



# MagGenome<sup>®</sup>

Innovate with Magnetism



[www.maggenome.com](http://www.maggenome.com)

# Contents

## RNA Extraction kits Pg. No

XpressRNA Viral Kit	01
XpressRNA Plant Kit	02
XpressRNA Cell Kit	03

## Total Nucleic Acid Extraction kit Pg. No

Maggenome Total Nucleic Acid Kit	07
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## DNA Extraction kits Pg. No

XpressDNA Blood Kit	08
XpressDNA Tissue Kit	09
XpressDNA Saliva Kit	09
XpressDNA Bacteria Kit	10
XpressDNA Plasmid Kit	11
XpressDNA Soil Kit	12
XpressDNA Plant Kit	13
XpressDNA Stool Kit	14
XpressDNA Milk Kit	15
XpressDNA Water Kit	15
XpressDNA Fungal Kit	16
XpressDNA Algae Kit	16
XpressDNA Pathogen Blood Kit	17
XpressDNA Pathogen Urine Kit	17

## Cleanup & Size Selection Kits Pg. No

XpressPure PCR Cleanup Kit	17
XpressPure Size Select - NGS	19
XpressPure Size Select - HMW	20

## Sample Collection Kits Pg. No

MagStable DNA Saliva Collection Kit	21
Xpress Molecular Transport Medium	21
MagStable DNA Swab Collection Kit	22
MagStable DNA Stool Collection Kit	22
MagGenome Viral Transport Medium	23

## Magnetic Stand Pg. No

Xpress Magnetic Stand	23
-----------------------	----

## DNA Automation Kits Pg. No

XpressAutoMag Blood DNA Kit	24
XpressAutoMag Saliva DNA Kit	25
XpressAutoMag Tissue DNA Kit	25

## XpressAutomag Nucleic Acid Extraction Instrument Pg. No

XpressAutomag Nucleic Acid Extraction Instrument	26
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## Enzymes Pg. No

RNaseA solution	27
Proteinase K	27
Lysozyme	28
Carrier RNA	28

## Lab Essentials Pg. No

Nuclease Free Water	29
MagGreen DNA loading buffer	29
Xpress-TE Buffer	30

## Nanoparticles Pg. No

XpressNano Iron Oxide Nanoparticles	30
XpressNano Large Iron Oxide Nanoparticles	31
XpressNano Gold Nanoparticles	31
XpressNano Silver Nanoparticles	32

## Agarose Bead Pg. No

XpressMag MNP - Agarose Beads	33
XpressMag Agarose Beads	33

## Protein Purification Beads Pg. No

XpressAffinity Protein A Beads	34
XpressAffinity Protein G Beads	34
XpressAffinity Protein A & G Beads	35
XpressAffinity Glutathione Beads	35

## Introduction

**MagGenome** started operations from the facility at Perungudi, Chennai in 2018. As a startup, MagGenome is primarily focused on the development of magnetic nanoparticles based products. The company has developed DNA/RNA extraction kits under the brand name "XpressDNA/RNA", clean up and size selection as "XpressPure", collection and storage devices as "MagStable". The XpressDNA/RNA protocol is designed to extract high molecular weight DNA/RNA which is free of protein and PCR inhibitors using our patented magnetic nanoparticle technology. The kit also requires the use of a magnetic separator "MagNaStand" which is made of rare earth magnets that provide effective magnetic strength to process different volumes used in the kit protocol. MagGenome will also focus on other applications of magnetic nanoparticles in near future for providing solutions in the areas of molecular diagnostics, therapeutics and research applications.

## RNA Extraction Kit

### Xpress RNA Viral Kit

MagGenome's XpressRNA Viral Kit designed for rapid and reliable isolation of total viral nucleic acids from oral and nasopharyngeal swabs stored in viral transport media or other buffers. This kit is highly efficient in viral nucleic acid isolation and the extracted RNA is suitable for direct use in most downstream applications such as one - step RT-qPCR, RT-PCR, PCR and nucleic acid amplification. The kit can be adaptable to majority of the liquid handling workstations in the market.

**"Currently the kit is used extensively for SARS Covid19 virus detection"**

### HIGHLIGHTS

- 100% Sensitivity and Specificity
- Time and Cost effective
- More than 90% recovery
- Amenable for automation
- Ready to use Pre-filled plates
- Customization can be done as per requirements

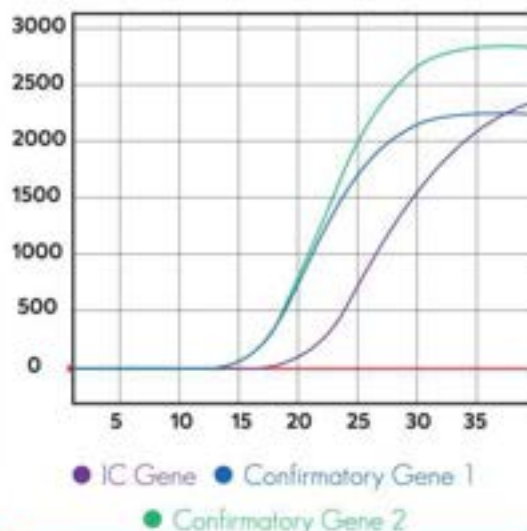
### STORAGE

**Carrier RNA :** To be stored at -20°C on arrival

**MagNa Mix :** To be stored at 4°C. on arrival.

All other components stored at 15-25°C.

RT PCR Result of Human Viral RNA extracted by XpressRNA Viral

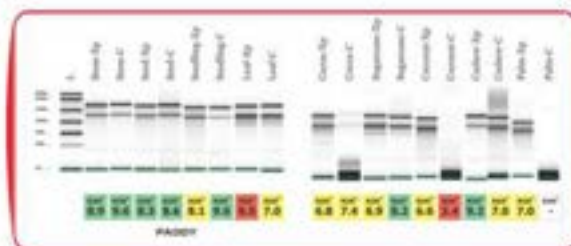




XpressRNA Plant kit uses the patented magnetic nanoparticles based technology for the extraction of total RNA from heterogeneous plant sources like leaf, stem, germinated seed, flower, fruit and root. XpressRNA Plant kit focuses on the selective binding of RNA, over the contaminants like genomic DNA, polysaccharides, proteins and secondary metabolites like polyphenols.

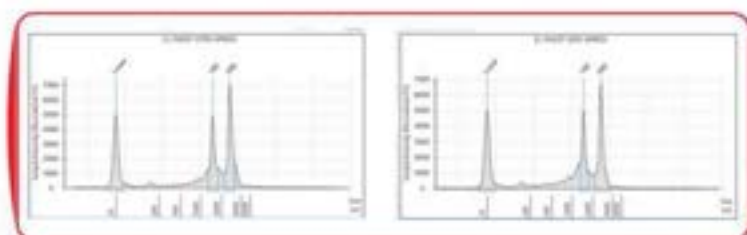
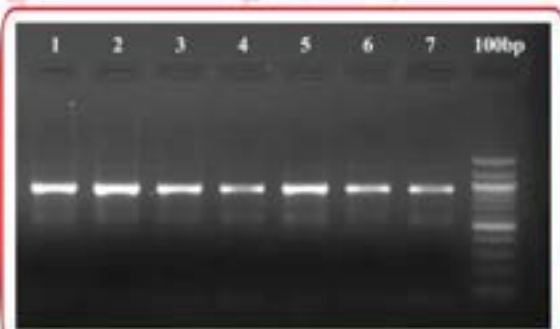
## HIGHLIGHTS

- High quality RNA with 260/280 and 260/230 ratios >1.9
- Total yield 3-110µg RNA per 100mg tissue
- No phase separation
- Eliminates the use of hazardous organic solvents
- No multiple centrifugation steps
- Reagent storage and extraction performed at room temperature
- Compatible with downstream applications like Reverse Transcription PCR, Northern Blotting, Next Generation Sequencing, Microarray



**Agarose Gel profile of RNA extracted using XpressRNA Plant kit:** RNA extracted from heterogeneous plant parts in duplicates-Greengram & Foxtail Millet (Germinated seed); Ixora (flower, bud, stem, leaf); Brinjal & Garlic (leaf)

**RIN (RNA Integrity Number) Analysis Data from Agilent TapeStation 2200:** Comparison of RIN Analysis of XpressRNA Plant Kit against the competitor Plant RNA kit with different plant samples: Xp (XpressRNA) vs C (Competitor kit)



**Agarose Gel profile of cDNA PCR amplification using Maturase K primer for selected samples:** Tomato (1-fruit & 2- leaf), Brinjal (3-leaf) & Wheat (4-leaf), Foxtail Millet (5-germinated seed), Turmeric (6-leaf) & Pepper (7-leaf)

**RIN Analysis Data from Agilent TapeStation 2200:** 18S and 28S ribosomal RNA peaks of selected samples extracted using XpressRNA Plant kit



# Total RNA Extraction Kit

## Xpress RNA Cell Kit

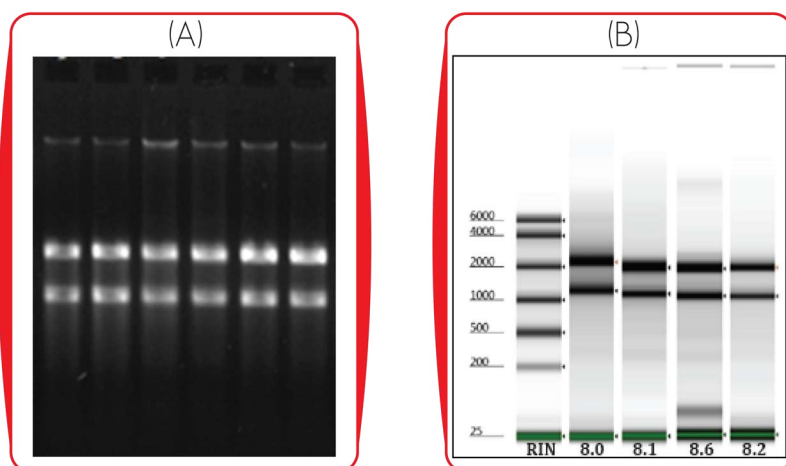
XpressRNA Cell kit provide easy, quick, and efficient method for total RNA extraction from fresh human saliva, bacteria, and cultured cell samples. The XpressRNA provides nanoparticle-based purification of total RNA with high quality indices as evident from the A260/280 ratio >1.8, high RIN scores and minimal genomic DNA contamination. Purified RNA can be used for downstream applications including cDNA synthesis, RT-qPCR, Next-Generation Sequencing and Microarray expression analysis.

- HIGHLIGHTS**
- Quick and efficient method for RNA isolation using Nanoparticles in less than an hour.
  - No phenol/chloroform, no LiCl or ethanol precipitation.
  - High quality and ready-to-use total RNA for any downstream process.

Specifications	Saliva Samples	Bacterial Samples	Cell Line Samples
Sample type	Whole saliva	Bacteria	Cultured cells
Starting material	0.2 ml	1x10 <sup>9</sup> cells	1x10 <sup>6</sup> cells
Elution volume	30-50 µl	50-100 µl	30-50 µl
Time per prep	45 minutes		
Purification target	Total RNA		
Yield*	3-10 µg	5.5-35 µg	0.25-30 µg
Purity	260/280 ≥ 1.8		
RIN	≥8.0		
Storage condition	MagNa mix and Proteinase K at 2-8°C		
Shipping condition	Room Temperature		

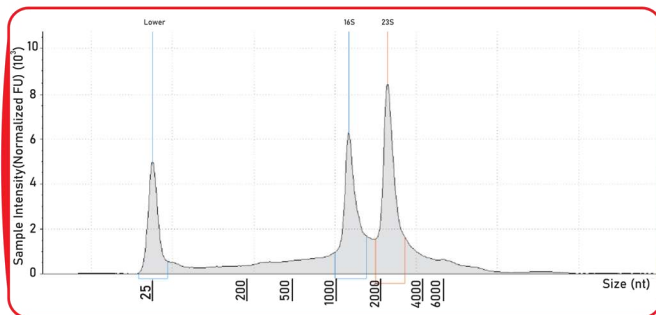
\* Yield varies due to sample heterogeneity

### Saliva Samples

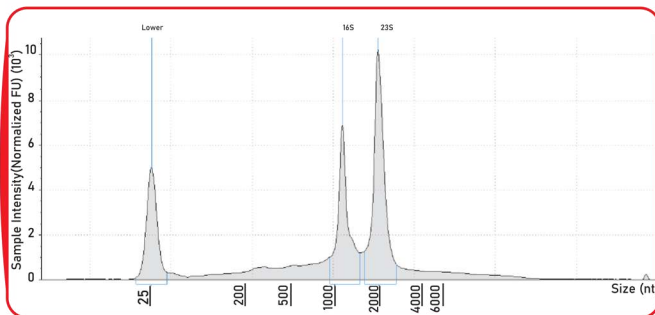


Total RNA from saliva samples of different individuals were purified using the XpressRNA Saliva Kit and run on 1.5% TAE gel (A). Representative aliquots were run on an Agilent® Tape station (B). RIN values confirm the overall integrity of the RNA.

