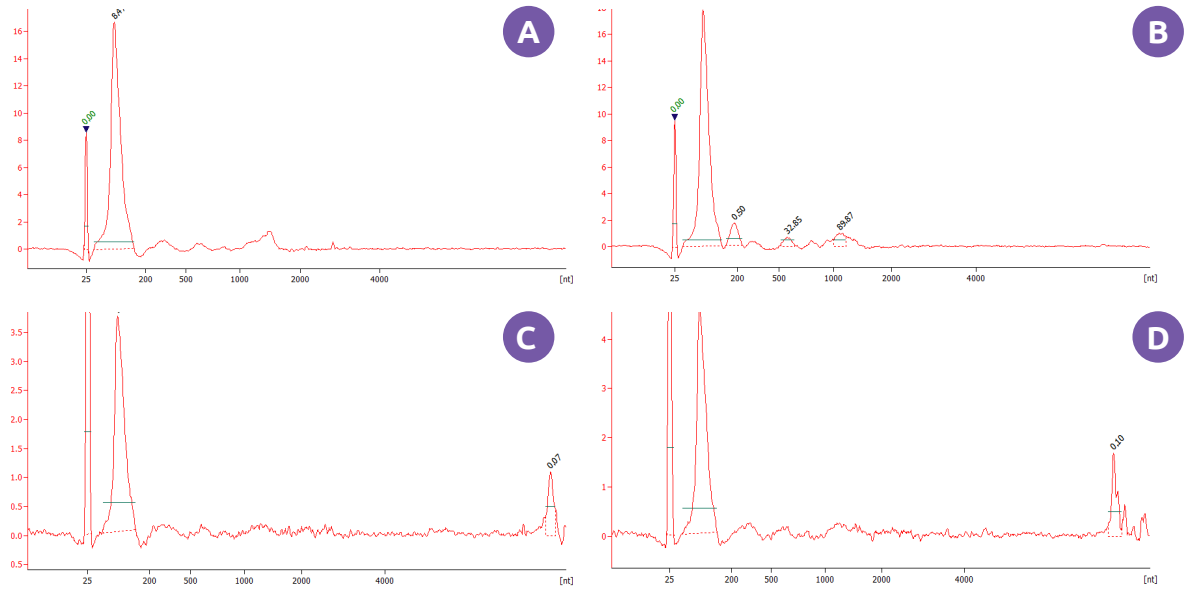

Figure 1. A representative Bioanalyzer RNA Pico Chip trace showing the quality/quantity of the RNA purified from 4 mL K2 EDTA plasma using A) Norgens Plasma/Serum Total cfc-Nucleic Acid Advanced Purification Kit (Automated Isolation), B) Norgens Plasma/Serum Total cfc-Nucleic Acid Advanced Purification Kit (Manual Isolation), C) Competitor Q's ccfDNA/RNA Kit and D) Competitor Q's Circulating Nucleic Acid Kit. All purification methods showed the correct cf-RNA size on the bioanalyzer trace however the amount of the cf-RNA recovered using Norgen's technology (as can be noticed by the height of the cf-RNA peak) was significantly higher than that for the cf-RNA purified using the silica-based technology.

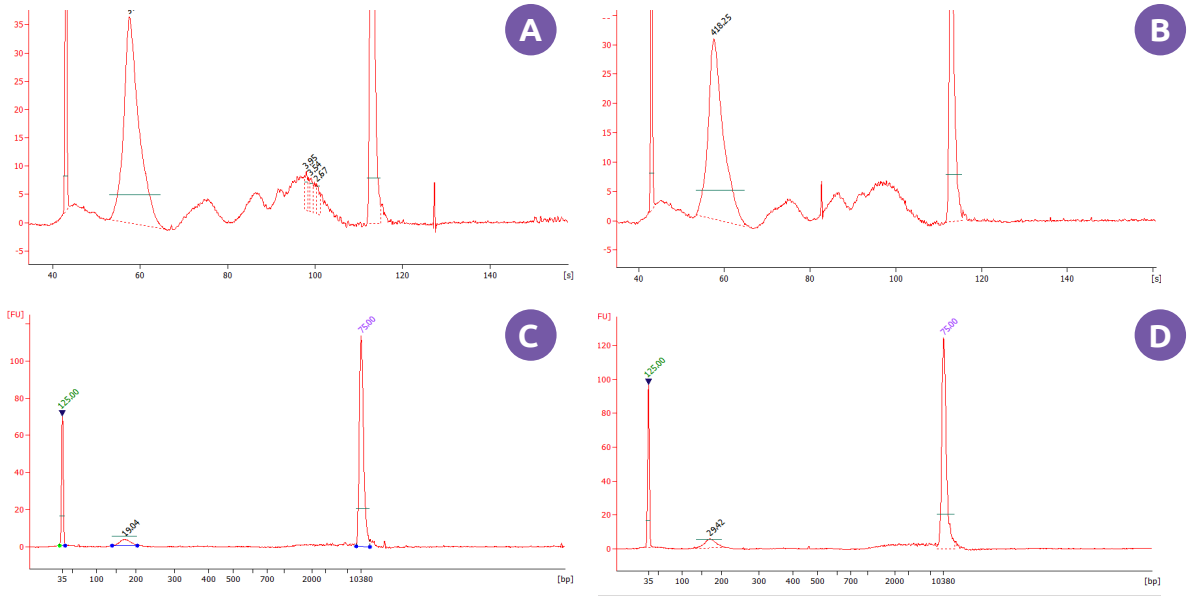

Figure 2. A representative Bioanalyzer High Sensitivity DNA Chip trace showing the quality/quantity of the cf-DNA purified from 4 mL K2 EDTA plasma A) Norgens Plasma/Serum Total cfc-NA Advanced Purification Kit (Automated Isolation), B) Norgens Plasma/Serum Total cfc-NA Advanced Purification Kit (Manual Isolation), C) Competitor Q's ccfDNA/RNA Kit and D) Competitor Q's MinElute ccfDNA Midi Kit. All purification methods showed the correct cf-DNA size (~180bp) on the bioanalyzer trace however the amount of the cf-DNA recovered using Norgens technology (as can be noticed by the height of the cf-DNA peak) was significantly higher than recovered using the silica-based technology.

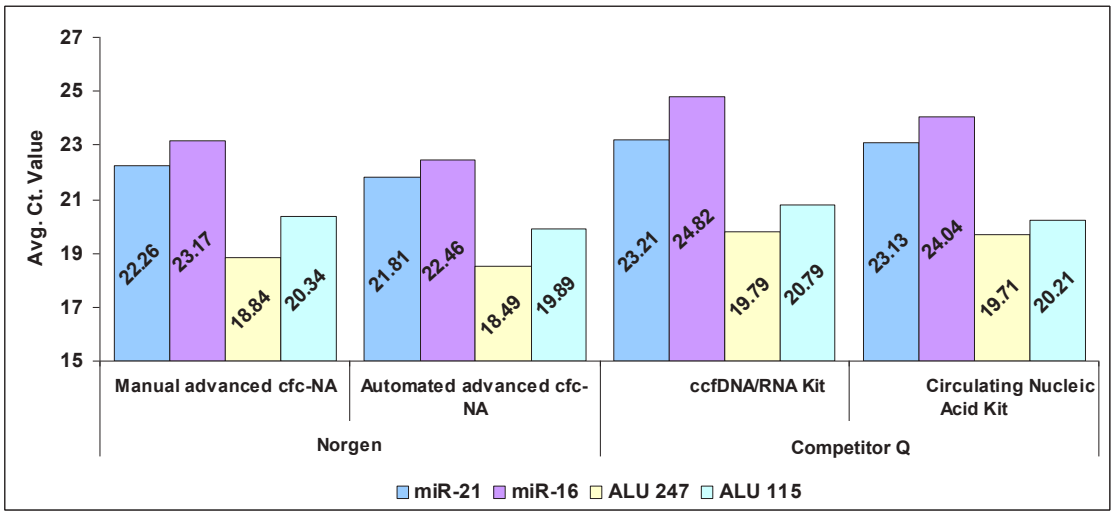

Figure 3. Real-Time PCR amplification of miR-21, miR-16 (cfc-RNA targets) and ALU 247, ALU 115 (cfc-DNA targets) from Total cfc-Nucleic acid purified from 4mL K2 EDTA plasma using different purification methods. Norgen's SiC technology, manual and automated procedure, was superior as compared to the amplification of the same targets amplified from Total Nucleic aicd purified from K2 EDTA plasma using the Silica-based technology represented by Competitor Q.

