Discover the World of Gut Microbiome

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MP BIOMEDICALS

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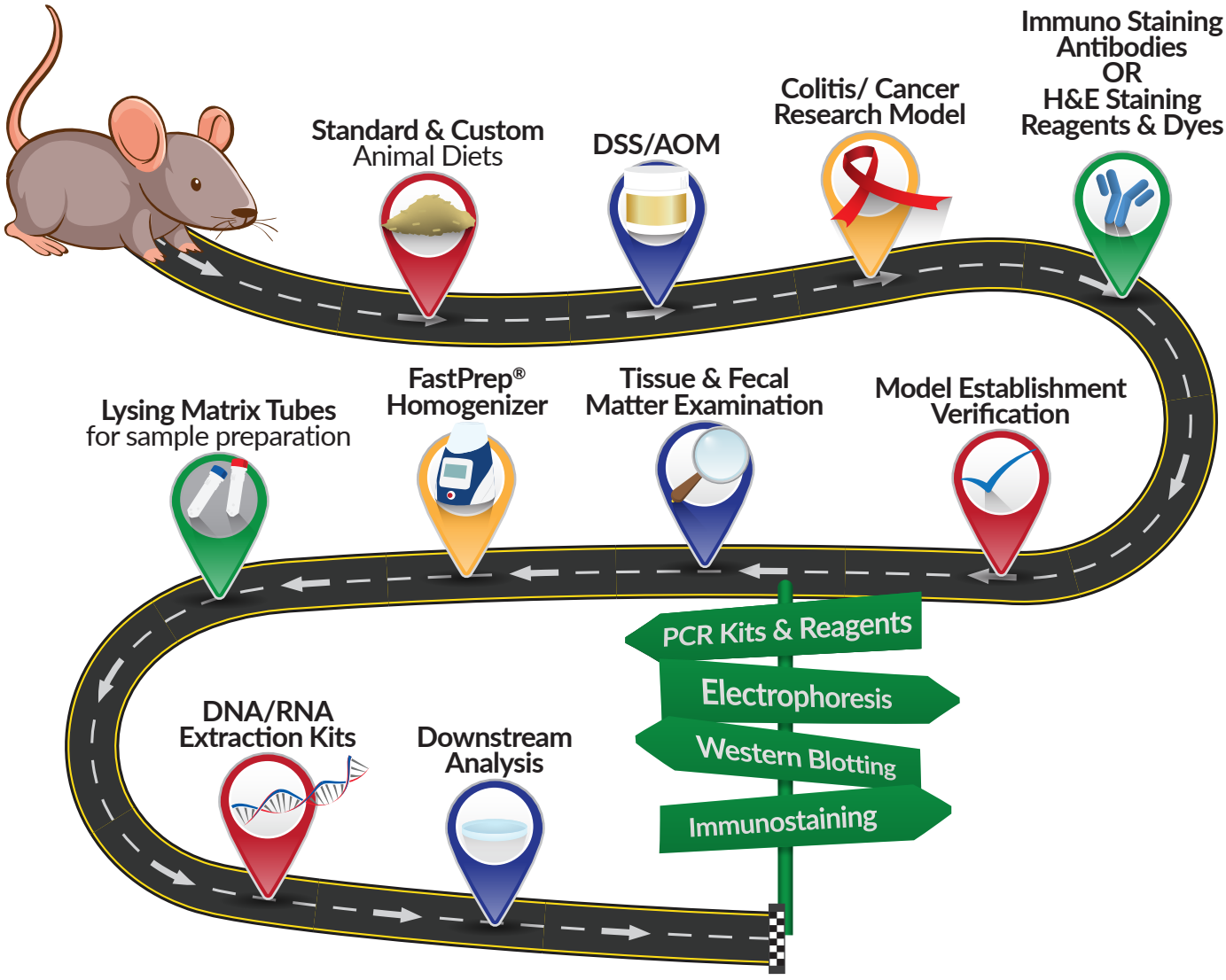
The Inner Ecosystem: Impact of Gut Microbiome in Health and Metabolism

Gut Microbiome has been studied extensively due to the profound importance to the human body and how we interact with the environment. It plays a crucial role in physiological characteristics, drug development, pathogenic micro-inhabitants, to even modulating our mood and stress. While the interest in this field of study increases exponentially, challenges persist in NGS sequencing due to problems in data analysis, library preparation, and most importantly, sample preparation.

Our solutions to your gut microbiome research

Discover the workflow to unravel the intestinal microbial community!

From animal dietary planning to downstream sequence and analysis, MP Biomedicals ensures a complete guide to your gut microbiome studies. Understanding and using the right tools for intestinal microbial research has been the most important way to delve into the human microbiome. Whether it is disease modeling, clinical research, or simply to just study host-microbiome interactions, MP Biomedicals provides a solution with our products of diet, instrument, reagent, and kit to help you on your path to discovery.