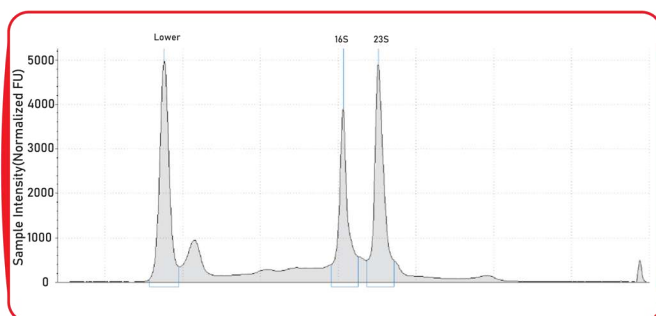
Agilent Tape station profile: RIN 8.0



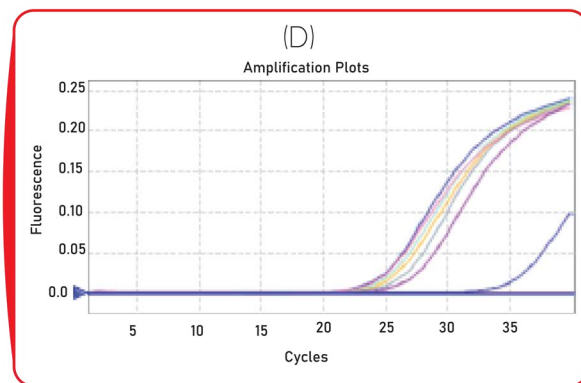
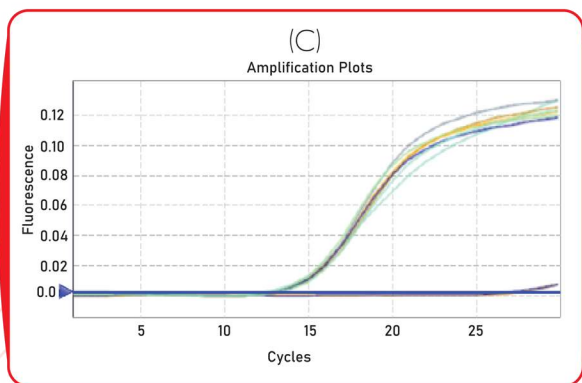
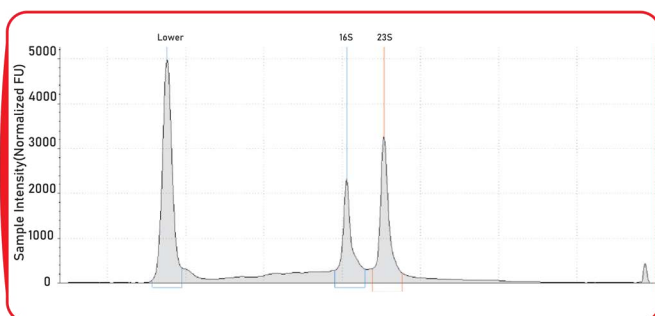
Agilent Tape station profile: RIN 8.1



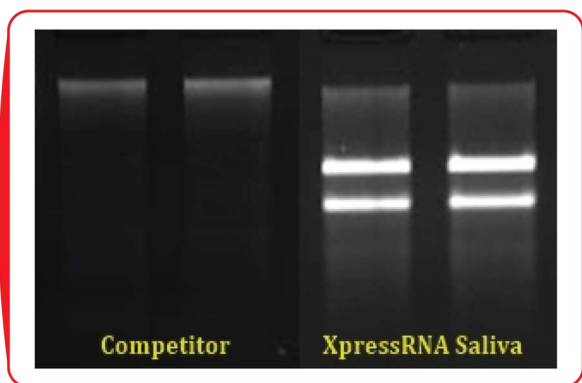
Agilent Tape station profile: RIN 8.6



Agilent Tape station profile: RIN 8.2



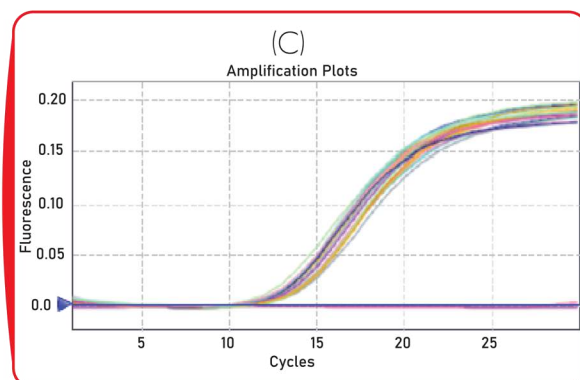
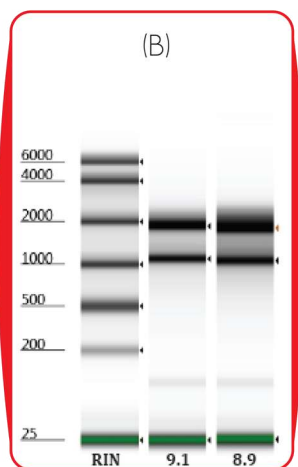
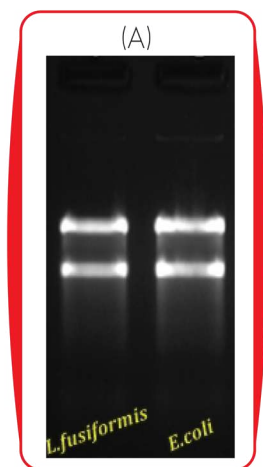
To demonstrate compatibility with downstream applications, samples were subsequently used for RT-qPCR for amplification of (C) human GAPDH gene and (D) bacterial V3 region.



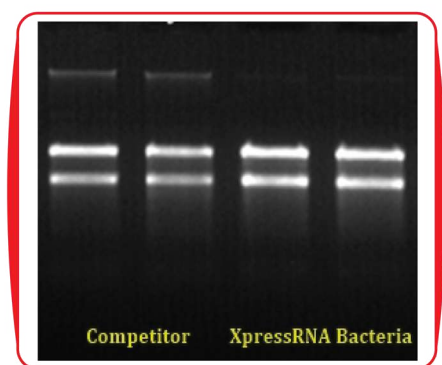
Total RNA from saliva sample of single individual in duplicates were purified using the competitor kit and XpressRNA cell Kit.



## Bacterial Samples

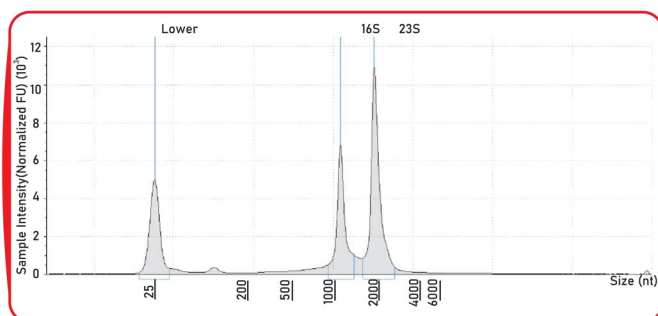


Total RNA from bacterial cultures (*L. Fusiformis* and *E.coli*) was purified using the XpressRNA Bacteria Kit and run on 1.5% TAE gel (A). Aliquots were run on an Agilent® Bioanalyzer® 2100 (B). RIN values confirm the overall integrity of the RNA. To demonstrate compatibility with downstream applications, samples were subsequently used for RT-qPCR for amplification (C). bacterial V3 region.

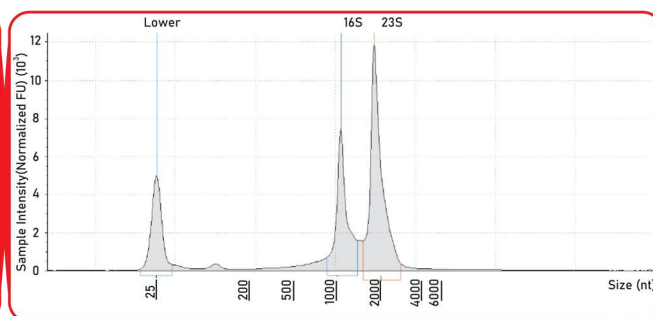


Total RNA from Gram negative (*E.coli*) and Gram positive (*L. Fusiformis*) bacterial cultures was purified using the competitor kit and XpressRNA Bacteria Kit.

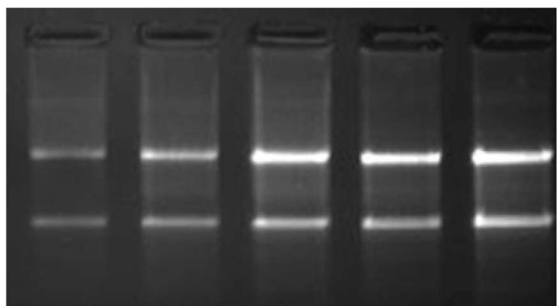
Agilent Tape station profile: RIN 9.1



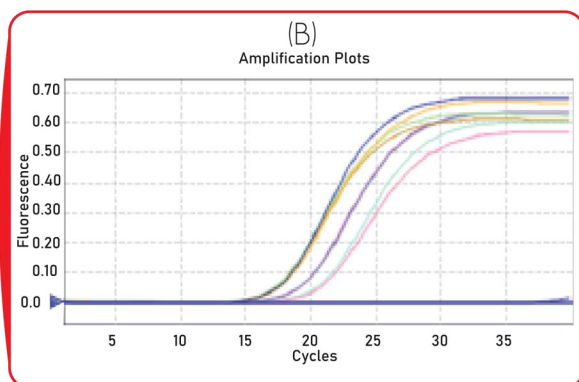
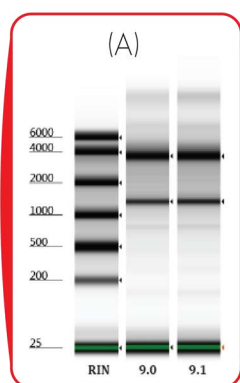
Agilent Tape station profile: RIN 8.9



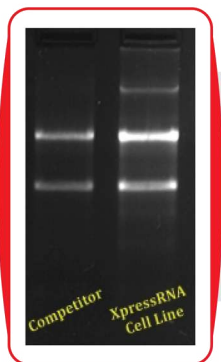
## Cell line Samples



Total RNA was purified from varying amounts of HeLa cells, from  $10^2 \times 10^6$  cells using the XpressRNA Cell Line Kit and representative aliquots were run on 1.5% TAE gel.

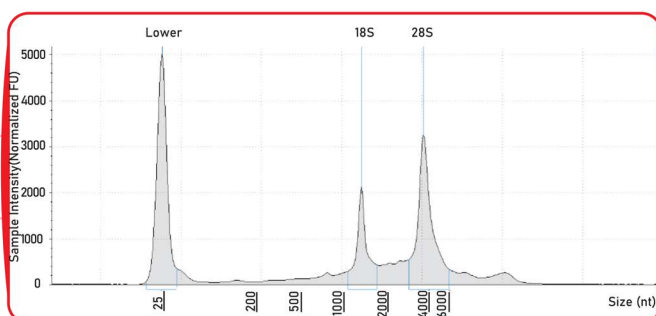


Representative RNA aliquots were run on an Agilent® Tape station (A). RIN values confirm the overall integrity of the RNA. To demonstrate compatibility with downstream applications, samples were subsequently used for RT-qPCR for amplification of (B) human GAPDH region

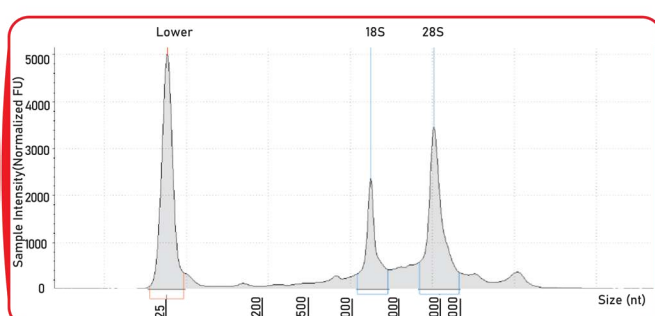


Total RNA from IMR-32 neuroblast cells was purified using the competitor kit and XpressRNA Cell Kit.

Agilent Tape station profile: RIN 9.0



Agilent Tape station profile: RIN 9.1





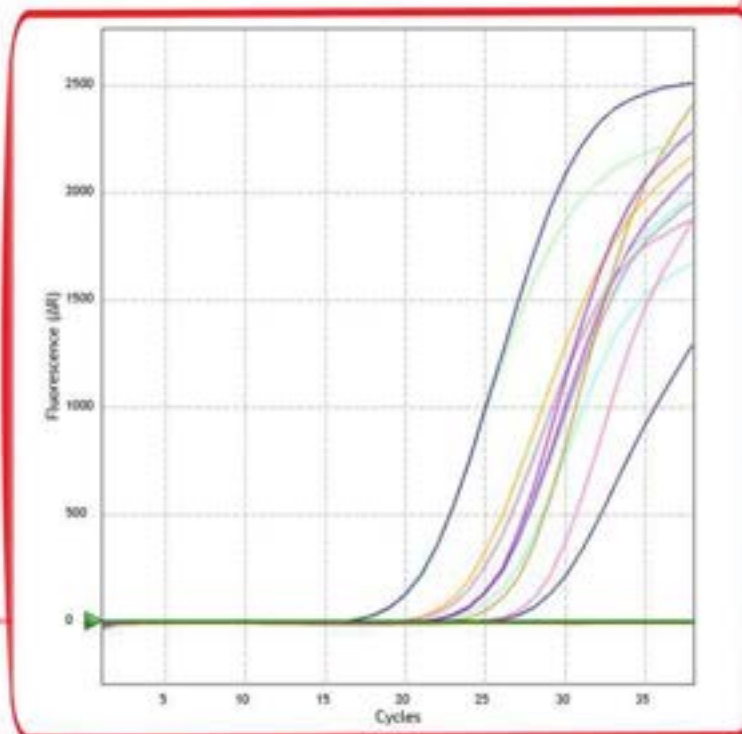
## Total Nucleic Acid Extraction Kit

### MagGenome Total Nucleic Acid Kit

MagGenome Total Nucleic Acid Isolation Kit is designed to be used by professionals trained in nucleic acid techniques to isolate both DNA and RNA from clinical samples using our patented magnetic nanoparticle technology. The Kit is designed for the rapid, high-throughput purification of RNA and DNA from a variety of samples including saliva, sputum, swabs, serum, plasma, whole blood, and liquid samples. The isolated nucleic acids can be used for PCR amplification or other molecular biology applications.