Ordering Information

Plasma/Serum Total cfc-Nucleic Acid Advanced Purification Kit	
50 preps	Cat. 68100

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

PLASMA/SERUM CFC-DNA/CFC-RNA ADVANCED FRACTIONATION KIT (CAT. 68300)

- Versatile plasma/serum input ranging from 1 mL to 6 mL
- No phenol extractions or carrier RNA
- Minimal high molecular weight gDNA contamination in the purified cfc-DNA
- 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

FOR **RAPID** AND **SIMPLE SIMULTANEOUS PURIFICATION** OF **ALL SIZES OF CFC-DNA, CT-DNA** AND **CIRCULATING/EXOSOMAL RNA, INCLUDING MICRORNA** FROM THE **SAME PLASMA/SERUM SAMPLE**

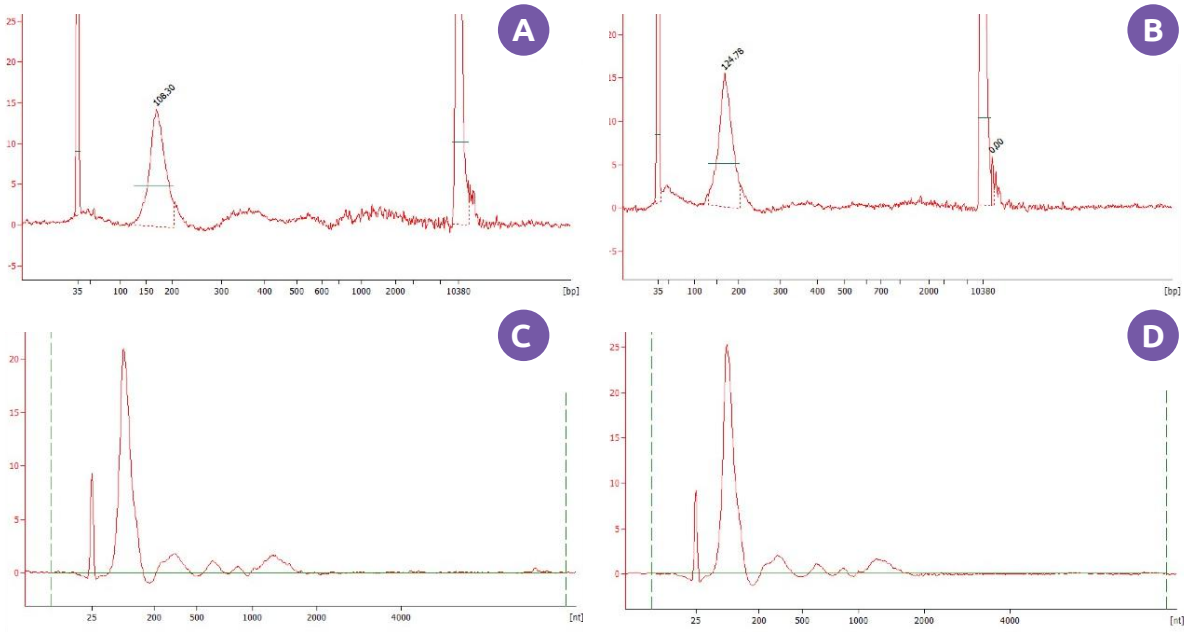

Figure 1. Representative Bioanalyzer RNA Pico Chip traces and High Sensitivity DNA Chip traces showing the quality/quantity of the RNA fraction and the DNA fraction purified simultaneously from the same 4 mL K2 EDTA plasma using both automated and manual isolation. A) Norgens Plasma/Serum cfc-DNA/cfc-RNA Advanced Fractionation Kit (DNA Fraction from Automated Isolation), B) Norgens Plasma/Serum cfc-DNA/cfc-RNA Advanced Fractionation Kit (DNA Fraction from Manual Isolation), C) Norgens Plasma/Serum cfc-DNA/cfc-RNA Advanced Fractionation Kit (RNA Fraction from Automated Isolation), D) Norgens Plasma/Serum cfc-DNA/cfc-RNA Advanced Fractionation Kit RNA Fraction from Manual Isolation). All purification methods showed the correct cf-RNA size on the Bioanalyzer trace.

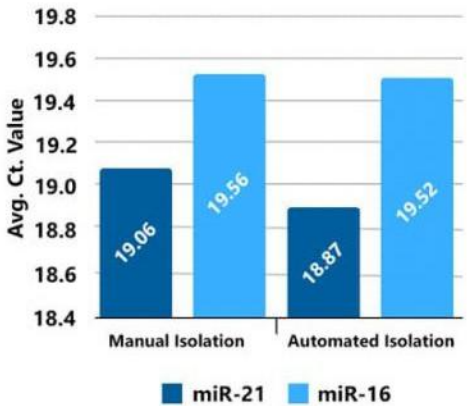

Figure 2. RT-qPCR amplification of miR-21 and miR-16 from the RNA fraction purified from 4mL K2 EDTA plasma using Norgen's Plasma/Serum cfc-DNA/cfc-RNA Advanced Fractionation Kit, both manually and automated. There is no difference in the amplification of both miR-21 and miR-16 between the automated and the manual isolation.

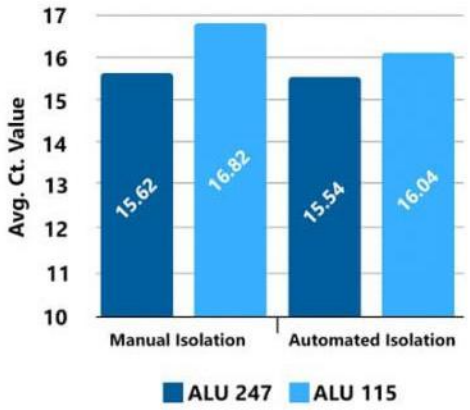

Figure 3. Real-Time PCR amplification of ALU 247 and ALU 115 from the DNA fraction purified from 4mL K2 EDTA plasma using Norgen's Plasma/Serum cfc-DNA/cfc-RNA Advanced Fractionation Kit, both manually and automated. There is no difference in the amplification of both ALU 247 and ALU 115 between the automated and the manual isolation.