Preparing your Colitis Model

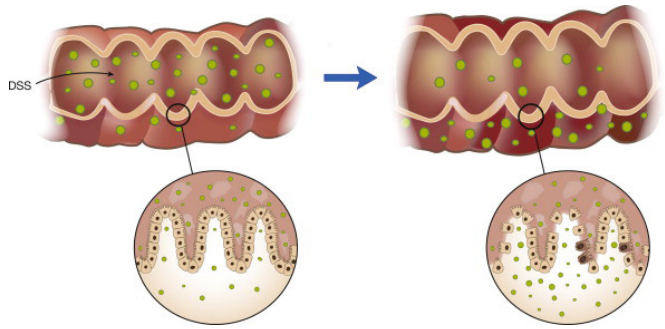
When starting a colitis model, one of the first considerations that often arises is the use of an IBD (Inflammatory Bowel Disease) model. Due to its straightforward implementation and similarity to human conditions, IBD models have gained widespread acceptance as a practical starting point.

Dextran sulfate sodium (DSS) is one of the most common and effective compounds used for inducing ulcerative colitis in animals. The DSS colitis model has also been used extensively to study colon cancer developing in relation to colonic inflammation, such as that occurring in patients with long-standing ulcerative colitis.

Another agent that is commonly administered along with the DSS is AOM (Azoxymethane). To create colorectal cancer that is driven by inflammation, AOM is often initiated before DSS. The synergy of the two creates a model benefitting researchers in understanding the genetic mutations and pathways leading to the development of tumors.

Key Features of MP Biomedicals' Dextran Sulfate Sodium

- Gold standard colitis grade
- More than 10,000 reviewed publications
- Highest sulfur content – 19%
- Highest chirality +/- 104° of specific rotation
- Lowest pH – 6.2 at 1% solution



DSS is directly toxic to epithelial cells, causing loss of the surface layer of epithelial cells, enabling gut microorganisms and their products to enter the lamina propria, and stimulating an inflammatory response.

Helpful Tips

DSS-supplemented drinking water:

To make 500 mL of a 2% DSS solution, dissolve 10 g DSS powder in 500 mL of autoclaved drinking water. Store at 4 °C until use.

AOM Solution:

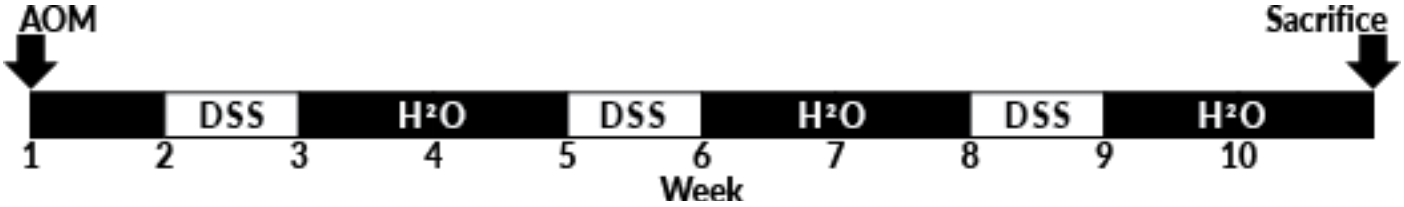
Dissolve AOM in WFI (Water for Injection) to obtain a 10 mg/mL stock solution. Aliquot and freeze at -20 °C. Avoid repeated freeze-thaw cycles. On the day of use, thaw aliquot and dilute 1/10 with sterile saline.

Order Information

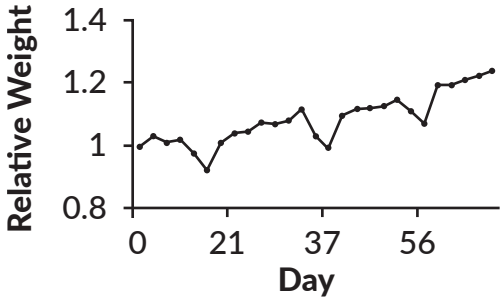
Product Name	Size	Catalogue
Dextran Sulfate Sodium Salt (DSS) Colitis Grade (36,000–50,000 MW)	25 g	0216011025
	100 g	0216011080
	1 kg	0216011091
Azoxymethane, Colonic Carcinogen	25 mg	0218397125
	100 mg	0218397180

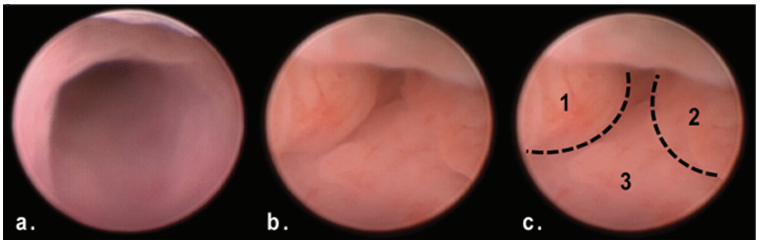
Modeling Colitis-Associated Cancer with Azoxymethane (AOM) and Dextran Sulfate Sodium (DSS)