#### HIGHLIGHTS

- 100% Sensitivity and Specificity
- More than 95% effective using our patented magnetic nanoparticle technology
- Easily scalable and compatible for automation
- Suitable for ZYBIO, KingFisher, Himedia & ALTA
- For HCV, HPV, HBV, HIV, H1N1, HLA typing, TB, CMV, CHIKV and DENV



**Fig 1: RT-PCR result of multiple human viral RNA samples extracted using  
MagGenome Total nucleic acid kit**

# DNA Extraction Kit

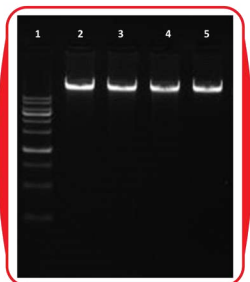
**XpressDNA**

**Blood Kit**

The XpressDNA Blood kit provides a simple and quick system to isolate high quality genomic DNA from blood, whether fresh or aged. The XpressDNA technology provides an easy and flexible magnetic nanoparticles based method that allows the extraction of high quantities of pure DNA as evident from the 260/280 ratio and the agarose gel electrophoresis. The purity ratio of DNA ranges from 1.75 - 1.8 (260/280) and 1.8 - 2.0 (260/230). DNA extracted using XpressDNA Blood kit is amenable for all downstream applications such as PCR, Real time PCR, Restriction digestion, Sanger sequencing and NGS. XpressDNA Blood kit guarantees extraction of high quality genomic DNA in better yields compared to other commercially available kits from a starting blood volume of 0.2 - 0.4ml.

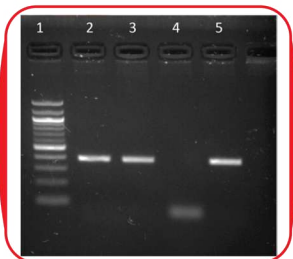
## The kit can be used for extraction of DNA from:

- Fresh, frozen or aged blood
- Blood stored in different storage vials (EDTA, citrate, heparin, fluoride)
- PBMCs
- Umbilical cord blood
- Blood clot



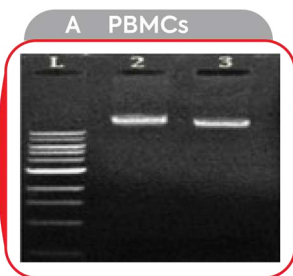
**High yields of pure DNA from blood.**

Genomic DNA was extracted from 400  $\mu$ l of fresh human blood using XpressDNA Blood kit. *Lane 1*: 1kb ladder, *Lanes 2-5*: DNA extracted using XpressDNA Blood kit.

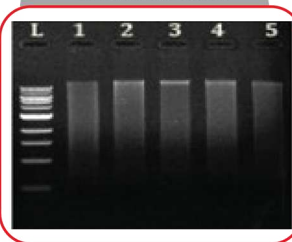


**PCR amplification of Jak2 from genomic DNA extracted using XpressDNA Blood kit.**

*Lane 1*: 100bp ladder, *Lane 2*: Positive control, *Lane 3&5*: PCR product from DNA extracted using XpressDNA Blood kit, *Lane 4*: Negative Template control.



**B Blood Clot**



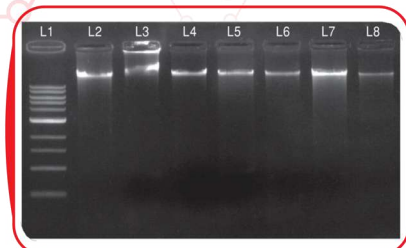
**Genomic DNA extracted from different sample sources using XpressDNA Blood kit.**

**(A)** Peripheral blood mononuclear cells (PBMCs) were purified from whole blood following the Ficoll gradient method and genomic DNA was extracted from PBMCs.

Approximately  $1 \times 10^6$  cells were taken for DNA extraction. *L*: 1kb ladder, *2,3*: genomic DNA from two different PBMC samples. **(B)** Genomic DNA extracted from 100mg blood clot. *L*: 1kb ladder, *1-5*: genomic DNA from five blood clots.

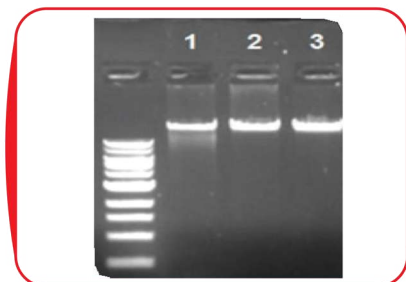


XpressDNA Tissue/Cell line kit is suitable for extraction of high quality genomic DNA from fresh, frozen and ethanol preserved mammalian tissues, fish tissues, and cell lines.



### Consistent DNA yields compared to other extraction methods.

Genomic DNA was extracted from different animal tissues such as heart, brain, kidney, liver, spleen, muscle, rat tail and fish fin (Lane L2 -L8) using XpressDNA Tissue / Cell Line kit and evaluated on 0.8% agarose gel. Lane L1:1kb DNA ladder.



### Genomic DNA extraction from cell lines.

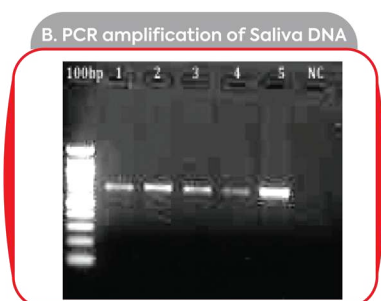
Genomic DNA was extracted from CHO cell lines using XpressDNA Tissue/Cell line kit. Lanes 1- 3 represent DNA isolated from  $0.5 \times 10^6$  cells,  $1 \times 10^6$  cells and  $1.25 \times 10^6$  cells respectively



### High purity DNA for downstream applications.

DNA extracted using XpressDNA Tissue /Cell Line kit was used in PCR amplification reactions. DNA from four different fresh tissues were amplified using two different primer sets COI and Cyt b, respectively.

XpressDNA Saliva kit guarantees good yield of high quality genomic DNA from a starting volume of 0.5 ml. The protocol is well optimized for DNA extraction from 0.5-1ml saliva.



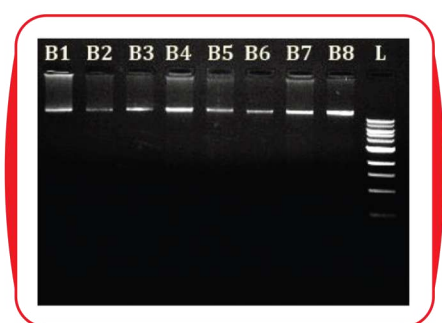
### Genomic DNA extraction using XpressDNA Saliva kit and PCR amplification of gDNA using LC01490/ HCO primers.

**A:** Genomic DNA extracted from 0.5 ml of human saliva. 1-4 represents genomic DNA extracted from saliva samples from four healthy individuals. **B:** PCR amplification of the DNA extracted using XpressDNA Saliva kit using LC01490/HCO2198 primers. The amplicon size is 650 bp.

XpressDNA Bacteria kit provides a simple and efficient magnetic nanoparticle based platform for genomic DNA extraction from both gram positive and gram negative bacteria. Bacterial diversity is the major challenge in genomic DNA extraction and hence more than hundred different bacterial strains were used for the XpressDNA Bacteria kit validation purpose.

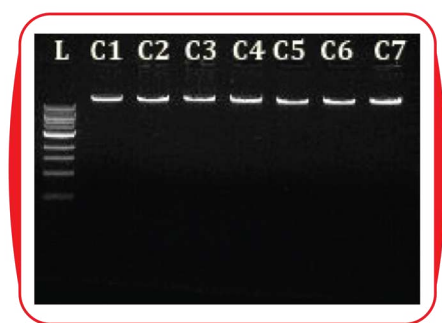
### XpressDNA Bacteria meets the following criteria

- High quantity and high quality genomic DNA
- Reproducibility and robustness
- Non toxic and easy storage of kit reagents
- The kit is suitable for both gram positive and negative bacterial stains



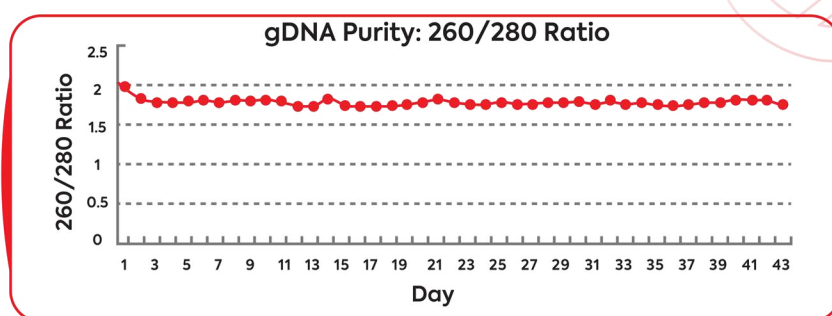
**Agarose gel electrophoresis of genomic DNA extracted from gram positive bacteria using XpressDNA Bacteria kit.**

*B1:* Bacillus megaterium  
*B2:* Enterococcus faecium  
*B3:* Staphylococcus saprophyticus  
*B4:* Lactobacillus fermentum  
*B5:* Pediococcus acidilactici  
*B6:* Bacillus subtilis  
*B7:* Lysinibacillus xylanilyticus  
*B8:* Staphylococcus hominis  
*L:* 1kb Ladder



**Agarose gel electrophoresis of genomic DNA extracted from gram negative bacteria using XpressDNA Bacteria kit**

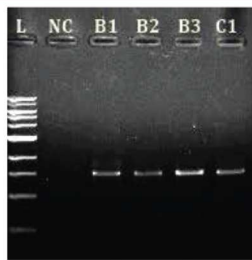
*L:* 1kb ladder  
*C1:* Acinetobacter pittii  
*C2:* Klebsiella pneumoniae  
*C3:* Enterobacter aerogenes  
*C4:* Pseudomonas aeruginosa  
*C5:* Enterobacter hormaechei  
*C6:* Rhizobium cauense  
*C7:* Betaproteobacterium



**Quality of genomic DNA extracted using XpressDNA Bacteria kit.**

Data shown above were collected from different experiments of the same bacterial strain (*Lysinibacillus fusiformis*) showing consistency in the purity of genomic DNA extracted.

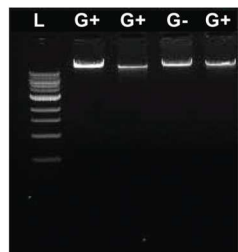




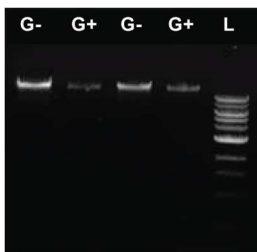
#### PCR amplification of genomic DNA using 16s rRNA primer.

Genomic DNA extracted using XpressDNA Bacteria kit was used in PCR amplification. Amplicon size - 1.5 kb, *L*: 1kb Ladder *NC*: Negative control  
*B1*: *Bacillus megaterium* *B2*: *Enterococcus faecium* *B3*: *Staphylococcus saprophyticus* *C1*: *Acinetobacter pittii*

#### A. XpressDNA™ Bacteria Kit



#### B. Competitor spin column kit



Comparison of the performance between (A) XpressDNA Bacteria kit with (B) commercially available spin column based kit.

Genomic DNA was extracted from gram positive (*G+*) and gram negative (*G-*) bacteria. *L*: 1kb ladder.

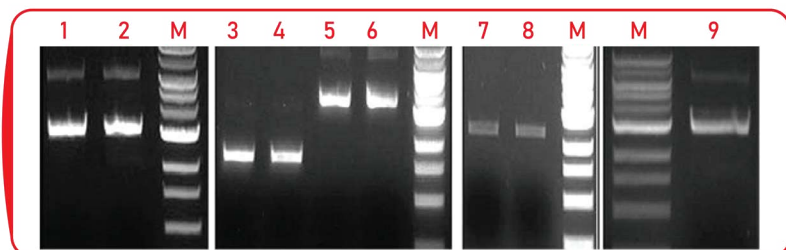
## XpressDNA Plasmid Kit

XpressDNA Plasmid kit allows rapid and efficient purification of plasmids from fresh cultures of gram negative bacteria with an OD<sub>600</sub> > 1. The plasmid DNA is extracted using the XpressDNA magnetic nanoparticles-based technology. The process of plasmid purification using the XpressDNA Plasmid kit would be finished within 20-25 minutes. The work flow is depicted in below figure. The method allows the isolation of low, medium and high copy number plasmids with high purity and negligible genomic DNA contamination.

### HIGHLIGHTS

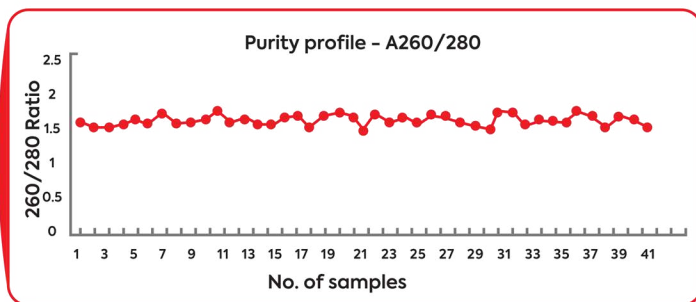
- Minimal number of buffer systems
- Multiple tube transfers not required
- Quick and user-friendly protocol
- Good recovery of high quality plasmid
- Process completion within 20-25 minutes

#### Workflow of plasmid purification by XpressDNA Plasmid Kit



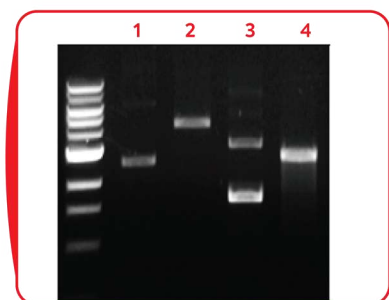
Representative AGE profiles of plasmids isolated using XpressDNA Plasmid kit.