Ordering Information

Plasma/Serum cfc-DNA/cfc-RNA Advanced Fractionation Kit	
50 preps	Cat. 68300

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

PLASMA/SERUM RNA/DNA PURIFICATION MINI KIT (CAT. 55200)

- Isolate all sizes of circulating and exosomal RNA, including microRNA
- Isolate all sizes of circulating DNA from plasma and serum samples
- Isolate viral and bacterial DNA and RNA
- Versatile plasma and serum input volumes (10 µL - 200 µL)
- No phenol extractions
- Bind and elute all RNA irrespective of size or GC content, without bias
- Concentrate circulating RNA, exosomal RNA and cell-free circulating DNA into a flexible elution volume ranging from 10 µL to 25 µL
- Isolate inhibitor-free nucleic acids
- Purify high-quality RNA and DNA in 30 minutes

FOR **RAPID** AND **SIMPLE SEQUENTIAL PURIFICATION** OF **CIRCULATING RNA, EXOSOMAL RNA** AND **CFC-DNA** FROM **PLASMA/SERUM SAMPLES**

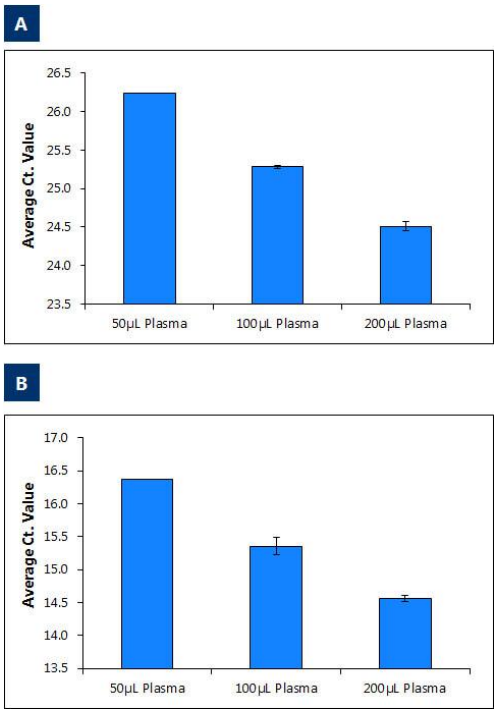

Figure 1. Purification of Circulating RNA from Different Plasma Volumes. Norgen's Plasma/Serum RNA/DNA Purification Mini Kit was used to purify circulating RNA from 50 µL, 100 µL and 200 µL plasma prepared from blood collected on EDTA. Three microlitres of the purified RNA was then used as the template in RT-qPCR reactions to detect miR-21 (Figure 1A) and the housekeeping 5S rRNA transcript (Figure 1B). The relative amount of both the miR-21 (Figure 1A) and the 5S rRNA transcript (Figure 1B) is linearly increasing with increasing the sample input volume.

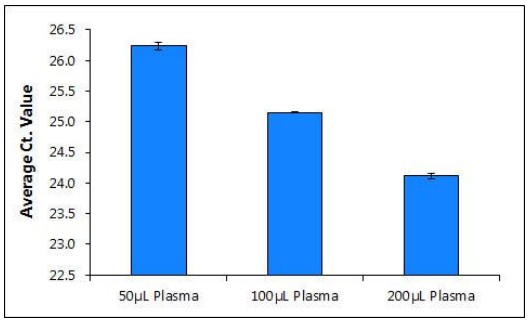

Figure 2. Purification of Cell-Free Circulating DNA from Different Plasma Volumes. Norgen's Plasma/Serum RNA/DNA Purification Mini Kit was used to purify cell-free circulating DNA from 50 µL, 100 µL and 200 µL plasma prepared from blood collected on EDTA. Three microlitres of the purified DNA was then used as the template in qPCR reactions to detect the housekeeping 5S rRNA transcript. The average Ct value for the 5S rRNA gene is linearly decreasing with increasing the sample input volume.

Ordering Information

Plasma/Serum RNA/DNA Purification Mini Kit	
50 preps	Cat. 55200

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

PLASMA/SERUM CELL-FREE CIRCULATING AND VIRAL NUCLEIC ACID PURIFICATION KITS (CAT. 56300, 56400, 56500)

- Versatile plasma/serum input ranging from 50 µL to 5mL
- No phenol extractions
- No carrier RNA
- Bind and elute all RNA irrespective of size or GC content, without bias
- Concentrate circulating DNA, circulating and exosomal RNA, viral DNA and viral RNA into a flexible elution volume ranging from 10 µL to 100 µL
- Purify high-quality RNA/DNA in 15 -40 minutes
- Compatible with Streck Cell-Free DNA BCT® Tubes
- 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)

ISOLATE ALL SIZES OF CIRCULATING DNA, CIRCULATING AND EXOSOMAL RNA, INCLUDING MICRORNA, VIRAL DNA/RNA IN ONE ELUTION

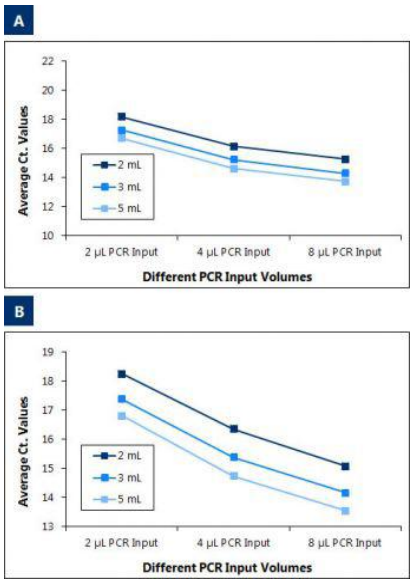

Figure 1. Determination of the amount of inhibition present in plasma RNA samples when detecting the human 5S transcript and miR-21. RNA was isolated from 2 mL, 3 mL and 5 mL plasma using Norgen's Plasma/Serum Cell-Free Circulating and Viral Nucleic Acid Purification Maxi Kit (Cat# 56500). Increasing 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 Cell-Free Circulating and Viral Nucleic Acid Purification Kits	
50 preps (Mini)	Cat. 56300
20 Preps (Midi)	Cat. 56400
10 Preps (Maxi)	Cat. 56500

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

URINE CELL-FREE CIRCULATING AND VIRAL NUCLEIC ACID PURIFICATION KITS (CAT. 59900, 60000, 60100)

- Versatile urine input ranging from 250 µL - 30 mL
- No phenol extractions nor carrier RNA
- Bind and elute all RNA irrespective of size or GC content, without bias
- Concentrate circulating DNA, circulating RNA and exosomal RNA, viral DNA, viral RNA into a flexible elution volume ranging from 50 µL - 100 µL
- Purify high-quality RNA/DNA in 25 - 50 minutes
- Compatible with fresh, frozen or preserved urine sample
- 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 DNA, CIRCULATING AND EXOSOMAL RNA, INCLUDING MICRORNA, VIRAL DNA/RNA IN ONE ELUTION