Schematic of AOM and DSS administration



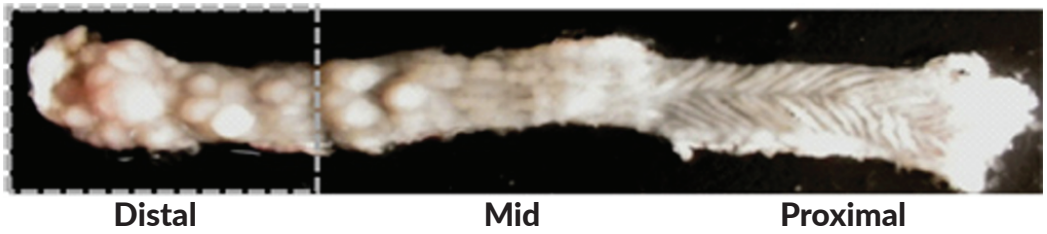
Mouse weight and murine endoscopy of AOM/DSS treatment



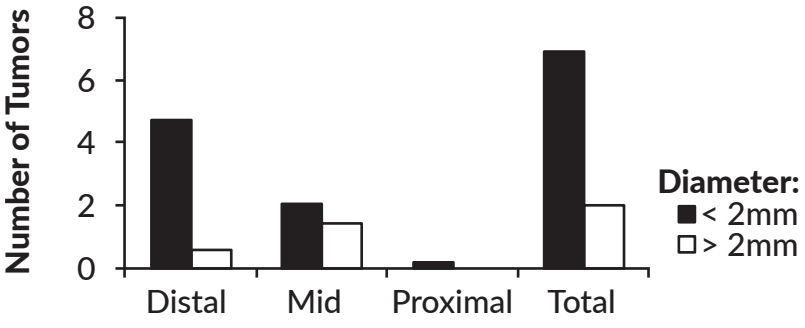


Mouse weight decreased 5 – 10% at every DSS cycle (left). Multiple polypoid masses obstructing the lumen of the distal colon (b, c) in comparison to the normal colon (a) (right).

Mouse colon illustration and tumor distribution treated with AOM/DSS



Tumor Distribution

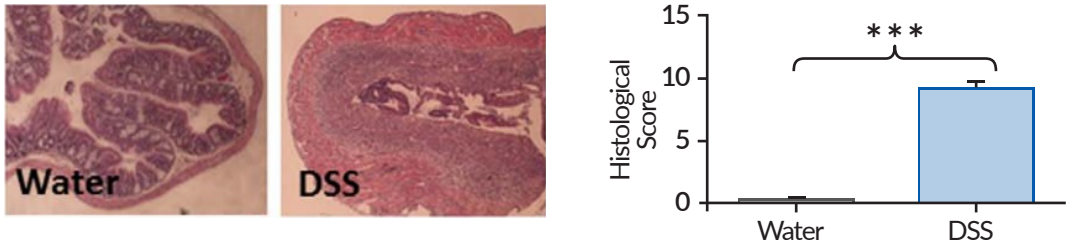


Tumor Location in Colon

Mouse colon view shows the tumor in distal, mid, and proximal regions (top). Distribution of the average number of tumors per mouse treated with AOM/DSS for tumors larger or smaller than 2 mm (bottom).

Reference: https://pubmed.ncbi.nlm.nih.gov/22990604/

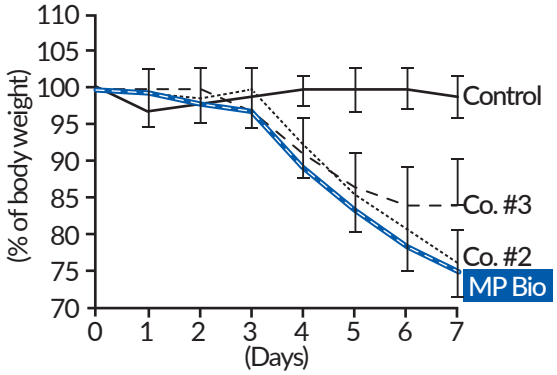
Dextran Sodium Sulfate (DSS) Induces Colitis in Mice by Forming Nano-Lipocomplexes with Medium-Chain-Length Fatty Acids in the Colon



Hematoxylin-stained colonic sections of mice treated with DSS by Laroui et al., indicates a successful induction of Colitis with associated histological scores (P<0.001)