Lanes 1-2: pST; Lanes 3-4: pUC 19; Lanes 5-6: pCR 2; Lanes 7-8: pBR322; Lane 9: pUVR. M-1 kb ladder



#### Quality of isolated plasmid in terms of 260/280 ratio using nanodrop.

Extracted plasmids are suitable for use in downstream applications including restriction enzyme digestion, PCR, cloning, transformation, sequencing and transfection.



#### Restriction enzyme Digestion

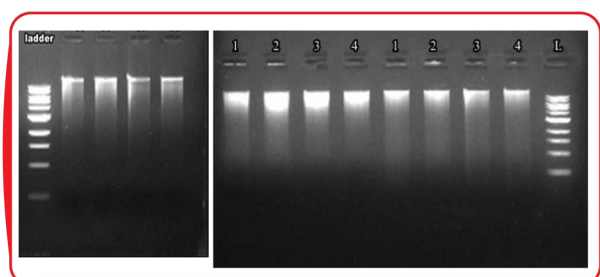
pBR322 and pUC19 extracted using XpressDNA Plasmid kit were subjected to restriction digestion using EcoR1. *Lane 1*: uncut pBR322; *Lane 2*: cut pBR322; *Lane 3*: uncut pUC19, *Lane 4*: cut pUC19.



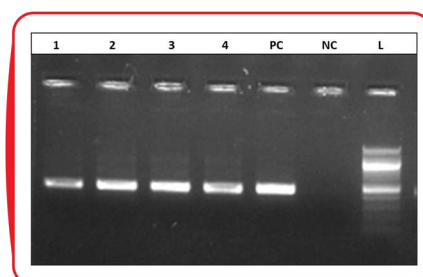
The XpressDNA soil kit enables rapid purification of high quality microbial DNA from a wide variety of soil samples including extreme environmental samples like deep sea soil. We have developed a patented magnetic nanoparticles-based technology for DNA/RNA extraction that is quick, robust and ready for downstream PCR, sequencing, and other applications. The new method effectively eliminates humic acid leaving high quality genomic DNA for downstream applications. The highly efficient inhibitor removal technology makes this the prime kit for meta-genomics research projects.

### HIGHLIGHTS

- Efficient lysis of all microorganisms (including gram positive bacteria and fungi) by a combination of chemical and mechanical disruption without bead beating step.
- Higher yield and purity.
- Efficient removal of PCR inhibitors by precipitation.
- Recovery of high-purity, inhibitor free DNA compatible with common downstream applications such as qPCR and next-generation sequencing.
- More OTUs and higher Alpha diversity in metagenomic analysis.



Agarose Gel Profile of genomic DNA from different soil samples

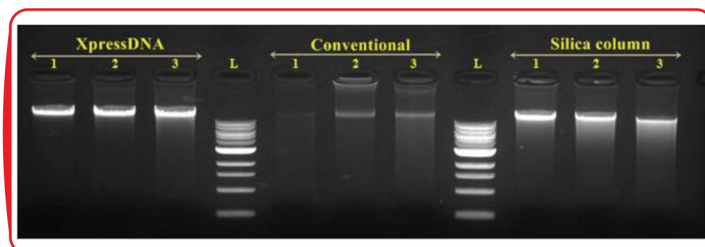


Downstream compatibility: PCR amplification of genomic DNA extracted using XpressDNA Soil Kit from different Soil Samples using V3-V4 primer (490bp)

XpressDNA Plant kit ensures the quick and easy extraction of pure, contaminant free DNA from various plant species and tissue types like leaf, seeds, stem, roots and other plant parts. DNA extraction from plant is highly challenging due to the sample heterogeneity and presence of cellular components like polysaccharides, secondary metabolites like polyphenols, terpenoids, alkaloids etc.

## HIGHLIGHTS

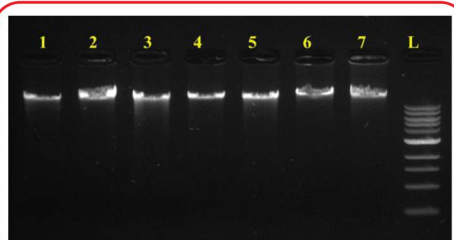
- Contaminant free pure DNA.
- High quality DNA: A 260 /A 280 1.65 - 1.90
- No phase separation in the process.
- Nanoparticles Enables extraction of genomic DNA of size >50kb, suitable for NGS platforms like PacBio and Nanopore.
- High yield ranging between 1µg - 23µg/ 100mg tissue.
- Universal kit for different plant parts like dry seeds, stem and roots.
- No frequent centrifugations needed.



**Comparison of genomic DNA extraction from leaf using three different methods**

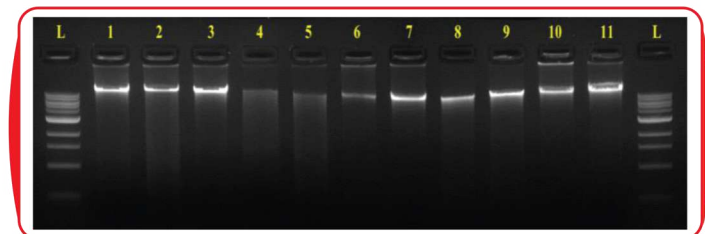
Including XpressDNA Plant Kit, Conventional phenol chloroform extraction and spin column based commercial kit:

1. *Vigna* sp.(Cowpea) 2. *Passiflora edulis*(Passion fruit) 3. *Hevea brasiliensis*(Rubber) L. 1kb ladder



**AGE profile of genomic DNA from leaves using XpressDNA Plant Kit**

1. *Azadirachta indica*(Neem) 2. *Brassica nigra*(Mustard)  
3. *Magnifera indica*(Mango) 4. *Heliconia* sp. 5. *Psidium guajava* (Guava)  
6. *Nerium* sp. 7. *Artocarpus heterophyllus*(Jack fruit) L. 1kb ladder



**AGE profile of genomic DNA from dry seeds**

L. 1kb ladder 1. *Vigna* sp.(Red cowpea) 2. *Triticum aestivum* 3. *Cicer arietinum*(Chickpea) 4. *Sesamum indicum*(Sesame)  
5. *Coriandrum sativum*(Coriander) 6. *Trigonella foenum-graecum*(Fenugreek) 7. *Helianthus annuus*(Sunflower) 8. *Oryza sativa*(Rice) 9. *Pennisetum* sp.(Millet) 10. *Brassica nigra*(Mustard) 11. *Vigna radiata*(Mung bean)

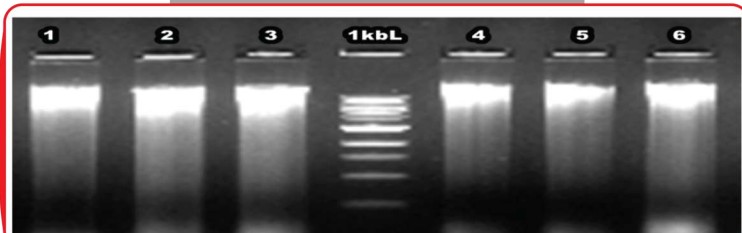


The XpressDNA Stool kit uses our patented magnetic nanoparticles-based technology for DNA extraction that is quick and robust and ready for downstream PCR, sequencing, or other applications. Inhibitor removal step effectively removes complex polysaccharides, bile salts and other contaminants in the stool sample. The new method effectively eliminates PCR inhibitors leaving high quality genomic DNA for downstream applications. The highly efficient inhibitor removal technology makes this the prime kit for metagenomics research projects.

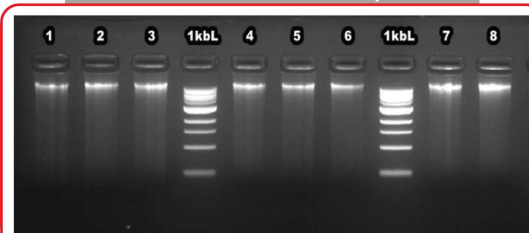
## HIGHLIGHTS

- Efficient lysis of all microorganisms (including gram positive bacteria and fungi) by a combination of chemical and mechanical disruption without bead beating step.
- High quality genomic DNA.
- High yield
- Efficient removal of PCR inhibitors by precipitation.
- Recovery of high-purity, inhibitor free DNA compatible with common downstream applications such as qPCR and next-generation sequencing.

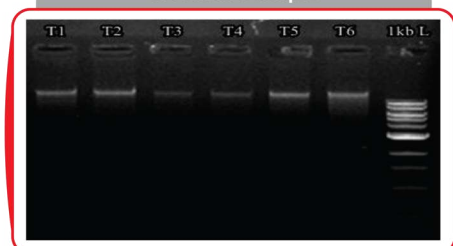
**A: Human Stool**



**B. Ruminant Fecal Samples**

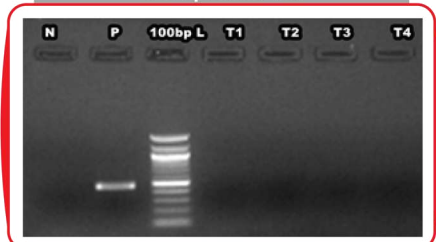


**C. Avian Sample**

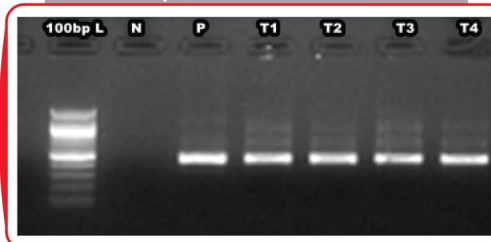


**Agarose Gel Profile of genomic DNA from different sample**

**Competitor kit**



**XpressDNA stool kit**



PCR amplification of genomic DNA extracted using XpressDNA Stool Kit from different samples using V3-V4 primer (490bp)

XpressDNA Milk kit is specially designed for the rapid isolation of genomic DNA from a wide variety of milk samples. High-Quality DNA extraction is based on our innovative patented magnetic nanoparticles-based technology. It is optimized for DNA purification from both Gram-negative and Gram-positive bacterial cells and host DNA. Genomic DNA extracted from somatic cells and bacteria found in milk can be used in various applications. The isolated DNA can be used for the detection of biomarkers to diagnose a disease, following the diseases progress or monitor the effects of a particular treatment. Milk DNA can also be used to diagnose types of infections and population studies. The purified genomic DNA is fully digestible with all restriction enzymes tested and is completely compatible with downstream applications including PCR and NGS Sequence profiling.

### HIGHLIGHTS

- Easy and Fast protocol: obtain results in few minutes
- High-quality DNA obtained, ready-to-use in all downstream applications
- Safe and Convenient: avoids phenol/chloroform Extraction
- Efficient: from 500µl (depending on the sample material amount and type)
- Can process challenging samples such as mastitic milk

XpressDNA Water kit built on our innovative patented magnetic nanoparticles-based technology enables convenient and rapid method for the isolation of microorganisms from environmental water samples. The kit has been successfully used to isolate DNA from tough-to-lyse bacteria, fungi, and algae that inhibit a range of samples including tap water, lake water, river water, and sewage samples. The purified DNA are highly concentrated and can be used directly in several downstream applications including PCR and sequence profiling.

### HIGHLIGHTS

- Sample types: Ocean water, fresh water, brackish water, ground water, tap water, lake water, river water, sewage water
- Reliable - Reproducible DNA purification from variety of sample sources
- High quality - Inhibitor free DNA compatible with common downstream applications such as PCR and next-generation sequencing
- High yield and purity - Efficient purification of DNA from even specialized samples



XpressDNA Fungal kit provide a rapid, reproducible, robust and convenient method for the isolation of genomic DNA. Our patented magnetic nanoparticle technology is apt for isolation of high purity and efficient genomic DNA from the wide varieties of fungal samples. This kit can isolate the genomic DNA from fresh or frozen filamentous fungi sample and can perform the purification of DNA from wide range of filamentous fungal species. The purified DNA is free of protein, nucleases, and other contaminants or inhibitors.

## HIGHLIGHTS

- No alcohol precipitation or organic extraction
- It can recover 2.5 -20µg genomic DNA from 50-100 mg of fungal spores or mycelium
- Efficient and Contaminant free
- Rapid purification of high quality of DNA
- High yield of purified DNA and Consistent
- Fastest and simple method for purification of genomic DNA which can be directly used for all downstream application

### AGE profile of genomic DNA from fungal using XpressDNA Fungal kit



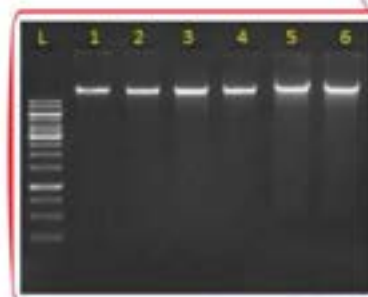
Genomic DNA extracted from 50 mg of fungal sample. L: 1kb ladder, 1-4: genomic DNA from four fungal samples. (1) Tricoderma sp (2) Penicillium sp (3) Aspergillus sp (4) Tricoderma sp

XpressDNA algae kit, specifically designed for purification of total DNA from algae. High-Quality DNA extraction is based on our innovative patented magnetic nanoparticles-based technology. This kit is optimized to extract the genomic DNA from a variety of algae such as brown algae, yellow-green algae, red algae, green algae etc. Its a fast and easy methods for purification of genomic DNA from algae with starting volume of 50 mg wet weight or 1 ml culture. The purified DNA have no detectable contaminating proteins, nucleases, and other impurities. The eluted genomic DNA can be suitable for direct use in enzyme digestion, Southern blotting and analysis by PCR.