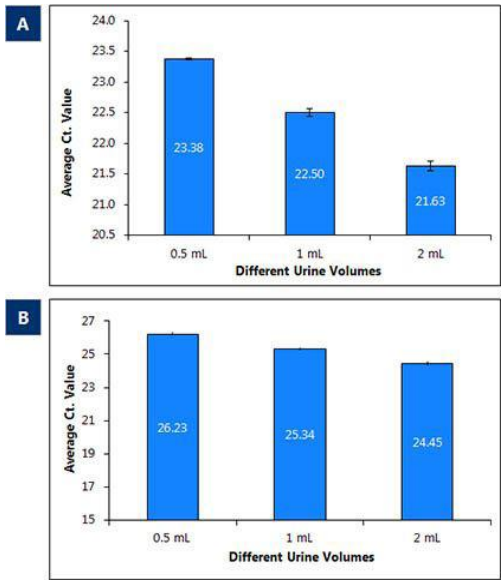

Figure 1. Purification of cell-free circulating RNA and exosomal RNA from different urine volumes. Norgen's Urine Cell-Free Circulating and Viral Nucleic Acid Purification Mini Kit (Cat. 59900) was used to purify cell-free circulating and exosomal RNA from 500 µL, 1 mL and 2 mL urine. Two microlitres of the purified RNA was then used as the template in RT-qPCR reactions to assess the amplification of the purified(A) 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 And Viral Nucleic Acid Purification Kits	
50 preps (Mini)	Cat. 59900
20 Preps (Midi)	Cat. 60000
10 Preps (Maxi)	Cat. 60100

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

STOOL NUCLEIC ACID ISOLATION KIT
(CAT. 45600)

- Simultaneous isolation of both host and microbial DNA and RNA
- Eliminates PCR inhibitors including humic acids
- High quality total RNA and DNA for sensitive downstream applications
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

A **CONVENIENT** AND **RAPID METHOD** TO **ISOLATE TOTAL DNA** AND **RNA** FROM FRESH, FROZEN AND PRESERVED STOOL SAMPLES

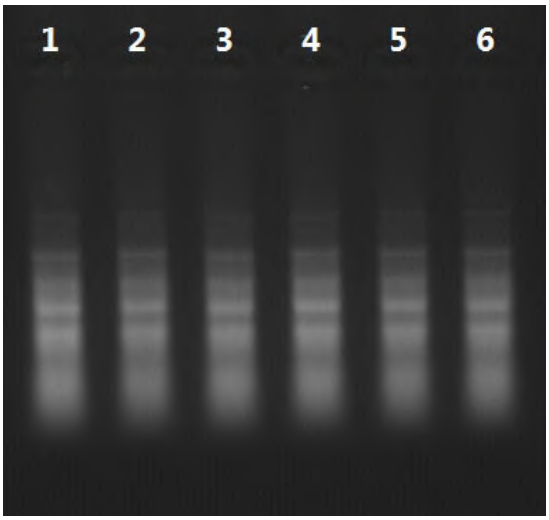

Figure 1. Total RNA Profile from Different Stool Samples. Total RNA and DNA were isolated from 6 different 200 mg human stool samples using Norgen's Stool Nucleic Acid Isolation Kit. For analysis, 7.5 µL from each 75 µL elution were loaded on 1.2 % MOPS agarose gel. All six samples showed a good RNA integrity and total RNA profile that includes large and small RNA.

Ordering Information

Stool Nucleic Acid Isolation Kit	
50 preps	Cat. 45600

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

FFPE RNA/DNA PURIFICATION PLUS KIT
(CAT. 54300, Dx54300)

- CE-IVDR marked in accordance with the European Commission Regulation (EU) No. 2017/746 (Dx54300)
- Fast and easy processing using rapid spin-column format
- High yields and quality of nucleic acids
- Separate fractionation of RNA and DNA
- Isolate total RNA, from large rRNA down to microRNA (miRNA)
- No phenol or chloroform extractions
- 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

SEQUENTIAL ISOLATION AND PURIFICATION OF **TOTAL RNA** AND **GENOMIC DNA** FROM **FFPE TISSUE SAMPLES**

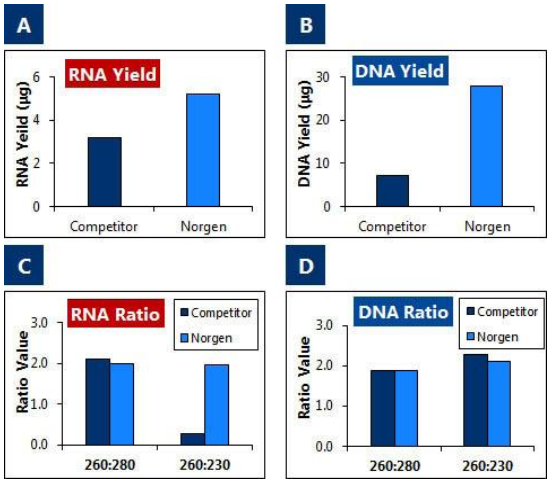

Figure 1. Superior Recovery of High Quality RNA and DNA from FFPE Spleen Tissues. Norgen's FFPE RNA/DNA Purification Plus Kit isolates FFPE RNA and DNA that exceeds the yield of competitors. Total RNA and DNA was isolated from equal amounts of hamster FFPE spleen sections (20 micron thickness) using Norgen's FFPE RNA/DNA Purification Plus Kit and a leading competitor's kit. Triplicate isolations were performed for each product. The top graphs demonstrate the mean yield of RNA (Panel A) and DNA (Panel B) according to NanoDrop measurement. The bottom graphs showed the mean 260:280 ratio and 260:230 ratio of RNA (Panel C) and DNA (Panel D) according to NanoDrop measurement. Norgen's kit consistently purified total RNA and DNA with a higher yield and higher quality than for those obtained using the market competitor's kits.

Ordering Information

FFPE RNA/DNA Purification Plus Kit	
50 preps	Cat. 54300
50 Preps	Cat. Dx54300

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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.**

CYTOPLASMIC AND NUCLEAR RNA PURIFICATION KITS (CAT. 21000, 37400)

- Excellent separation and purification of cytoplasmic and nuclear RNA
- Convenient and fast spin column format
- High quality and yield of RNA
- Isolate full diversity of RNA (including microRNA) without phenol
- Purified RNA is ready for any application including RT-PCR, qRT-PCR, RNA-Seq, arrays and more
- Cytoplasmic RNA is free of DNA and ready for direct use in RT-PCR/qRT-PCR
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR THE CONVENIENT PURIFICATION OF **CYTOPLASMIC** AND **NUCLEAR RNA** FROM **CULTURED CELLS** AND **TISSUES**

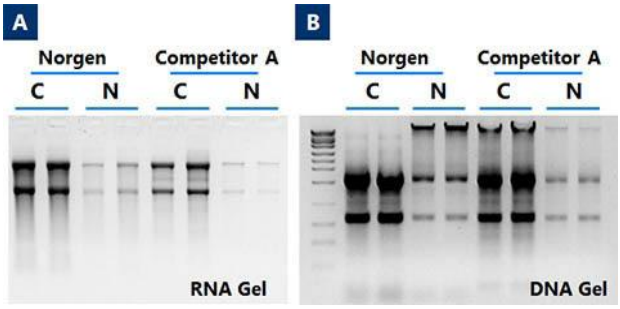

Figure 1. Superior Separation of HeLa Cell Cytoplasmic & Nuclear RNA. Norgen's Cytoplasmic & Nuclear RNA Purification Kit provides better separation of cytoplasmic and nuclear RNA from 0.8 million HeLa cells when compared to a leading competitor's product. Panel A: Cytoplasmic and nuclear RNA purified from HeLa cells using Norgen's kit and a competitor's kit. Ten microliters of each 50 µL elution (Norgen or competitor's kit) of the cytoplasmic (C) or nuclear (N) RNA were run on a 1.5% formaldehyde-agarose gel. Higher yields of RNA with good integrity were isolated using Norgen's kit. Panel B: Ten microliters of the cytoplasmic and nuclear RNA isolated from HeLa cells using Norgen's kit and the competitor's kit was run on a 0.9% agarose gel. Genomic DNA only co-migrates with the nuclear fraction in RNA isolated using Norgen's Cytoplasmic & Nuclear RNA Purification Kit, not the cytoplasmic fraction. Note that an optional on-column DNase treatment protocol is provided to remove the genomic DNA in the nuclear fraction. In contrast, significant genomic DNA contamination was observed in the cytoplasmic fraction of the RNA isolated using the competitor's kit.