Reference: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0032084

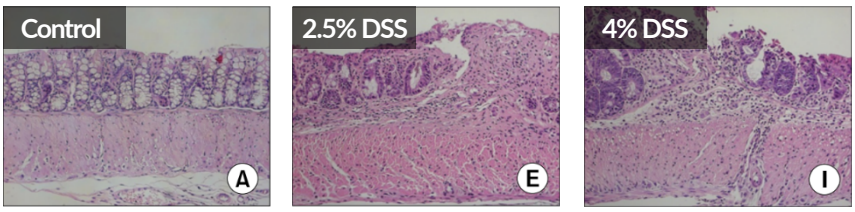
The Severity of Dextran Sodium Sulfate-Induced Colitis Can Differ Between Dextran Sodium Sulfate Preparations of the Same Molecular Weight Range



A comparative study reported by Bamba et al., demonstrating that DSS from MP Bio outperforms other competitors in colitis induction by administrating DSS via drinking water at a concentration of 2.0% (w/w) for 7 days.

Reference: https://pubmed.ncbi.nlm.nih.gov/21901260/

Adequate Dextran Sodium Sulfate-induced Colitis Model in Mice and Effective Outcome Measurement Method



Histopathologic findings in the colonic mucosa based on hematoxylin and eosin (H&E) staining. (A) normal colonic mucosa in the control group for the ascending colon, AC. (E) 2.5% DSS on the colonic mucosa after five weeks (I) colonic mucosa with 4% DSS after nine weeks in the ascending colon, AC. The increased dosage of DSS indicated a successful study model for DSS-induced colitis model.

Reference: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4699753/

More than 10000+ scientific publications have used MP Biomedicals' Dextran Sulfate Sodium Salt!

Standard Diet & Controlled Diet

Maintaining consistency in animal diet is the key to success in a reproducible study. We develop our animal diets with the best quality and freshness, as each bite is only formulated upon an order received. Here at MP Biomedicals, you can find a range of standard, obesity-focused, liver-specific, or customizable diet tailored to meet your needs.

Features:

- **Best Quality:** MP Bio animal diets and dietary components are of the finest quality and the most uniform of commercially available diets. MP Bio operates under certified quality systems, with production sites regulated under ISO9001:2015.
- **Customizable:** MP Bio has over five decades of experience in customized animal research diets and more than 15,000 successful custom formulations.
- **Fresh:** All animal diets are freshly formulated upon placing your order.
- **Variety:** MP Bio animal diets offer selections in both pelleted and powdered form and the flexibility to customize pellet size and color.

Order Information

Product Name	Catalogue No.
Standard Animal Research Diet	
Fat Diet With 60 kcal%	0296044910
Fat Diet With 10 kcal% (Control Diet for Fat Diet with 60kcal%)	0296045410
Fat Diet With 45 kcal%	0296045210
Fat Diet With 10 kcal% (Control Diet for Fat Diet with 45kcal%)	0296045310
4% high salt rodent diet	0296046210
8% high salt rodent diet	0296046310
60 kcal% High fat diet with 8% NaCl	0296046410
40 kcal% High fat diet with 1.25% Cholesterol	0296046610
40 kcal% High fat diet with 1.25% Cholesterol and 0.5% Sodium Cholate	0296046710
AIN-76A Diet with 0.2% Adenine	0296046810
AIN-76A Diet with 0.2% Adenine and 0.8% P	0296046910
AIN-76A Diet with 0.2% Adenine and 1.8% P	0296047010
Methionine & Choline Deficient Diet (Modified, Pelleted)	0296045010
Methionine & Choline Control Diet (Modified, Pelleted)	0296045110
AIN-93G Diet With 5% PO and 2.5% UA	0296046510
Atherogenic Diet Modified	0296045510
Atherogenic Control Diet Modified	0296045610
Specialty Research Diets	
AIN-93M Diet	0296039710
AIN-93G Diet	0296039910
AIN-76 Semipurified Diet	0290545310
AIN-76A Semipurified Diet	0296009710
AIN-76C Semipurified Diet	02960296
Mouse Diet, Purified	02904606

Fecal Sample Disruption with FastPrep® Instruments

Features

- Beads and tubes available in all sizes for maximum efficiency of sample disruption
- No cross contamination in encapsulated tubes
- High-speed bead-beating technology ensuring easy grinding, lysing, and homogenizing your precious samples.
- Over 12,000+ publications and reviews for validation.

FastPrep Instruments

FastPrep-96™ Pro

Discover the future of high-throughput homogenization

- **Intuitive Touchscreen for Effortless Operations:** user friendly touchscreen simplifies operation
- **Real-Time Monitoring with LED Indicators for easy run monitoring**
- **Flexible:** Ensures maximized quality and yield of DNA, RNA, Proteins, and other biomolecules from cells and tissues.