## HIGHLIGHTS

- Our optimized protocol for a quick and reproducible extraction with better yields and quality of DNA
- Efficient method for purification of DNA from specialized algae samples from different sources like rivers, ponds, lakes, streams, and ocean
- High yield ranging between 5µg - 25µg
- High quality of genomic DNA, ready for use in common downstream reactions

### AGE profile of genomic DNA from algae using XpressDNA Algae kit



Genomic DNA extracted from 1 ml of algae sample. L: 1kb ladder, 1-6: genomic DNA from six algae samples.



XpressDNA Pathogen DNA Extraction Kit allows rapid and reliable high-quality DNA isolation from blood or urine pathogens. The patented magnetic nanoparticle technology can isolate and purify DNA from a wide variety of fungi, gram positive and gram-negative bacterial species from blood and urine samples. XpressDNA Pathogen kit is validated for extraction of DNA for downstream processing including PCR, RT PCR, restriction digestion, genotyping and NGS analysis including de novo genome sequencing.

## HIGHLIGHTS

- High Yield and Purity above 1.7
- Reproducible isolation of high molecular weight gDNA 500bp-200Kbp
- Complete removal of Contaminants and Inhibitors.
- Buffers and reagents are contamination-free.
- Easy and convenient protocol.
- Ultrapure gDNA ready for all downstream applications.

## Cleanup and Size Selection



The XpressPure Beads is designed to recover or concentrate DNA fragments from PCR or other enzymatic reactions. Specific DNA fragment is bound to the surface of the magnetic nanoparticles and released using a buffer system. The XpressPure Beads PCR Cleanup- kit can be easily adapted to automated magnetic beads separation instruments and workstations. The purified DNA can be used in a variety of downstream applications.

## HIGHLIGHTS

- High Yield: >90% recovery
- High Quality DNA: A260/A280 = 1.6- 2.0
- Magnetic Nanoparticle Size: ~ 10 nm
- Easily adapted to automated magnetic bead separation instruments and workstations.
- Sample: 10 µl to 100 µl of PCR products Manual or automated DNA isolation.
- Operation time: 25 minutes (manual) Storage: room temperature (15-25°C)
- Broad Fragment Size Range: 100 bp-1.5 kb

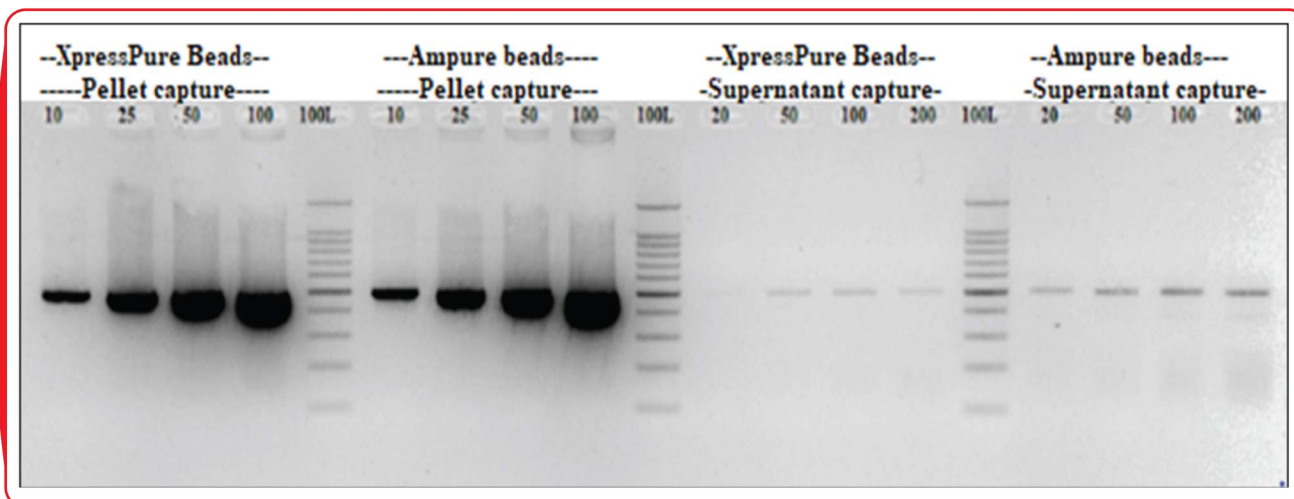
## Comparison of XpressPure beads with PCR clean-up spin-column



Frag size (bp)	Methods tested	Conc(ng/μl)	Yield in 20(μl)	A260/280	A260/230
1500	XpressPure Beads	30.4	608	1.9	1.99
	NucleoSpin PCR cleanup kit	65.5	1310	1.83	0.49

Sample: PCR product of 1500bp; rxn volume: 25 μl; Elution volume: 20μl

## Comparison of XpressPure beads with Ampure beads



XpressPure Beads	Sample vol (μl)	Conc(ng/μl)	A260/280	Ampure	Sample vol (μl)	Conc(ng/μl)	A260/230
	10	28.3	1.89		10	28	1.93
	25	76.3	1.88		25	72.1	1.88
	50	143	1.87		50	146.2	1.87
	100	280.4	1.88		100	282.2	1.89

PCR product clean-up from different sample volumes: capture with XpressPure Beads and Ampure beads

XpressPure NGS size selection and clean-up bead offer a straightforward and reliable selection of DNA libraries for different NGS workflows with high recovery rates. The system combines MagGenome's proprietary chemistries with reversible nucleic acid-binding properties of magnetic beads to selectively bind fragments of a specific range (150-800 bp) and eliminate sub-optimal fragment sizes. XpressPure size selection beads can selectively bind DNA fragments based on different sample to bead ratios offering the customer to perform accurate single or double-sided size selection, designed to narrow the library size range, leading to more consistent performance between libraries.

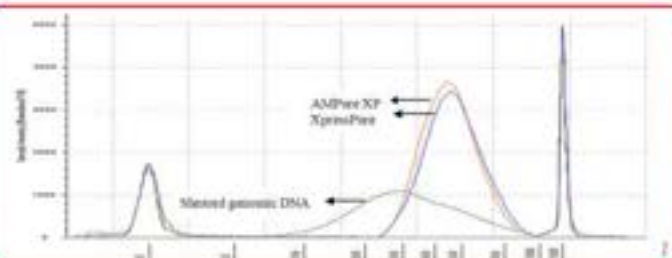
## HIGHLIGHTS

- Efficient clean up and single or double-sided size selection
- Predictable and consistent size selection
- Easy substitution into bead-based workflows
- Fast Magnetic response time and low viscosity
- Automation friendly

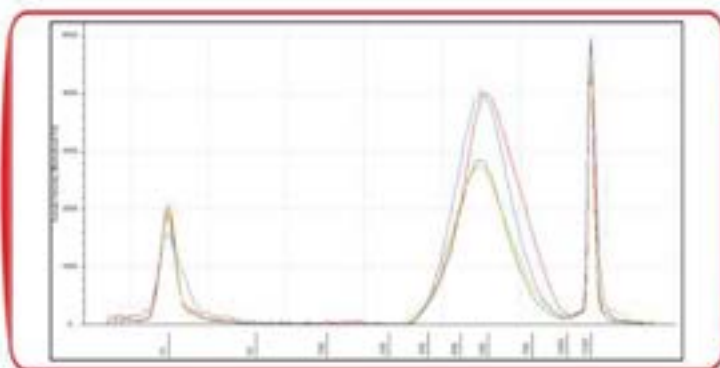
## HANDLING RECOMMENDATIONS

- Store the beads at the recommended temperature (4°C)
- Store the elution buffer at room temperature
- Vortex the beads before use
- Allow enough time for beads to come to room temperature before use

**(A):** Tape station profile - Data showing final library distribution (400bp-500bp) for 300bp in NEB Next Ultra DNA Library kit using XpressPure and AMPure XP beads.



**A. Comparison of XpressPure and AMPureXP in NGS library size selection**



**B. Highly reproducible size selection: XpressPure Bead shows consistent yield and library size distributions.**

**(B):** Tape station profile - data showing 200bp capture using 1.8x bead volume of XpressPure bead.

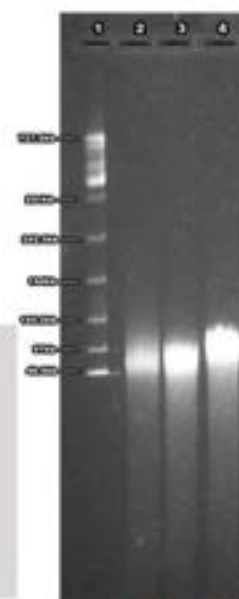


XpressPure SizeSelect HMW beads enables the user to purify and select high molecular weight DNA fragments using MagGenome's proprietary reversible nucleic acid-binding chemistry of magnetic nanoparticles. The purified HMW DNA is ideal for ultra-long, high throughput or third-generation sequencing platforms such as Nanopore and PacBio. With a unique binding system, XpressPure SizeSelect HMW beads can selectively bind DNA fragments up to 250kb in length with high purity, suitable for PacBio and Oxford Nanopore platforms. XpressPure SizeSelect HMW beads performance is comparable with AMPure XP and can be replaced with other beads without compromising the quality of the library.

## HIGHLIGHTS

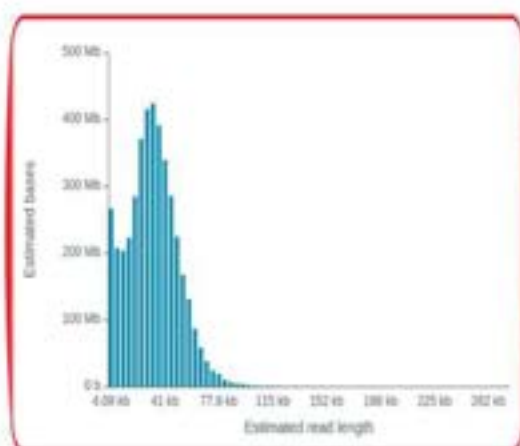
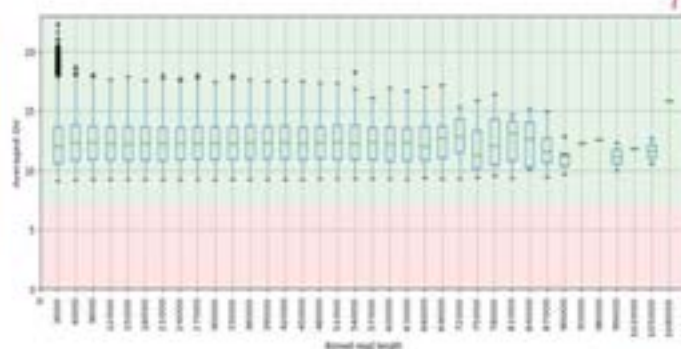
- Paramagnetic bead-based chemistry
- Compatible with various ultra-long read sequencing platform
- Fast magnetic response and low viscosity
- Consistent performance
- Can selectively bind DNA up to 250 kb

PFGE gel image showing XpressPure SizeSelect HMW Bead clean up DNA from various sample 1-Lambda PFG Ladder (Size range: 48.5 - 1,018 kb), 2- Saliva DNA cleanup using XpressPure SizeSelect HMW Bead, 3 - Blood DNA cleanup using XpressPure SizeSelect HMW Bead, 4 - Plant DNA isolated using XpressPure SizeSelect HMW Bead.



## QC Data from Oxford Nanopore sequencing

Parameters	XpressPure SizeSelect HMW Bead	Competitor XP
Total no of reads generated	294,097	107,501
Longest read	2,44,795 bp	1,15,529 bp



Graph displaying the Nanopore MinION sequencer output with the estimated read length histogram while using the XpressPure SizeSelect HMW bead .

## Sample Collection

### MagStable DNA Saliva Collection Kit

MagStable offers an easy, convenient and safe method for the collection, stabilization, transportation and storage of saliva samples. Saliva Preservation Solution effectively stabilizes buccal cells and white blood cells found in saliva over 1 year at room temperature.

#### HIGHLIGHTS

- Painless, non-invasive collection.
- Simple and convenient sample collection.
- Saliva samples are stable for long-term room temperature storage.
- High quality Intact DNA can be obtained.
- Median A260/280 ratio of 1.7
- Suitable for NGS, PCR applications.



### Xpress Molecular Transport Medium

MagGenome Xpress Molecular Transport Medium was designed and optimized for molecular testing allowing pathogenic samples to be collected, transported, and processed safely and efficiently. Our XpressMTM is produced with molecular grade buffer that is DNase, RNase, and protease-free. The molecular transport medium inactivates infectious biological pathogens including viruses, and gram-positive/negative bacteria whilst preserving and stabilizing labile DNA and RNA for downstream molecular applications.

#### Storage, Shipping Condition & Shelf Life

- Samples are Stable for 4 days at room temperature and stable for 28 days at 2-8°C.
- It should be noted that samples will not be affected by multiple freeze-thaw cycles.
- Studies have shown longer stability for RNA at both ambient and high temperatures from time of collection to time of nucleic acid extraction compared with other transport media. Shelf life of the product is 12 months.



## MagStable DNA Swab Collection Kit

The MagStable DNA Swab Collection kit offers a simple and quick system to store buccal swab samples for long durations. The stored buccal swabs can be used to isolate high quality genomic DNA. The MagStable technology provides an easy and reliable method to store saliva samples at room temperature for up to 12 months and beyond. DNA extracted by any manual or automated method using the saliva samples stored in MagStable kit is of high quality and is amenable for all downstream applications such as PCR, Real time PCR, Restriction digestion, Sanger sequencing and NGS. MagStable swab collection kit guarantees better stability and high quality of DNA as compared to competitor kits.