Ordering Information

Cytoplasmic and Nuclear RNA Purification Kits	
50 preps	Cat. 21000
100 Preps	Cat. 37400

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

PLANT RNA/DNA PURIFICATION KIT
(CAT. 24400)

- Robust Lysis Solution processes even the most challenging plant species such as pine needle and grape
- No phenol extractions
- DNA and all sizes of RNA are recovered, including microRNA
- High quality DNA and RNA are purified simultaneously using the same spin column
- No need to split the lysate
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR **SIMULTANEOUS ISOLATION** OF **TOTAL RNA** AND **DNA** FROM THE SAME PLANT SAMPLE

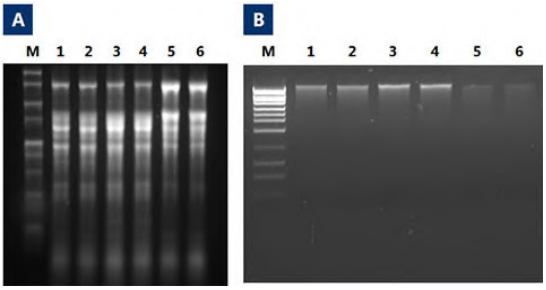

Figure 1. Isolation of Total RNA and Genomic DNA from Tobacco, Tomato and Peach Leaf Tissue. Total RNA and genomic DNA were isolated from 50 mg of tobacco leaf, 50 mg of tomato leaf and 50 mg of peach leaf using Norgen's Plant RNA/DNA Purification Kit. Panel A is a 1X MOPS 1.5% agarose gel showing the total RNA that was isolated after the optional on-column DNase digestion. 5 µL of total RNA from each 75 µL elution was mixed with 2x RNA loading dye and denatured at 70°C for 10 minutes and loaded onto the gel. Lane M is Norgen's 1 kb RNA Ladder, Lanes 1 and 2 contain RNA isolated from tobacco cells, Lanes 3 and 4 contain RNA isolated from tomato cells, and Lanes 5 and 6 contain RNA isolated from peach cells. Panel B is a 1.5% agarose gel containing the genomic DNA that was isolated after the optional on-column RNase digestion, and in each case 10 µL of the 75 µL elution was loaded. Lane M is Norgen's HighRanger 1kb DNA Ladder, Lanes 1 and 2 contain the tobacco DNA, Lanes 3 and 4 contain the tomato DNA, and Lanes 5 and 6 contain the peach DNA. The RNA and DNA are intact and of the highest quality, and can be used in a number of different downstream applications.

Ordering Information

Plant RNA/DNA Purification Kit	
50 preps	Cat. 24400

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

WATER RNA/DNA PURIFICATION KITS (0.45 µM AND 0.22 µM) (CAT. 26400, 26450, 26480)

- The kits Cat. 26450, 26400 include filters. For the isolation kit that does not include filters, see Cat. 26480.
- Isolate total DNA and RNA from all microorganisms found in water, including bacteria, fungi and algae
- RNA and DNA are both column purified simultaneously using the same column
- Elution contains concentrated DNA and RNA without the need for further precipitation
- Complete RNA (including microRNA) without phenol
- Isolated RNA and DNA are of high quality and integrity for all downstream applications
- Available in 0.45 µm and 0.22 µm filter formats
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

FOR CONVENIENT PURIFICATION OF **RNA** AND **DNA** FROM MICROORGANISMS IN WATER SAMPLES

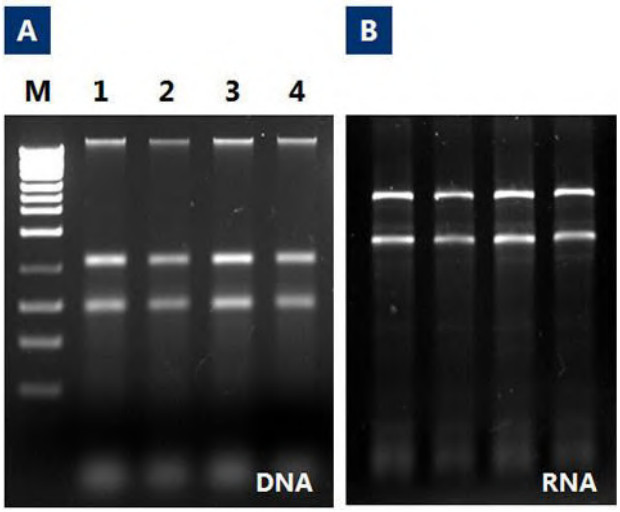

Figure 1. High Yield and Purity of RNA and DNA. Total RNA and DNA were simultaneously isolated from 50 mL of water sample containing 107 cfu/mL E.coli using Norgen's Water RNA/DNA Purification Kit and subsequently run on gels for visual analysis. Panel A shows 10 µL aliquots (no RNase treatment) of the 50 µL elutions run on a 1% TAE agarose gel. Genomic DNA and 16S and 23S rRNA bands were visable. Panel B shows 5 µL aliquots (on-column DNase was applied) of the elution run on a 1.5% formaldehyde agarose gel. 16S and 23S rRNA was seen without DNA contamination. From observing the gels it can be seen that the kit allows for the isolation and purification of high yields of concentrated and high quality RNA and DNA.

Ordering Information

Water RNA/DNA Purification Kits	
25 Preps (0.45 µm)	Cat. 26450
25 Preps (0.22 µm)	Cat. 26400

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

Water RNA/DNA Purification Kits	
50 preps	Cat. 26480

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

SELECT PUBLICATIONS AND APPLICATION NOTES

RNA/DNA/Protein Purification Plus Kit (Cat. 47700)

El-Mogy, M. A., Abdalla, M. A. ., Misic, V., & Haj-Ahmad, Y. (2017). **Effect of adenovirus infection on transgene expression under the adenoviral MLP/TPL and the CMVie promoter/enhancer in CHO cells.** *Journal of Genetic Engineering and Biotechnology, 15(1)*, 211–217.

https://doi.org/10.1016/j.jgeb.2017.04.003

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RNA/DNA Purification Kit (Cat. 48700)

Lobo, J., Constancio, V., Leite-Silva, P., Guimaraes, R., Cantante, M., Braga, I., ... Jeronimo, C. (2021). **Differential methylation EPIC analysis discloses cisplatin-resistance related hypermethylation and tumor-specific heterogeneity within matched primary and metastatic testicular germ cell tumor patient tissue samples.** *Clinical Epigenetics, 13(1),* 70–70.

https://doi.org/10.1186/s13148-021-01048-y

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Plasma/Serum Total cfc-Nucleic Acid Advanced Purification Kit (Cat. 50300)

Gat, I., Maghen, L., Filice, M., Wyse, B., Zohni, K., Jarvi, K., ... Librach, C. (2017). **Optimal culture conditions are critical for efficient expansion of human testicular somatic and germ cells in vitro.** *Fertility and Sterility, 107(3),* 595–605.e7.