FastPrep-96™

High throughput sample grinding

- **High Throughput:** Process up to 192 samples simultaneously in 2 x 96 deep well plates.
- **Exceptional Versatility:** Easily interchangeable adapters available for 2 x 96 deep well plates, 96 x 2 mL tubes, 48 x 4.5 mL tubes, 20 x 15 mL tubes, 8 x 50 mL tubes and 2 x 250 mL bottles.
- **True Linear Motion:** Eliminates the need to reorient plates mid-cycle.

FastPrep-24™ 5G

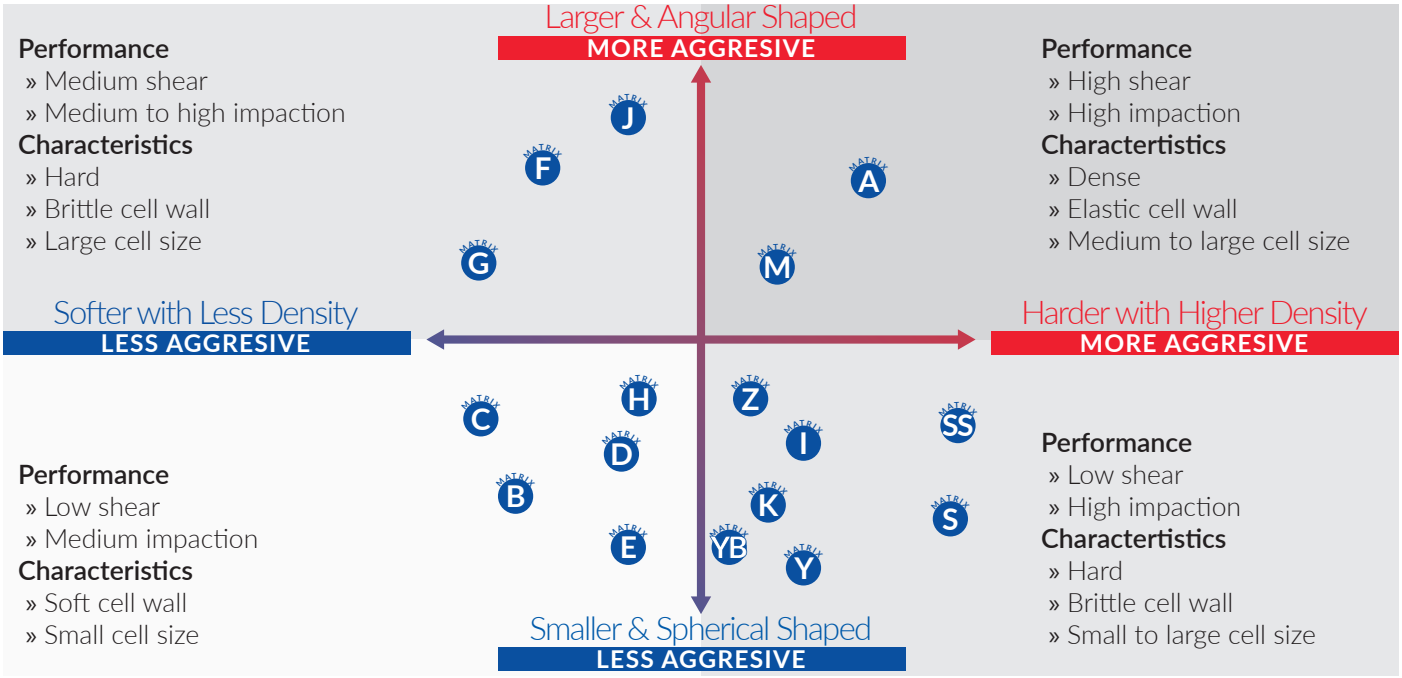
The most advanced sample prep system available

- **Powerful:** Highest speed available (10 m/s offering the best performance for the Lysis of the most resistant samples.
- **Intuitive:** Interactive user-friendly interface and touchscreen with more than 70 pre-programmed protocols.
- **Flexible**: Easily interchangeable adapters to process any sample size (2 mL, 4.5 mL, 5mL, 15 mL or 50 mL tubes) at cryogenic or room temper