### HIGHLIGHTS

- Painless collection
- Simple and convenient sample collection
- Buccal swab samples are stable for long-term room temperature storage
- High quality intact DNA can be obtained
- Median A260/280 ratio of 1.7
- Suitable for NGS and PCR applications



## MagStable Stool Collection Kit

MagStable stool collection kit offers an easy, convenient, and safe method for the collection, stabilization, transportation, and storage of stool samples (clinical specimens) to be analyzed by nucleic acid-based assays. DNA Stabilizing reagent pre-filled into vials ensures sample stability during transport/storage at ambient temperatures without refrigeration or specialized specialized equipment. The DNA is protected from degradation for up to 2 months at room temperature in the DNA stabilizer. The reagent is compatible with commercially available nucleic acid extraction kits (XpressDNA Stool kit) and automated workflows.

### HIGHLIGHTS

- Painless, non-invasive collection
- Simple and convenient sample collection
- Stool samples are stable for long-term room temperature storage
- High quality intact DNA can be obtained
- Suitable for NGS and PCR application





# MagGenome

## Viral Transport Medium

MagGenome's Viral Transport Medium Kit is specially designed to collect and transport viruses in an active form to the laboratory for DNA or RNA isolation. It is to maintain the viability and the virulence of the viral sample. MagGenome VTM is made of Hanks Balanced Salt Solution and contains a protective protein, more than two antibiotics to control microbial and fungal contamination and buffers to control the pH. The medium also contains a cryoprotectant which helps in preserving the viruses if specimens are frozen for prolonged storage.

The sterile flocked nylon swab (nasal & oral swabs) has a short perpendicular ultra-flexible nylon shaft that is designed for better patient comfort. This nylon shaft is attached with soft nylon strands that results in efficient collection and release of particulate matter. It yields significantly more sample which helps in maximizing the sensitivity of serological and molecular detection assays. This swab has a molded breakpoint which allows the swab to be broken in to the tube. Sample collection tube is designed in such a way that can directly inserted into automated nucleic acid extraction systems.

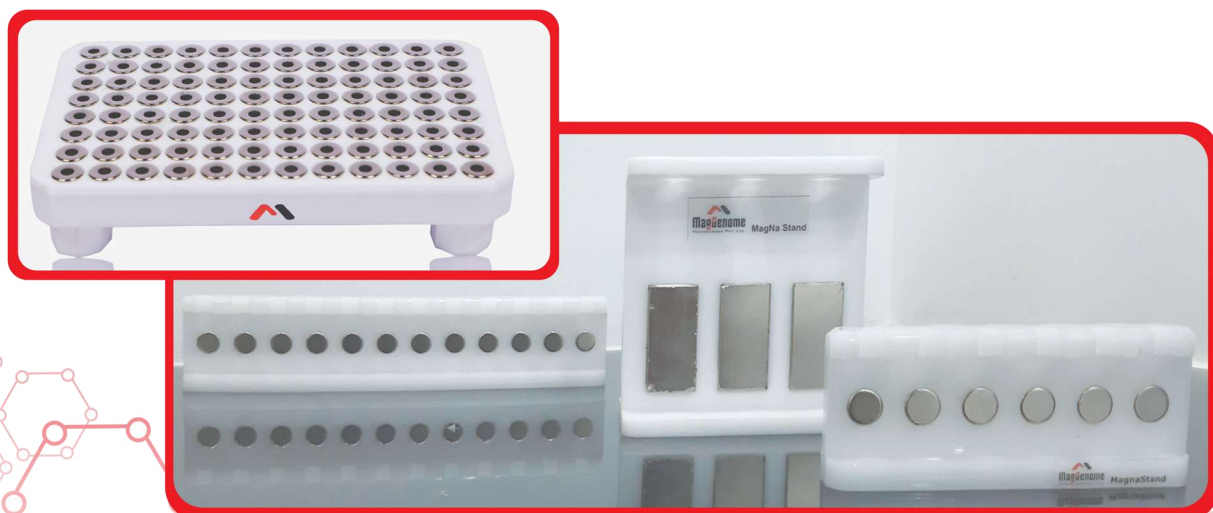
### Transportation of the Samples

- Samples should be transported to the laboratory as soon as possible.
- Samples can be refrigerated at 2-8°C after collection or can be transported at 2-8°C on wet ice within 48 hours.
- If a long delay is expected in transit and processing, samples should be transported on dry ice and should be frozen at -70°C.

## Magnetic Stand

### MagnaStand

- The base of the MagnaStand contains six rare-earth magnets.
- Efficient to Pull the beads to the tube wall to allow removal of supernatant.
- Compact design and Easy to Handle.
- Can be used for NGS, Nanopore library cleanup, DNA/RNA Extraction and Antibody purification.
- Suitable for 16x1.5-2ml tubes, 24x1.5-2ml tubes, 3x15ml tubes, 3x50ml falcon tubes, 12x1.5-2ml tubes



## Automation Compatible Nucleic Acid Extraction Kits

### XpressAutomag Blood DNA Kit

XpressAutomag Blood DNA Kit is designed for optimal automated extraction of high-quality DNA from blood with a starting volume of 200µl with an approximate yield of ≥5µg of DNA. The kit is well suitable for the instruments Kingfisher Flex, Zybio and Alta, it can process from 1-96 samples in a single run. The Kit provides patented magnetic nanoparticle-based DNA purification from whole blood samples. DNA extracted using XpressAutomag Blood DNA Kit is amenable for all downstream applications such as PCR, Real-time PCR, restriction digestion, and sequencing applications. The kit can be easily adapted to automated magnetic- based separation instruments and workstations.

#### HIGHLIGHTS

- Sample input requirement: Min 200µl upto 3ml
- Isolate high-quality gDNA from fresh/ frozen/ clotted/ or aged blood samples
- Fast, reproducible, and easy processing using magnetic bead based system
- Isolate gDNA from blood stored in different vacutainers (EDTA, Heparin, Citrate, and Fluoride)
- Recovered gDNA is compatible with various downstream applications

#### Extraction of DNA from different blood storage vacutainers

Table 1: Nanodrop data of the gDNA extracted from different blood storage vacutainers

Storage	Conc. (ng/µl)	A260/280	A260/230	Yield (µg)
EDTA	118.3	1.93	1.85	5.92
Citrate	120.6	1.93	1.85	6.03
Heparin	116.2	1.94	1.77	5.81
Fluoride	127.7	1.93	1.84	6.39

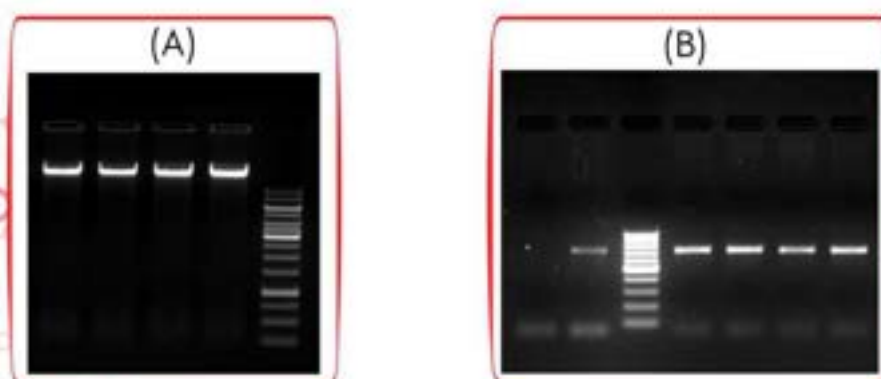


Figure (A): AGE Profile of the extracted gDNA (200 ng normalized gDNA); (B): PCR amplification of the extracted gDNA using LCO1490 & HCO2198 (700bp product)

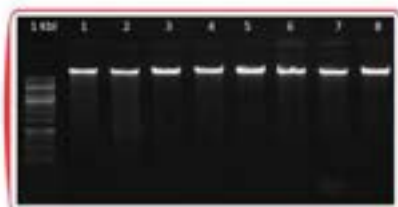


## XpressAutomag Saliva DNA Kit

XpressAutomag Saliva DNA Kit provides patented magnetic nanoparticle-based DNA purification from saliva samples. The kit is designed to isolate high-quality DNA from saliva with a starting volume of 500µl with an approximate yield of  $\geq 5\mu\text{g}$  of DNA. The purification process does not involve phenol/chloroform extraction or alcohol precipitation. DNA extracted using Xpress Automag Saliva DNA Kit is amenable for all downstream applications such as PCR, Real-time PCR, restriction digestion, and sequencing applications. The kit can be easily adapted to automated magnetic- based separation instruments and workstations.

### HIGHLIGHTS

- Sample input requirement: Min 500µl (stored saliva)
- Isolate high-quality gDNA from fresh/ frozen/ or stored saliva samples
- Fast, reproducible, and easy processing using magnetic bead based system
- Recovered gDNA is compatible with various downstream applications
- Automation friendly with KingFisher Flex, Duo, ZYBIO, Himedia and others



1% Agarose gel electrophoresis profile of Genomic DNA from saliva samples

## XpressAutomag Tissue DNA Kit

XpressAutomag Tissue DNA Kit is designed for optimal automated extraction of high-quality DNA from blood with a starting volume of 5mg to 20mg with an approximate yield of  $\geq 5\mu\text{g}$  of DNA. The kit is well suitable for the instruments Kingfisher Flex, Zybion and Alta, it can process from 1-96 samples in a single run. The Kit provides patented magnetic nanoparticle-based DNA purification from different tissue samples. DNA extracted using XpressAutomag Tissue DNA Kit is amenable for all downstream applications such as PCR, Real-time PCR, restriction digestion, and sequencing applications. The kit can be easily adapted to automated magnetic - based separation instruments and workstations.

### HIGHLIGHTS

- Sample input requirement: Min 5mg to 20mg
- Isolate high-quality gDNA from fresh/ frozen/ or ethanol preserved mammalian tissues and cell lines.
- Fast, reproducible, and easy processing using magnetic bead-based system
- Recovered gDNA is compatible with various downstream applications
- Quick Turn Around Time & Recommended for HLA, NGS & Microarray



1% Agarose gel electrophoresis profile of Genomic DNA from Tissue samples  
(From 5mg sample to 20mg sample)

## XpressAutomag Nucleic Acid Extraction Instrument

XpressAutoMag is a high throughput, high sensitive automated nucleic acid extraction equipment which is optimized for various nucleic acid extraction kit. The instrument is flexible, provides stable result, low cost, equipped with efficient filtration device and safety gate design. It can effectively avoid cross contamination and ensure the quality of nucleic acid extraction.



Model	XpressAutomag
Nucleic Acid Extraction Method	Paramagnetic particle method
Sample Capacity	96-well
Sample Volume	20-1000μl
Extraction Time	11min-60min
Magnetic Bead Recovery	≥98%
Magnetic Flux of Bar	≥4500Gs
Operating Temperature	RT-105 degree celsius
Shock Function	Yes
Temperature Accuracy	0.1 degree celsius
Sample Protection Function	Power on self-check, power off protection, high-temperature alarm, over-temperature protection
Disinfection Method	UV Light
Safety Door Design	The instrument is suspended when the safety door is opened
Operating System	Windows system
Scanning	Optional
Storage	>1000
Interface	USB interface
Power Supply	AC100-240V 50Hz/60Hz
Package Size(W*D*H)mm	940*710*910mm
Gross Weight(kg)	110kg



# Enzymes

## RNaseA solution

RNase A is an endoribonuclease that attacks at the 3' phosphate of a pyrimidine nucleotide. The sequence of pG-pG-pC-pA-pG will be cleaved to give pG-pG-pCp and A-pG. The highest activity is exhibited with single stranded RNA. RNase A is a single chain polypeptide containing 4 disulfide bridges. In contrast to RNase B, it is not a glycoprotein. RNase A can be inhibited by alkylation of His12 or His119, which are present in the active site of the enzyme. Activators of RNase.

**CONCENTRATION :** 10 mg/ml

### APPLICATIONS

- It is an endoribonuclease that specifically cleaves single stranded RNA. It cleaves 3' end of unpaired C and U residues.
- RNase A specifically cleaves single-stranded RNA at 3' phosphate linkages of pyrimidine residues leaving pyrimidine 3' phosphates and oligonucleotides with terminal pyrimidine 3' phosphates.
- It is used in plasmid and genomic DNA protocols to obtain RNA-free DNA. It is also used for cleaving of unhybridized regions of RNA from DNA-RNA or RNA Hybrids.

**STORAGE:** The product as supplied is stable at 2-8°C. For long term storage at -20°C.

**PROPERTIES :** Molecular Weight : 13,700 Da

**OPTIMUM pH :** 5.0 - 6.0



## Proteinase K (Recombinant)

Proteinase K is one of the most active endopeptidases ever known. This serine-like protease exhibits extremely effective degradation of both native and denatured proteins. Proteinase K is widely recommended for quick deactivation of endogenous RNases and DNases within the first steps of nucleic acids isolation. We produce recombinant Proteinase K possessing endopeptidase activity identical to market available products from world leading competitors. The enzyme is fully compatible with any applications including DNA/RNA Extraction.

### HIGHLIGHTS

- Highest quality due to unprecedented purity grade.
- Totally DNA / RNA free enzyme, dedicated to applications sensitive to exogenous nucleic acids.
- DNase and RNase free product.

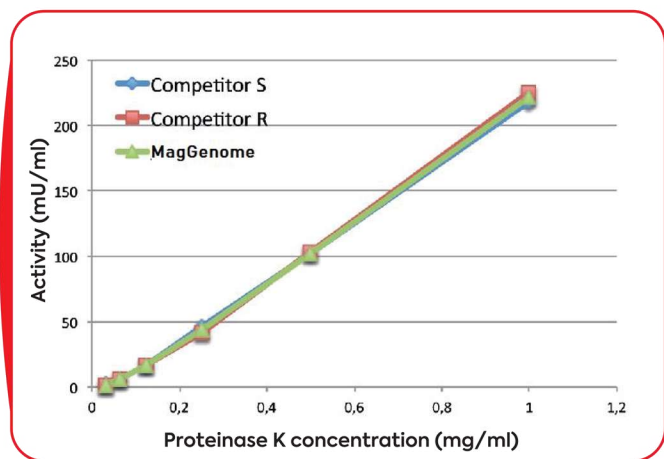
## PRODUCT

**Lyophilizate :** Proteinase K 20 mg with dilution buffer

**Specific activity:** >30 U/mg

**Storage:** Store at + 4 °C

The recombinant enzyme is cloned from fungus *Engyodontium album* and produced in *Pichia pastoris*.