https://doi.org/10.1016/j.fertnstert.2016.12.028

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FFPE RNA/DNA Purification Plus Kit (Cat. 54300, Dx54300)

Włodarski, P. K., Klicka, K., Grzywa, T. M., Klinke, A., Mielniczuk, A., Wejman, J., Ostrowska, J., & Gondek, A. (2022). **Decreased expression of Mir-23b is associated with poor survival of endometrial cancer patients.** *Research Square.*

https://doi.org/10.21203/rs.3.rs-1422217/v1

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Cytoplasmic and Nuclear RNA Purification Kits (Cat. 21000, 37400)

Codrich, M., Bertuzzi, M., Russo, R., Francescatto, M., Espinoza, S., Zentilin, L., ... Gustincich, S. (2017). **Neuronal hemoglobin affects dopaminergic cells' response to stress.** *Cell Death & Disease, 8(1),* e2538–e2538.

https://doi.org/10.1038/cddis.2016.458

SCAN ME WITH YOUR SMART PHONE

Water RNA/DNA Purification Kit (0.45 µm and 0.22 µm) (Cat. 26480, 26450, 26400)

de Oliveira, L. F. V., & Margis, R. (2015). **The source of the river as a nursery for microbial diversity.** *PloS One, 10(3),* e0120608–e0120608.

https://doi.org/10.1371/journal.pone.0120608

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AAV PURIFICATION KIT
(CAT. 66100)

- AAV Purification from cell fraction or media fraction
- Rapid purification within 2 to 4.5 hours
- High AAV recovery, up to 90%
- No specialized equipment needed
- Purification from a variety of AAV serotypes (including AAV6 and AAV9)
- Purify AAV cell culture supernatant from 1 mL to 33.5 mL input per prep
- Yields highly active AAV for *in vivo* and *in vitro* experiments
- Up to 33X sample concentration
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

A **FAST** AND **SIMPLE** PROCEDURE FOR **CONCENTRATING** AND **PURIFYING AAV VECTORS** FROM CELL LYSATE AND CELL CULTURE MEDIA.

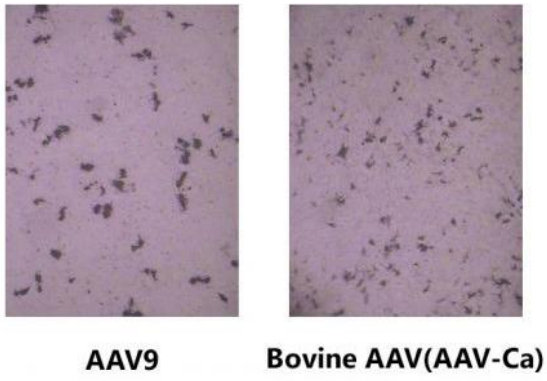

Figure 1. *In vitro* transduction. HTX cells transduced with 50 µL eluted vector from the Norgen AAV Purification Kit after purification of cell culture supernatant containing AAV. Both AAV9 and a bovine AAV capsid (isolate AAV-Ca) were tested in vitro on HTX cells. The vector encoded an alkaline phosphatase reporter gene driven by the CAG promoter. Dark/purple staining represents cells that have been transduced by AAV bearing the alkaline phosphatase reporter gene.

Ordering Information

AAV Purification Kit	
15 Preps	Cat. 66100

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

AAV PURIFICATION MINI KIT
(CAT. 63200)

- AAV Purification from cell fraction, media fraction, or mixed cells and media
- Rapid purification within 1 to 2 hours
- High AAV recovery, up to 90%
- No specialized equipment needed
- Purification from a variety of AAV serotypes
- Purify AAV from 0.5 mL to 8 mL input
- Yields highly active AAV for *in vitro* experiments
- Up to 50x sample concentration
- Multiple purifications (20 per kit) can be done in parallel for rapid screening experiments
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

A **FAST** AND **SIMPLE** PROCEDURE FOR **CONCENTRATING** AND **PURIFYING AAV VECTORS** FROM CELL LYSATE AND CELL CULTURE MEDIA.

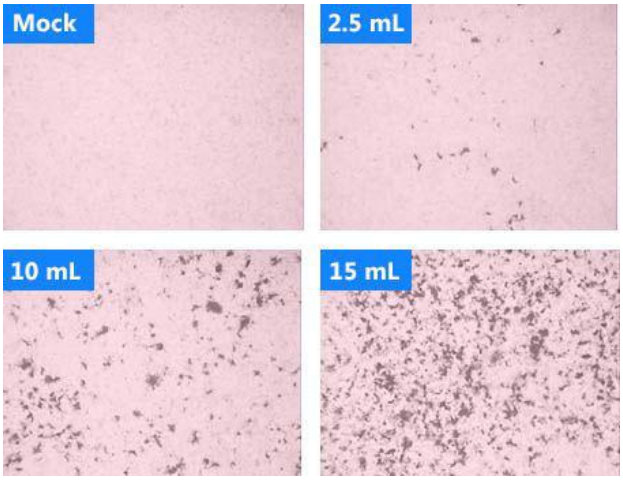

Figure 1. Transduction of HTX cells with Norgen's AAV Purification Mini Kit with different input volumes of mixed cells and supernatant (0.5 mL. 2.5 mL, 10 mL and 15 mL). Microscopic view of HTX cells transduced with biologically active AAV vector after purification using Norgen's AAV Purification Mini Kit (dark purple represents alkaline phosphatase transgene expression).

Ordering Information

AAV Purification Mini Kit	
20 Preps	Cat. 63200

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

AAV PURIFICATION MIDI KIT
(CAT. 63300)

- AAV Purification from cell fraction, media fraction, or mixed cells and media
- Rapid purification within 2 to 2.5 hours
- High AAV recovery, up to 90%
- No specialized equipment needed
- Purification from a variety of AAV serotypes
- Purify AAV from 8 mL to 45 mL input
- Yields highly active AAV for *in vitro* experiments
- Up to 50X sample concentration
- Multiple purifications (8 per kit) can be done in parallel. More parallel purifications can be done with additional kits
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

A **FAST** AND **SIMPLE** PROCEDURE FOR **CONCENTRATING** AND **PURIFYING AAV VECTORS** FROM CELL LYSATE AND CELL CULTURE MEDIA.

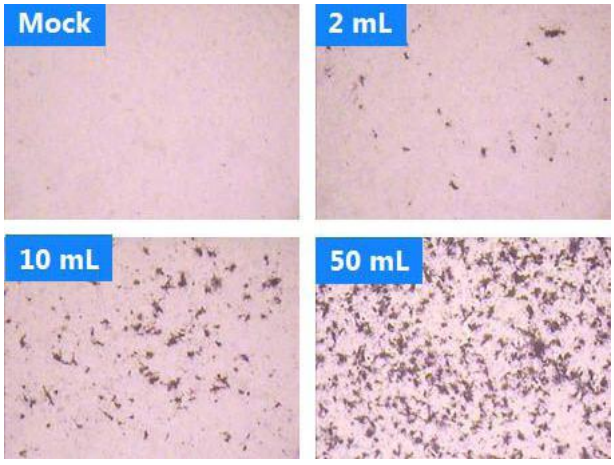

Figure 1. Transduction of HTX cells with Norgen's AAV Purification Midi Kit with different input volumes (2 mL, 10 mL and 50 mL) of mixed cells and supernatant. Microscopic view of HTX cells transduced with biologically active AAV vector after purification using Norgen's AAV Purification Midi Kit (dark purple represents alkaline phosphatase transgene expression).