Various Lysing Matrix Tailored to Your Needs

Sample Type	Lysing Matrix																
Animal & Human Tissues	A	B	C	D	E	F	G	H	I	J	K	M	S	SS	Y	YB	Z
Soft Tissues (Lung, Breast, Kidney, Heart, Intestine, Muscle, Spleen, Liver, Brain)	•			•									•	•			•
Skin	•			•													
Nail													•				
Tail, Ear	•												•				
Vascular tissue	•			•													•
Hair													•				
Bone	•										•	•	•	•			
Tumor	•												•				
Mammalian cell	•			•													•
Infected tissue (isolation of viruses or virus)												•					
Microorganisms	A	B	C	D	E	F	G	H	I	J	K	M	S	SS	Y		
Bacteria (gram + and -)	•	•				•				•						•	
Yeast, Mold	•		•			•	•				•				•	•	
Bacterial & Fungal spore	•	•				•	•		•	•	•			•		•	
Algae	•		•				•								•	•	
Virus	•	•														•	
Environmental Samples	A	B	C	D	E	F	G	H	I	J	K	M	S	SS	Y		
Soil, Marine sediment, Rhizosphere, Manure, Compost, Sludge, Feces, Wastewater					•		•	•	•							•	
Plant Tissues	A	B	C	D	E	F	G	H	I	J	K	M	S	SS	Y		
Leaf	•			•		•	•										•
Seed	•					•	•	•	•			•	•	•			
Root	•					•	•						•				
Needle	•					•	•					•	•				
Wood	•					•	•	•	•								
Stem, Flower	•			•		•	•										•
Insects & Worms	A	B	C	D	E	F	G	H	I	J	K	M	S	SS	Y		
Tick, Fly	•			•				•	•								•
Nematode	•		•	•													•
Bee, Mosquito	•			•													•

Lysing Matrix Properties



Case Study: Combination of FastPrep® and Lysing Matrix Significantly Increased the Yield of Extracted DNA

Comparison of DNA extraction kits for PCR-DGGE analysis of human intestinal microbial communities from fecal specimens

Merlin W Ariefdjohan et al.

Keywords

PCR-DGGE, feces extraction, intestinal bacterial fingerprint, 16S rRNA

Aim of Study

Determine which commercial kit works most effective in extracting DNA from human fecal samples and the ability of the PCR-DGGE technique to generate bacterial fingerprint profiles from the extracted DNA.

Samples

Fecal specimens from healthy volunteers aged 20 – 30 years.

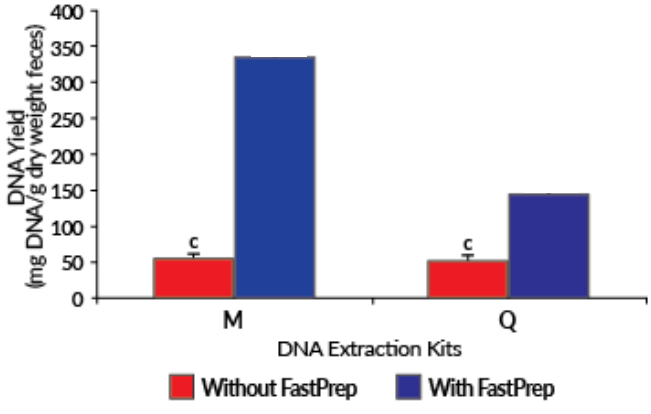
Sample type

Fecal sample from human

Material

FastPrep-24, FastDNA SPIN Kit, FastDNA SPIN Kit for Soil, Competitor Kits M and Q.

Result



Average DNA Yield obtained using kits M and Q. Comparison was made on the average DNA yield of these kits with and without the addition of vigorous mixing using the FastPrep® Instrument (n=3/kit; M, Mobio Ultra Clean Fecal DNA Isolation Kit; Q, QiAamp DNA Stool Mini Kit). Values for DNA yield were normalized based on the dry weight of the respective fecal sample. Means with different letter designation are significantly different ($P < 0.05$).