Endopeptidase activity comparison of MagGenome Proteinase K versus commercially available Proteinases K.

## Lysozyme

The lysozyme preparation is purified from chicken egg white, crystallized three times, dialyzed, and supplied as a lyophilized powder. Protein content by UV absorbance is <sup>3</sup>90% with the remainder (~10%) being buffer salts such as sodium acetate and sodium chloride. This highly purified enzyme preparation has been used in mass spectrometry as a protein mass calibration standard and in structural studies of proteins.

**Lysozyme activity:** 40,000 units/mg protein

**Storage/Stability:** The product, as supplied, should be stored at -20°C. When stored at -20°C, the enzyme retains activity for at least 4 years. Solution (pH 4-5) remain active for several weeks if refrigerated.

## Carrier RNA

Poly (A) carrier RNA is used for quantitative precipitation/purification of RNA and DNA. It improves recovery of short fragments (< 200 bp) or low amounts of nucleic acids.

**Storage Conditions:** store at -20 °C

Short term exposure (up to 1 week cumulative) to ambient temperature possible. Store in dark.

**pH:** 6.5-8.5

**Molecular Weight:** 100 - 500 kDa

**Appearance:** White or almost white powder.

**Solubility:** Freely soluble in water, insoluble in ethanol in ethanol or in ether



## Lab essentials

### Nuclease Free Water

Highly pure, protease and DNase free water for use in all molecular biology applications.

- Water is membrane-filtered, autoclaved
- Not DEPC-treated
- Protease and DNase-free
- Designed for use in all molecular application
- Nuclease-free Water incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.

**STORAGE CONDITIONS:** Nuclease-Free Water should be stored at room temperature (15–25°C)

### APPLICATIONS

Molecular biology grade water is ideal for the preparation of reagents, rinsing glassware and plasticware, and other molecular biology applications where RNase, DNase, and Protease-free water is required. It is widely used for several fundamental procedures like PCR, gel electrophoresis and DNA sequencing etc.

### PROPERTIES

**Appearance:** Colorless solution

**Clarity:** Clear and free of particles

**DNase :** None detected

**Sterility:** No bacterial or fungal growth is observed after 30 days of incubation

### MagGreen DNA Loading Buffer

**PACK SIZE:** 1ml/5ml

- 10X Gel Loading buffer contains a non-carcinogenic fluorescent dye along with an orange tracking dye.
- A replacement to EtBr.
- MagGreen dye can be visualized in blue light transilluminator which replaces the use of UV.
- Sensitivity is 25 times greater than EtBr.

### HIGHLIGHTS

- Environmental and User-friendly dye (Non-hazardous)
- UV-transilluminator not required.
- Dark room not required.
- Visualize DNA as it separates in real time.
- Dye will not hinder any downstream applications such as gel elution and cloning.

**STORE:** Storage at 4°C.

### NOTE:

Add 1–2 µl of dye per µg of DNA. Once opened, stable for 6 months, if handled and stored at proper conditions.

## TE Buffer

1X TE Buffer, pH 7.6 is composed of Tris, a buffering agent and EDTA, a chelating agent. It is an extensively used buffer in Molecular Biology. Its principal application includes protection of DNA and RNA from degradation.

### HIGHLIGHTS

- TE buffer is mainly used in storing DNA
- Genomic and plasmid DNA can be stored in TE Buffer at 4°C for short-term use, or -20°C to -80°C for long-term storage
- Repeated freeze-thaw cycles should be avoided
- Moreover, Tris-EDTA buffer disrupts protein cross-links and therefore is useful in unmasking antigens and epitopes in formalin-fixed and paraffin-embedded tissue sections

## Nanoparticles

### **X**pressNano Iron Oxide Nanoparticles

Iron oxide nanoparticles of magnetite ( $\text{Fe}_3\text{O}_4$ ) range in diameters from 10–20nm. At this size range, the nanoparticles exhibit higher surface area to mass ratio and are associated with unique properties and behavior, such as superparamagnetism, strong magnetism, and a higher binding affinity to biological macromolecules. Manufactured using proprietary and patented green technology, the nanoparticles are biocompatible, non-toxic and leave no negative environmental footprint.

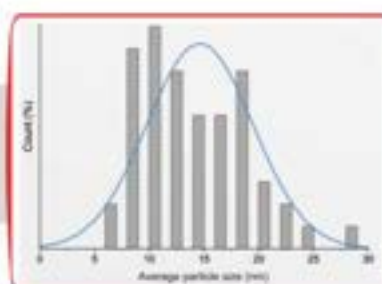
### APPLICATIONS IN LIFE SCIENCES

- Nucleic acid extraction from biological samples
- In targeted drug delivery
- In packaging and delivery of plasmids for gene therapy
- As nano-adjuvant for vaccines and antibody generation
- As a therapeutic in hyperthermia based cancer treatment
- As magnetic sensing probes in *in-vitro* diagnostics
- In water treatment for removal of bacteria and viruses

### PRODUCT DETAILS

- **Chemical formula** :  $\text{Fe}_3\text{O}_4$
- **Form** : Dispersion in TE buffer, pH 8.0
- **Concentration** : 20mg/ml
- **Colour** : Dark brown
- **Surface charge** : Negative
- **Average particle size** : 15±4nm (TEM validated) 10–100nm can be synthesized as per customer requirement
- **Stability** : Atleast 1 year
- **Storage** : Stable at RT, keep at 4°C for longer storage
- **Catalogue No** : MC22\_IOMNP 1

**Fig:** particle size distribution of iron oxide nanoparticles





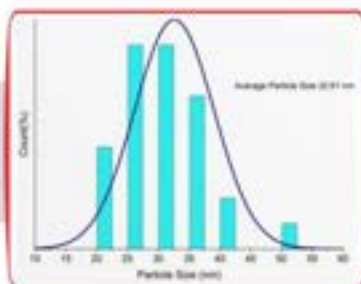
## **XpressNano** Large Iron Oxide Nanoparticles

Iron oxide nanoparticles of magnetite ( $\text{Fe}_3\text{O}_4$ ) in the size range of 27–35nm. The nanoparticles exhibit higher surface area to mass ratio and are associated with unique properties and behavior, such as superparamagnetism, strong magnetism, and a higher binding affinity to biological macromolecules. Manufactured using proprietary and patented green technology, the nanoparticles are biocompatible, non-toxic and leave no negative environmental footprint.

### APPLICATIONS IN LIFE SCIENCES

- › Nucleic acid extraction from biological samples
- › In targeted drug delivery
- › In packaging and delivery of plasmids for gene therapy
- › As nano-adjuvant for vaccines and antibody generation
- › As a therapeutic in hyperthermia-based cancer treatment
- › As magnetic sensing probes in in-vitro diagnostics

**Fig:** particle size distribution of iron oxide nanoparticles



### PRODUCT DETAILS

- › **Chemical formula** :  $\text{Fe}_3\text{O}_4$
- › **Form** : Dispersion in TE buffer, pH 8.0
- › **Concentration** : 20mg/ml
- › **Colour** : Dark brown
- › **Surface charge** : Negative
- › **Average particle size** : 32±6nm (SEM validated)
- › **Stability** : Atleast 1 year
- › **Storage** : Stable at RT, keep at 4°C for longer storage
- › **Catalogue No** : MG22 IOMNP 2

## **XpressNano** Gold Nanoparticles

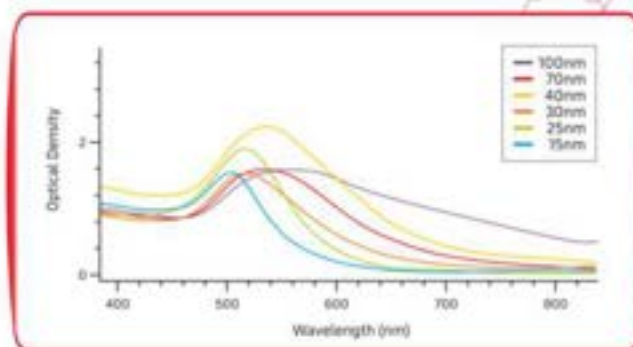
Iron oxide nanoparticles of magnetite ( $\text{Fe}_3\text{O}_4$ ) in the size range of 27–35nm. The nanoparticles exhibit higher surface area to mass ratio and are associated with unique properties and behavior, such as superparamagnetism, strong magnetism, and a higher binding affinity to biological macromolecules. Manufactured using proprietary and patented green technology, the nanoparticles are biocompatible, non-toxic and leave no negative environmental footprint.

### APPLICATIONS IN LIFE SCIENCES

- › DNA and protein functionalization
- › In cancer diagnostics, for the detection of various biomarkers
- › In lateral flow immunoassays such as home pregnancy kits
- › Useful as probes for transmission electron microscopy
- › In colorimetric sensors to identify presence of pathogens in food
- › As substrate in surface enhanced Raman spectroscopy for the detection of proteins, pollutants, and other molecules label-free
- › In photodynamic therapy to irradiate targeted tumors

## PRODUCT DETAILS

- **Form** : Colloidal dispersion
- **Colour** : Variable according to particle size
- **Average particle size** : 15-100nm (TEM validated)
- **Stability** : Atleast 6 months
- **Storage** : 4°C, protected from light; do not freeze
- **Catalogue No** : MG22\_Au-1



**Fig:** UV-Vis spectra for gold nanoparticles

## **X**pressNano **Silver Nanoparticles**

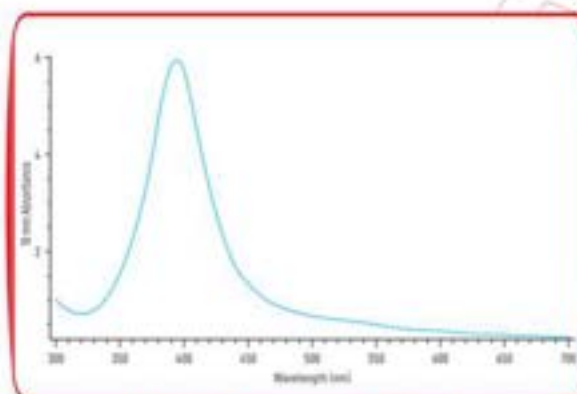
Silver nanoparticles with their unique physicochemical properties coupled with multi-functional bio-applications are the most vital among metallic nanoparticles and are of much relevance in areas of research, pharmaceuticals and commercial industries.

## RESEARCH APPLICATIONS

- Broad-spectrum antimicrobial, antifungal & antiviral activity
- In bio-imaging, chemical and optical sensing
- In catalysis and as anti-reflection coatings
- In fabrication of thin-film transistor electrodes
- In circuit boards
- As coating in medical devices and filters of water purifiers
- In dentistry
- Promising candidate for various biomedical applications

## PRODUCT DETAILS

- **Form** : Dispersion in H<sub>2</sub>O/ aqueous sodium citrate
- **Colour** : Light yellow
- **size** : 15.28±1.7nm
- **Stability & Storage** : Stable when stored at 4°C, protected from light; do not freeze.
- **Catalogue No** : MG22 AgNP\_1 (Bare silver nanoparticle)  
MG22 AgNP\_2 (PVP-stabilized silver nanoparticles)  
MG22 AgNP\_3 (Citrate-stabilized silver nanoparticles)



**UV-vis Spectra:  $\lambda_{max}$  395nm**



## Agarose Beads



### MNP - Agarose Beads

MNP incorporated agarose beads which have a size range of 40-75 $\mu$ m, 75-150 $\mu$ m, 150-300 $\mu$ m. Can be used for immunoprecipitation/pulldown assay after functionalization of MNP agarose beads. Easy separation of MNP agarose bound molecules is possible using their magnetic property.

#### APPLICATIONS IN LIFE SCIENCES

- › Immunoprecipitation
- › Protein conjugation
- › Biomolecular separation

#### PRODUCT DETAILS

- › **Form** : 2% MNP Incorporated Agarose Beads In Water
- › **Colour** : Dark brown
- › **Size** : 40-75 $\mu$ m, 75-150 $\mu$ m, 150-300 $\mu$ m
- › **Stability** : 6 months
- › **Storage** : Stable at RT, keep at 4°C for longer storage
- › **Catalogue No** : MG23\_MNP-AgB-1



### Agarose Beads

MagGenome offers a wide range of beaded agarose with different concentration having size range 40-200  $\mu$ m. These agarose beads can be used for size exclusion chromatography for separating biomolecules based on their size. These products are available in a large scale according to industrial demand.

#### APPLICATIONS IN LIFE SCIENCES

- › Size Exclusion Chromatography
- › Protein immobilization
- › Activation of beads with specific functional groups for use in affinity chromatography

#### PRODUCT DETAILS

- › **Form** : 2%, 4%, 6% Agarose Beads In Water
- › **Colour** : White
- › **Size** : 40-200 $\mu$ m
- › **Stability** : 6 months
- › **Storage** : Stable at RT, keep at 4°C for longer storage
- › **Catalogue No** : MG23\_AgB-1

## Protein Purification Beads

### XpressAffinity Protein A Beads

XpressAffinity Protein A provides a fast and convenient method for affinity based isolation of proteins using the magnetic method. Protein A is immobilized on magnetic nanoparticles (size range: 10-20nm) using a patented technology. The blocking step during preparation of the resin minimizes non-specific binding of other contaminating proteins present in the biological samples and also minimizes leaching of the immobilized protein from the matrix. The product is provided as 10mg magnetic particles in 1 ml of phosphate buffer (pH 8) containing 0.05% Tween-20 and 0.05% sodium azide. Recommended storage temperature is 4°C. Do not freeze the product.