Ordering Information

AAV Purification Midi Kit	
4-8 Preps	Cat. 63300

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AAV PURIFICATION MAXI SLURRY KIT
(CAT. 63250)

- AAV Purification from cell fraction, media fraction, or mixed cells and media
- Rapid purification within 2.5 to 3.5 hours, with optional concentration step
- 1-10 mL final elution volume
- High AAV recovery, up to 90%
- No specialized equipment needed
- Purification from a variety of AAV serotypes
- Purify AAV from 90 mL to 900 mL of input per run
- Yields highly active AAV for *in vitro* experiments
- Up to 200-fold sample concentration
- Multiple purifications (10 per kit, 90 mL each) can be done in parallel, or 1 single large purification of 900 mL of input
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

A **FAST** AND **SIMPLE** PROCEDURE FOR **CONCENTRATING** AND **PURIFYING AAV VECTORS** FROM CELL LYSATE AND CELL CULTURE MEDIA.

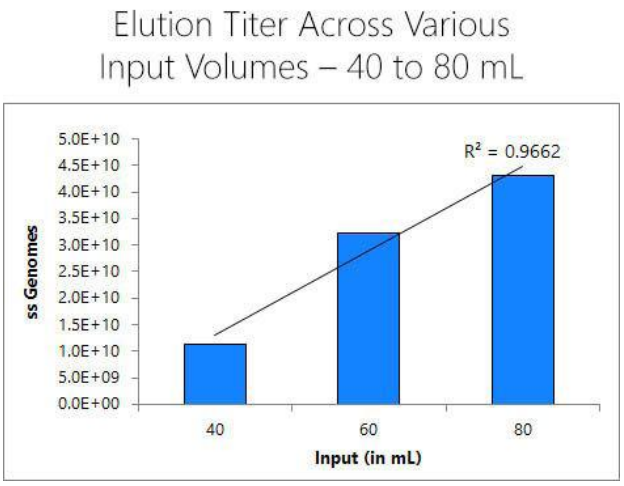

Figure 1. Supernatant from cells transfected with AAV production plasmids was purified using the Norgen AAV Purification Maxi Slurry Kit. Three different volumes were tested: 40, 60 and 80 mL, demonstrating scalable purification of AAV vector over increasing volumes.

Ordering Information

AAV Purification Maxi Slurry Kit	
1-10 Preps	Cat. 63250

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ADENOVIRUS PURIFICATION KIT
(CAT. 67600)

- Adenovirus Purification from cell fraction or media fraction
- Rapid purification within 2 to 4.5 hours
- No specialized equipment needed (ultracentrifuge not required)
- Purify adenovirus cell culture supernatant from 1 mL to 33.5 mL input per prep
- Purify adenovirus cell pellet from 1 mL of input per prep
- Up to 25X sample concentration
- Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix

SIMPLE AND RAPID ADENOVIRUS PURIFICATION

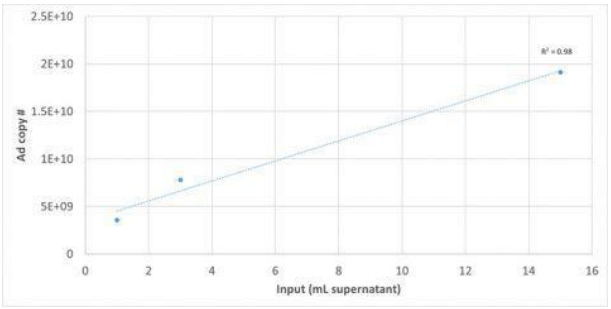

Figure 1. Total adenoviral vector eluted for 1, 3, or 15 mL of supernatant containing adenovirus. An increase in titer is observed as the volume of adenovirus containing supernatant increases, demonstrating effective purification at different volumes.

Ordering Information

Adenovirus Purification Kit	
15 Preps	Cat. 67600

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SMALL RNA LIBRARY PREP KIT FOR ILLUMINA
(CAT. 63600, 63620)

- Optimized for ultra-low input RNA, especially from bodily fluids such as plasma or serum from as little as 1 ng of RNA
- Simple and quick workflow: libraries can be prepared in less than 5 hours
- No gel purification for selected types of samples
- Protocol optimized for RNA isolated from different types of input, including liquid biopsies (blood, plasma, serum, urine & exosomes)
- Complements Norgen's Best-in-Class Total RNA (including microRNA) Purification Technology

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

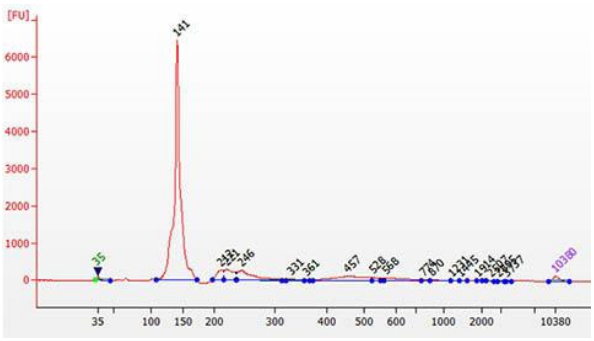

Figure 1. An example of a purified small RNA library on an Agilent 2100 Bioanalyzer using a High Sensitivity DNA Chip. The library was prepared using a mixture of synthetic microRNAs as an input. A single peak of ~ 141 bp was obtained and could be used directly for analysis on an Illumina next-generation sequencing platform.

Ordering Information

Small RNA Library Prep Kit for Illumina	
24 Preps	Cat. 63600 (Indexes 1-24)
24 Preps	Cat. 63620 (Indexes 25-48)

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NGS LIBRARY QUANTIFICATION KIT (FOR SMALL RNA-SEQ) (CAT. 61600)

- Able to quantify NGS Libraries (Illumina) of a wide spectrum of concentrations, including sub-nanomolar concentrations
- DNA is accurately quantified by using a standard curve
- Specially designed DNA standards for Small RNA-Seq library; also compatible to NGS library of other molecular weights

A **PCR-BASED DETECTION** PROCEDURE TO **QUANTIFY NGS LIBRARIES** OF A **WIDE SPECTRUM OF CONCENTRATIONS**

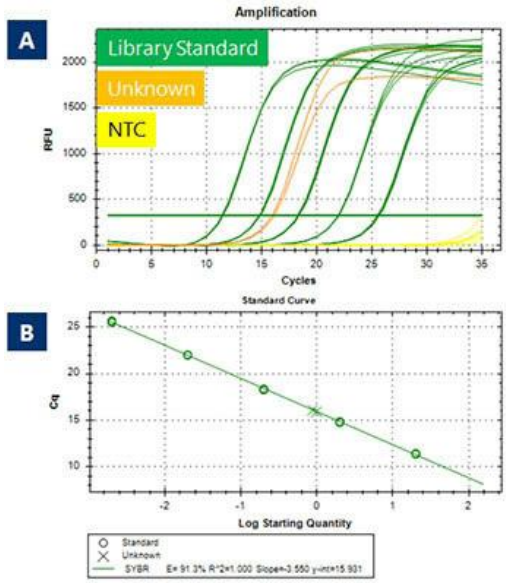

Figure 1. A representative qPCR baseline graph showing the successful amplification of Quantified NGS Library Standards (Green) with a range from 20 pM to 2 fM, using Norgens NGS Library Quantification Kit (for Small RNA-Seq) (Panel A). Duplicate amplification of a sample Small RNA-Seq library (at 1:10,000 dilution) was performed (Orange). The derived library concentration was 9.41 nM. Norgen's NGS Library Quantification Kit (for Small RNA-Seq) is of good quality as shown with the high PCR efficiency and correlation in the standard curve (Panel B) with low background signals (No Template Control NTC as Yellow in Panel A).