Order Information

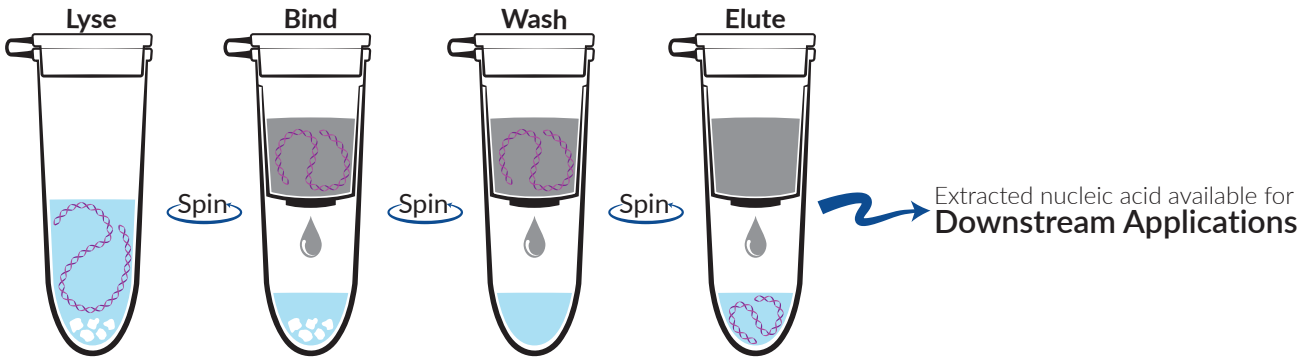
Product Name	Pack Size	Catalogue
FastPrep® Instruments		
FastPrep-24™ Classic	1 Unit	116004500
FastPrep-24™ 5G	1 Unit	116005500
FastPrep-96™ Pro	1 Unit	116014500
FastPrep-96™	1 Unit	116010500
SuperFastPrep-2™	1 Unit	116012500
Featured Lysing Matrix		
Lysing Matrix A	50 x 2 mL tubes	116910050
Lysing Matrix C	50 x 2 mL tubes	116912050
Lysing Matrix D	50 x 2 mL tubes	116913050
Lysing Matrix E	50 x 2 mL tubes	116914050
Interchangable FastPrep Adapters		
Fastprep-24™ and FastPrep-24™ 5G		
General Adapters		
BigPrep™ Sample Holder	2 x 50 mL	116002525
TeenPrep™ Sample Holder	12 x 15 mL	116002526
HiPrep™ Sample Holder	48 x 2 mL	116002527
TallPrep™ Sample Holder	24 x 4.5 mL	116002540
Metal Adapters for Fastprep-24™		
Metal MidiPrep™	18 x 5 mL	116002544
Metal Adapter for 15 mL	6 x 15 mL	116002558
Metal BigPrep™ Sample Holder	2 x 50 mL	116002547
Metal QuickPrep™ Sample Holder	24 x 2 mL	116002545
Metal TeenPrep™ Sample Holder	15 x 15 mL	116002546
FastPrep-96™		
BigFlex™ Sample Holder	8 x 50 mL	116010550
TeenFlex™ Sample Holder	24 x 15 mL	116010560
TallFlex™ Sample Holder	48 x 4.5 mL	116010580
QuickFlex™ Sample Holder	96 x 2 mL	116010570
LargeFlex	2 x 250 mL	116010590
Metal Adapters for FastPrep-96™ Pro		
Metal QuickFlex	96 x 2 mL	116010575
Metal Dual Plate	2 x 96 deep well plates	119696169S

Nucleic Acid Purification Kits

Principle of SPINeasy® Kit

Spin-column based purification utilizes solid-phase extraction method to bind and isolate DNA/RNA within column which contains silica filter membrane. Sample is homogenized and/or lysed using the optimized lysis buffer. Lysate is then mixed with ethanol to precipitate the nucleic acid.

Once the lysate is passed through the silica membrane by centrifugation, the spin column membrane is then washed to remove the remaining protein and salts residual. The nucleic acid is then eluted and ready to be used for various downstream applications.

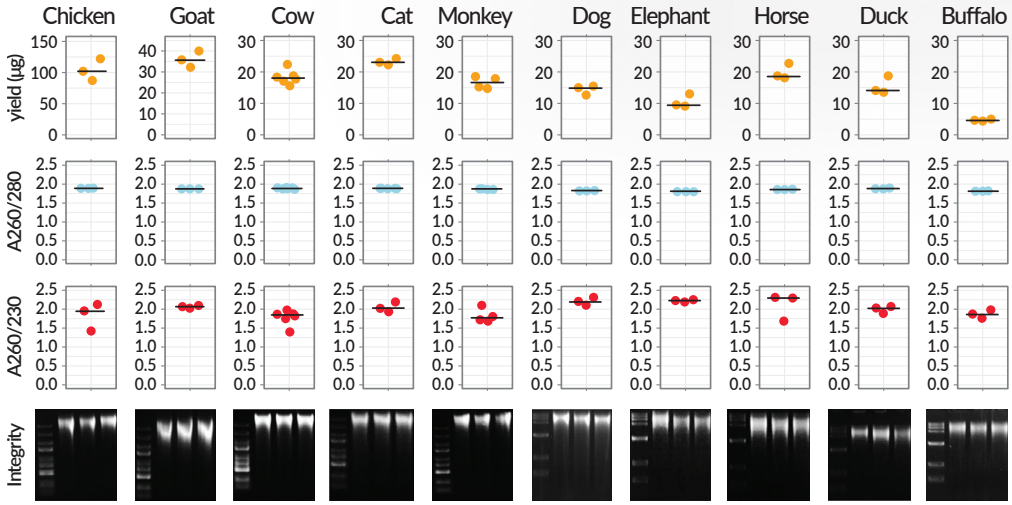


Four simple steps purification procedure to purify nucleic acid from sample using spin-column method.

SPINeasy® DNA Pro Kit for Feces

Features

- Newly formulated buffers to achieve better yield and purity of fecal DNA.
- Easy to handle and minimize any risk of contamination.
- Suitable for various types of feces samples.
- User friendly, suitable for any scale of experimental throughput.