#### HIGHLIGHTS

- High binding capacity due to large surface area of nanoparticles
- Strong magnetic properties due to the lack of polymeric coating on the particles
- No centrifugation or packing of columns is involved
- No loss of particles during processing



### XpressAffinity Protein G Beads

XpressAffinity Protein G provides a fast and convenient convenient method for affinity based isolation of proteins using the magnetic method. Protein G is immobilized on magnetic nanoparticles (size range: 10-20nm) using a patented technology. The blocking step during preparation of the resin minimizes non-specific binding of other contaminating proteins present in the biological samples and also minimizes leaching of the immobilized protein from the matrix. The product is provided as 10mg magnetic particles in 1 ml of phosphate buffer (pH 8) containing 0.05% Tween-20 and 0.05% sodium azide. Recommended storage temperature is 4°C. Do not freeze the product.

#### HIGHLIGHTS

- High binding capacity due to large surface area of nanoparticles
- Strong magnetic properties due to the lack of polymeric coating on the particles
- No centrifugation or packing of columns is involved
- No loss of particles during processing





## **XpressAffinity** Protein A & G Beads

XpressAffinity Protein A&G provides a fast and convenient method for affinity based isolation of proteins using the magnetic method. Protein A and Protein G are immobilized on magnetic nanoparticles (size range: 10-20nm) using a patented technology. The blocking step during preparation of the resin minimizes non-specific binding of other contaminating proteins present in the biological samples and also minimizes leaching of the immobilized proteins from the matrix. The product is provided as 10mg magnetic particles in 1 ml of phosphate buffer (pH 8) containing 0.05% Tween-20 and 0.05% sodium azide. Recommended storage temperature is 4°C. Do not freeze the product.

### HIGHLIGHTS

- High binding capacity due to large surface area of nanoparticles
- Strong magnetic properties due to the lack of polymeric coating on the particles
- No centrifugation or packing of columns is involved
- No loss of particles during processing



## **XpressAffinity** Glutathione Beads

XpressAffinity Glutathione (GSH) provides a fast and convenient method for affinity based magnetic purification of GST-tagged proteins. GSH is immobilized on magnetic nanoparticles (size range: 10-20nm) using a patented technology. The product is provided as 10mg magnetic particles in 1 ml of 20% ethanol. Recommended storage temperature is 4°C.

### HIGHLIGHTS

- High binding capacity due to large surface area of nanoparticles
- Strong magnetic properties due to the lack of polymeric coating on the particles
- No centrifugation or packing of columns is involved
- No loss of particles during processing



## Product Catalogue

To view full product details or to order the kits  
visit [www.maggenome.com/products](http://www.maggenome.com/products) or [www.maggenome.com/support](http://www.maggenome.com/support)

S NO	Catalogue	Item Description	Item Unit
<b>RNA Extraction Kits</b>			
1	MG21Vrna-50	XpressRNA Viral Kit	50 rxn
2	MG21Vrna-250	XpressRNA Viral Kit	250 rxn
3	MG23Rpl-50	XpressRNA Plant Kit	50 rxn
4	MG23Rpl-250	XpressRNA Plant Kit	250 rxn
5	MG20Rcl-50	XpressRNA Cell Kit	50 rxn
6	MG20Rcl-250	XpressRNA Cell Kit	250 rxn
<b>DNA Extraction Kits</b>			
7	MG17BI-S50	XpressDNA Blood Mini Kit	50 rxn
8	MG17BI-S250	XpressDNA Blood Mini Kit	250 rxn
9	MG18BI-M20	XpressDNA Blood Midi Kit	20 rxn
10	MG18BI-X20	XpressDNA Blood Mixi Kit	20 rxn
11	MG19DBS-50	XpressDNA Dried Blood Spot Kit	50 rxn
12	MG19DBS-250	XpressDNA Dried Blood Spot Kit	250 rxn
13	MG17Ti-50	XpressDNA Tissue Kit	50 rxn
14	MG17Ti-250	XpressDNA Tissue Kit	250 rxn
15	MG18Ba-50	XpressDNA Bacteria Kit	50 rxn
16	MG18Ba-250	XpressDNA Bacteria Kit	250 rxn
17	MG20Mtb-50	XpressDNA Mycobacterium Kit	50 rxn
18	MG20Mtb-250	XpressDNA Mycobacterium Kit	250 rxn
19	MG18PI-50	XpressDNA Plasmid Mini Kit	50 rxn
20	MG18PI-250	XpressDNA Plasmid Mini Kit	250 rxn
21	MG18PI-M20	XpressDNA Plasmid Midi Kit	20 rxn
22	MG20So-50	XpressDNA Soil Kit	50 rxn
23	MG20So-250	XpressDNA Soil Kit	250 rxn
24	MG20PIL-50	XpressDNA Plant Kit	50 rxn
25	MG20PIL-250	XpressDNA Plant Kit	250 rxn
26	MG20St-50	XpressDNA Stool Kit	50 rxn
27	MG20St-250	XpressDNA Stool Kit	250 rxn
28	MG22ML-50	XpressDNA Milk Kit	50 rxn
29	MG22ML-250	XpressDNA Milk Kit	250 rxn
30	MG22WA-50	XpressDNA Water Kit	50 rxn
31	MG22WA-250	XpressDNA Water Kit	250 rxn
32	MG23FU-50	XpressDNA Fungal Kit	50 rxn
33	MG23FU-250	XpressDNA Fungal Kit	250 rxn
34	MG22AL-50	XpressDNA Algae Kit	50 rxn
35	MG22AL-250	XpressDNA Algae Kit	250 rxn



S NO	Catalogue	Item Description	Item Unit
36	MG20Pab-50	XpressDNA Pathogen Blood Kit	50 rxn
37	MG20Pab-250	XpressDNA Pathogen Blood Kit	250 rxn
38	MG20Pau-50	XpressDNA Pathogen Urine Kit	50 rxn
39	MG20Pau-250	XpressDNA Pathogen Urine Kit	250 rxn
<b>Cleanup &amp; Size Selection</b>			
40	MG20Pcr-2	XpressPure Beads - PCR Cleanup Kit	2 ml
41	MG20Pcr-20	XpressPure Beads - PCR Cleanup Kit	20 ml
42	MG22XPNGS-5	XpressPure Size Select - NGS	5 ml
43	MG22XPNGS-60	XpressPure Size Select - NGS	60 ml
44	MG22XPNP-5	XpressPure Size Select - HMW	5 ml
45	MG22XPNP-60	XpressPure Size Select - HMW	60 ml
<b>Sample Collection Kits</b>			
46	MG19STBC	MagStable DNA Saliva Collection Kit	1 qty
47	MG20MTM-2	Xpress Molecular Transport Medium	1 box
48	MG22SWBC	MagStable DNA Swab Collection Kit	1 box
49	MG22SSB	MagStable Stool Collection Kit	1 qty
50	MG20Vtm-5	MagGenome Viral Transport Medium	1 box
<b>Magnetic Stand</b>			
51	MG17MS-6	Xpress Magnetic Stand 6	6 well
52	MG17MS-12	Xpress Magnetic Stand 12	12 well
53	MG17MS-16	Xpress Magnetic Stand 16	16 well
54	MG17MS-24	Xpress Magnetic Stand 24	24 well
55	MG17MS-96	Xpress Magnetic Stand 96	96 well
<b>DNA Automation Kits</b>			
56	MG22AMB-96	XpressAutoMag Blood DNA Kit with Consumables	96 rxn
57	MG22AMB-480	XpressAutoMag Blood DNA Kit with Consumables	480 rxn
58	MG22AMS-96	XpressAutoMag Saliva DNA Kit with Consumables	96 rxn
59	MG22AMS-480	XpressAutoMag Saliva DNA Kit with Consumables	480 rxn
60	MG22AMT-96	XpressAutoMag Tissue DNA Kit with Consumables	96 rxn
61	MG22AMT-480	XpressAutoMag Tissue DNA Kit with Consumables	480 rxn
62	MG22AMB-96	XpressAutoMag Blood DNA Kit	96 rxn
63	MG22AMB-480	XpressAutoMag Blood DNA Kit	480 rxn
64	MG22AMS-96	XpressAutoMag Saliva DNA Kit	96 rxn
65	MG22AMS-480	XpressAutoMag Saliva DNA Kit	480 rxn
66	MG22AMT-96	XpressAutoMag Tissue DNA Kit	96 rxn
67	MG22AMT-480	XpressAutoMag Tissue DNA Kit	480 rxn
<b>Nucleic Acid Extractor</b>			
68	MG22NAEI96	XpressAutomag Nucleic Acid Extraction Instrument	1 qty
<b>Enzymes</b>			
69	MG19RA-1	RNaseA solution (10 mg/ml) 1ml	1 ml
70	MG19RA-5	RNaseA solution (10 mg/ml) 1ml X 5	5 ml
71	MG19PK-1	Proteinase K (20 mg/ml) 1ml	1 ml
72	MG19PK-5	Proteinase K (20 mg/ml) 1ml X 5	5 ml

S NO	Catalogue	Item Description	Item Unit
73	MG19LY-1	Lysozyme 1 ml	1 ml
74	MG19LY-5	Lysozyme 1 ml X 5	5 ml
75	MG21CRNA-1	Carrier RNA 1ml	1 ml
76	MG21CRNA-5	Carrier RNA 5ml	5 ml
<b>Lab Essentials</b>			
77	MG19DS-100	Nuclease Free Water	100 ml
78	MG19DS-250	Nuclease Free Water	250 ml
79	MG19DS-500	Nuclease Free Water	500 ml
80	MG19MGN-1	MagGreen DNA loading buffer	1 ml
81	MG19MGN-5	MagGreen DNA loading buffer	5 ml
82	MG20TE-100	Xpress-TE Buffer	100 ml
83	MG20TE-500	Xpress-TE Buffer	500 ml
<b>Nanoparticle</b>			
84	MG23MNP(15)B MG23MNP(32)B	XpressNano Iron Oxide Nanoparticle (Bare)	10/25/50/100 ml
85	MG23MNP(15) Amine	XpressNano Iron Oxide Nanoparticle (Amine functionalized)	10/25/50/100 ml
86	MG23MNP(15) Citrate	XpressNano Iron Oxide Nanoparticle (Citrate functionalized)	10/25/50/100 ml
87	MG23MNP(15) CMC	XpressNano Iron Oxide Nanoparticle (CMC functionalized)	10/25/50/100 ml
88	MG23MNP(15) PEG	XpressNano Iron Oxide Nanoparticle (PEG functionalized)	10/25/50/100 ml
89	MG23AuNP(16)	XpressNano Gold Nanoparticle	1/5/25/100 ml
90	MG23AuNP(25)	XpressNano Gold Nanoparticle	1/5/25/100 ml
91	MG23AuNP(30)	XpressNano Gold Nanoparticle	1/5/25/100 ml
92	MG23AuNP(40)	XpressNano Gold Nanoparticle	1/5/25/100 ml
93	MG23AuNP(70)	XpressNano Gold Nanoparticle	1/5/25/100 ml
94	MG23AuNP(90)	XpressNano Gold Nanoparticle	1/5/25/100 ml
95	MG23AgNP(16)B	XpressNano Silver Nanoparticle (Bare)	5/10/25/50 ml
96	MG23AgNP(16)Cit	XpressNano Silver Nanoparticle (Citrate Coated)	5/10/25/50 ml
97	MG23AgNP(16)PVP	XpressNano Silver Nanoparticle (PVP Stabilized)	5/10/25/50 ml
<b>Agarose Bead</b>			
98	MG23_MNP-AgB-10	XpressMag MNP - Agarose Beads	10 ml
99	MG23_MNP-AgB-25	XpressMag MNP - Agarose Beads	25 ml
100	MG23_AgB-10	XpressMag - Agarose Beads	10 ml
101	MG23_AgB-25	XpressMag - Agarose Beads	25 ml
<b>Protein Purification Beads</b>			
102	MG17PA-1	Xpress Affinity Protein A Beads	1 ml
103	MG17PA-5	Xpress Affinity Protein A Beads	5 ml
104	MG17PG-1	Xpress Affinity Protein G Beads	1 ml
105	MG17PG-5	Xpress Affinity Protein G Beads	5 ml



S NO	Catalogue	Item Description	Item Unit
106	MG17PAG-1	Xpress Affinity Protein A & G Beads	1 ml
107	MG17PAG-5	Xpress Affinity Protein A & G Beads	5 ml
108	MG17GSH-1	XpressAffinity Glutathione Bead	1 ml
109	MG17GSH-5	XpressAffinity Glutathione Bead	5 ml
<b>Accessory Products</b>			
110	MGTP-96	Tip Comb 96-KingFisher/Himedia/ZYBIO/Genetix	100 Nos
111	MG20DWV-2.2	2.2ul Deep Well Plate KingFisher/Himedia/ZYBIO/Genetix	50 Nos
112	MG20DWV-0.5	0.2/0.5ul Deep Well Plate KingFisher/Himedia/ZYBIO/Genetix	50 Nos
113	MG20Rbcl-50	Xpress Blood RBC Lysis buffer	50 ml
114	MG20Rbcl-100	Xpress Blood RBC Lysis buffer	100 ml
115	PS-1000	MagNa Mix™ Magnetic Nanoparticles	1 litre
116	PS-002	MagNa Mix™ Magnetic Nanoparticles	250 ml
117	PS-001	MagNa Mix™ Magnetic Nanoparticles	10 ml



The supporting documents such as Kit Instruction Manual, Quick Reference Guide, Certificate of Analysis and MSDS are available and can be downloaded from our website [www.maggenome.com/resources](http://www.maggenome.com/resources)




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