Ordering Information

NGS Library Quantification Kit	
100 Rxns	Cat. 61600

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16S LIBRARY PREPARATION KITS FOR ILLUMINA
(CAT. 70100, 70110, 70120...) *See page 165 complete catalog

- Protocol optimized for DNA isolated from a diversity of samples including stool, soil, water, saliva, plant, urine, skin, and more
- Simple and quick workflow: library could be prepared in less than 5 hours
- Component of Norgen's metagenomics workflow
- A single NGS run can be prepared with up to 384 unique dual-index libraries

FOR **LIBRARY PREPARATION** OF THE **9 VARIABLE REGIONS** OF THE **16S RNA GENE**

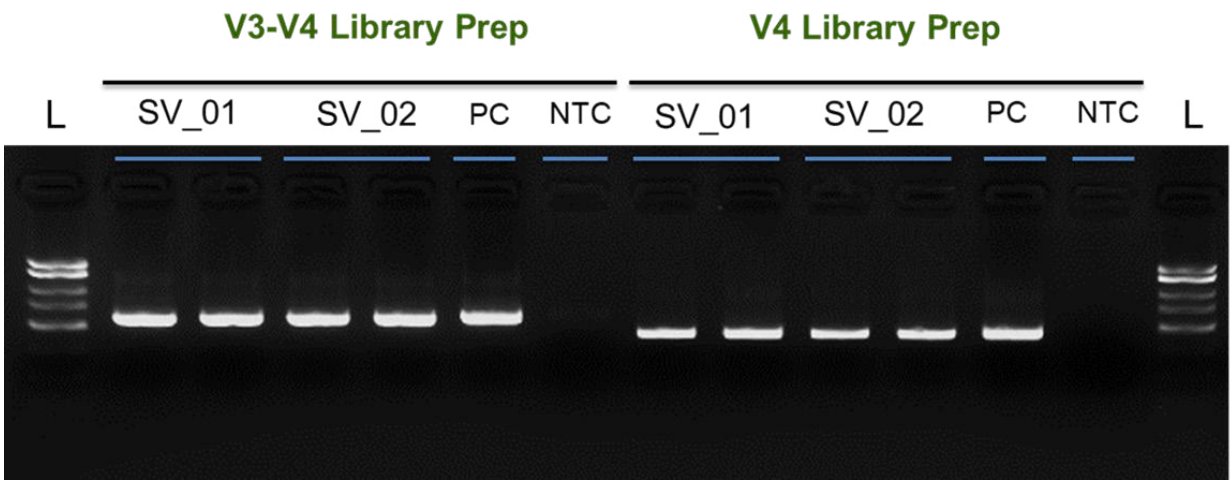

Figure 1. 16S rRNA V3-V4 PCR1 Amplification (left), and 16S rRNA V4 PCR1 Amplification (right)

***Ordering Information**

16S V1-V2 Library Preparation Kit for Illumina	
24 Preps	Cat. 70100
96 Preps (Set A)	Cat. 70110
96 Preps (Set B)	Cat. 70120
96 Preps (Set C)	Cat. 70130
96 Preps (Set D)	Cat. 70140
16S V1-V3 Library Preparation Kit for Illumina	
24 Preps	Cat. 70200
96 Preps (Set A)	Cat. 70210
96 Preps (Set B)	Cat. 70220
96 Preps (Set C)	Cat. 70230
96 Preps (Set D)	Cat. 70240
16S V2-V3 Library Preparation Kit for Illumina	
24 Preps	Cat. 70300
96 Preps (Set A)	Cat. 70310
96 Preps (Set B)	Cat. 70320
96 Preps (Set C)	Cat. 70330
96 Preps (Set D)	Cat. 70340
16S V3-V4 Library Preparation Kit for Illumina	
24 Preps	Cat. 70400
96 Preps (Set A)	Cat. 70410
96 Preps (Set B)	Cat. 70420
96 Preps (Set C)	Cat. 70430
96 Preps (Set D)	Cat. 70440
16S V3-V5 Library Preparation Kit for Illumina	
24 Preps	Cat. 70500
96 Preps (Set A)	Cat. 70510
96 Preps (Set B)	Cat. 70520
96 Preps (Set C)	Cat. 70530
96 Preps (Set D)	Cat. 70540

16S V4 Library Preparation Kit for Illumina	
24 Preps	Cat. 70600
96 Preps (Set A)	Cat. 70610
96 Preps (Set B)	Cat. 70620
96 Preps (Set C)	Cat. 70630
96 Preps (Set D)	Cat. 70640
16S V4-V5 Library Preparation Kit for Illumina	
24 Preps	Cat. 70700
96 Preps (Set A)	Cat. 70710
96 Preps (Set B)	Cat. 70720
96 Preps (Set C)	Cat. 70730
96 Preps (Set D)	Cat. 70740
16S V5-V7 Library Preparation Kit for Illumina	
24 Preps	Cat. 70800
96 Preps (Set A)	Cat. 70810
96 Preps (Set B)	Cat. 70820
96 Preps (Set C)	Cat. 70830
96 Preps (Set D)	Cat. 70840
16S V7-V9 Library Preparation Kit for Illumina	
24 Preps	Cat. 70900
96 Preps (Set A)	Cat. 70910
96 Preps (Set B)	Cat. 70920
96 Preps (Set C)	Cat. 70930
96 Preps (Set D)	Cat. 70940

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NGS NORMALIZATION 96-WELL KIT
(CAT. 61900)

- Removes primer dimers
- Simultaneously clean-up and normalize PCR products
- Fast (less than 20 minutes), high-throughput and easy processing using centrifugation
- Sufficient elution volume (100 µL) for repeat or future assays
- Non-magnetic bead purification

A **PCR-BASED DETECTION** PROCEDURE TO **QUANTIFY NGS LIBRARIES** OF A **WIDE SPECTRUM OF CONCENTRATIONS.**

Input		SequalPrep			Norgen		
Avg	Std Dev	Avg	Std Dev	Error %	Avg	Std Dev	Error %
27	0.4	1.87	0.66	35.41	4.38	0.68	15.41

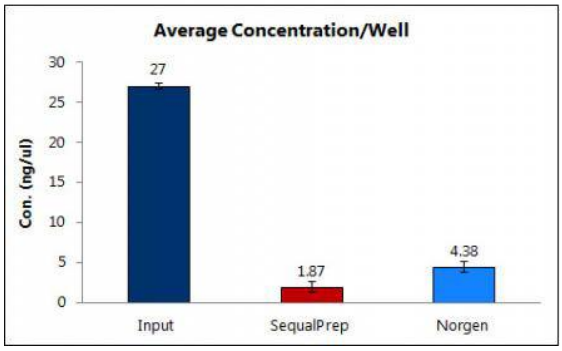

Figure 1. The efficiency of the DNA normalization in comparison with SequalPrep (Invitrogen). Norgen's NGS Normalization 96-Well Kit showed a lower error percentage compared to Invitrogen's SequalPrep Kit, indicating the uniformed normalization performance of Norgen's kit.

Ordering Information

NGS Normalization 96-Well Kit	
2 x 96-Well Plates	Cat. 61900

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