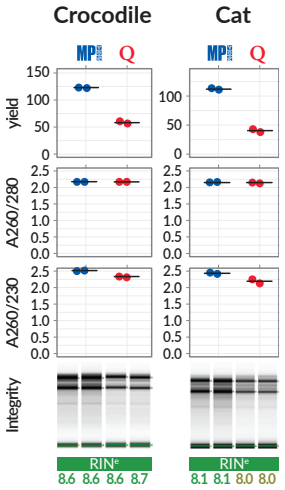
The **SPINeasy® DNA Pro Kit for Feces** is able to handle a wide range of fecal samples. The DNA yield, purity (A260/A280 and A260/A230 ratio) and integrity were assessed using spectrophotometer and DNA gel. Each dot of the plot represents a single extraction. The horizontal bars indicates the median value

SPINeasy® RNA Kit for Feces

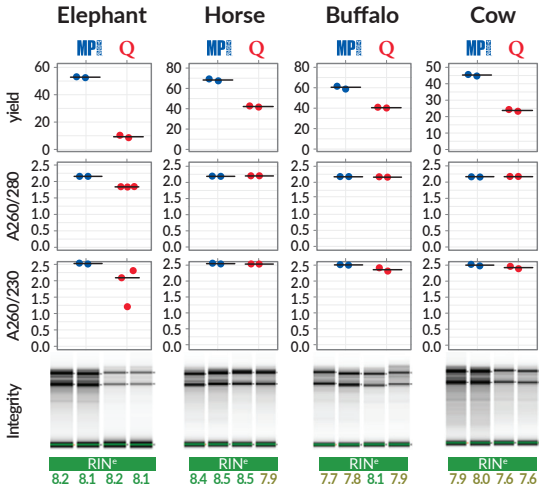
Features

- High volume sample capacity accommodating up to 250 mg providing the maximum yield and purity.
- 20 minutes processing time
- Optimal performance with RNA column and DNA removal ensuring no possible contamination.
- Feces sources available from carnivores, herbivores, to omnivores.

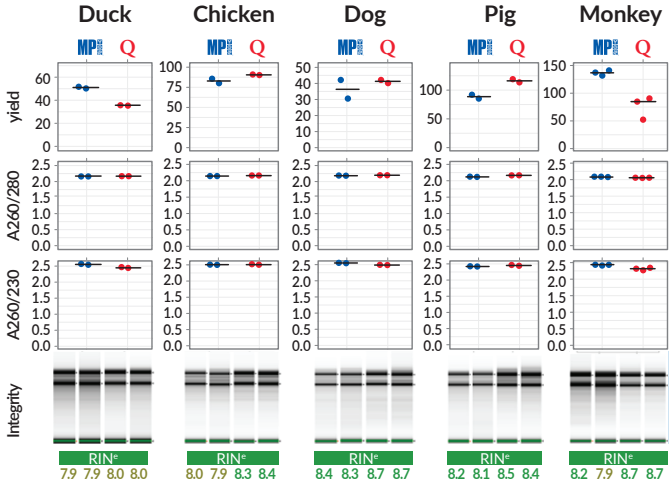
Carnivores



Herbivores



Omnivores



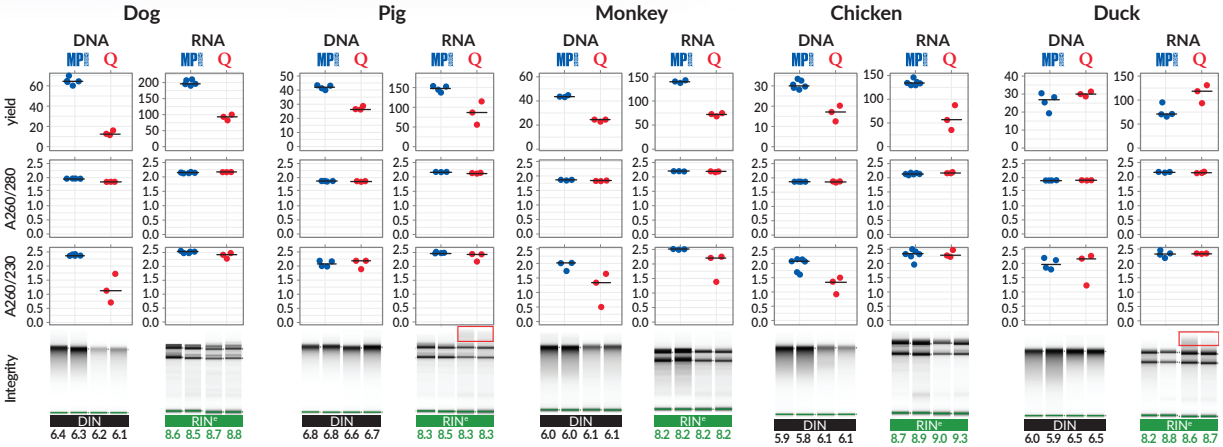
Eleven fecal sample types, grouped based on the animal diet, were processed using **SPINeasy® RNA Kit for Feces** and competitor Q kit. Yields and purity ratios (A260/A280 and A260/A230) were measured by spectrophotometer.

SPINeasy® DNA/RNA Kit for Feces

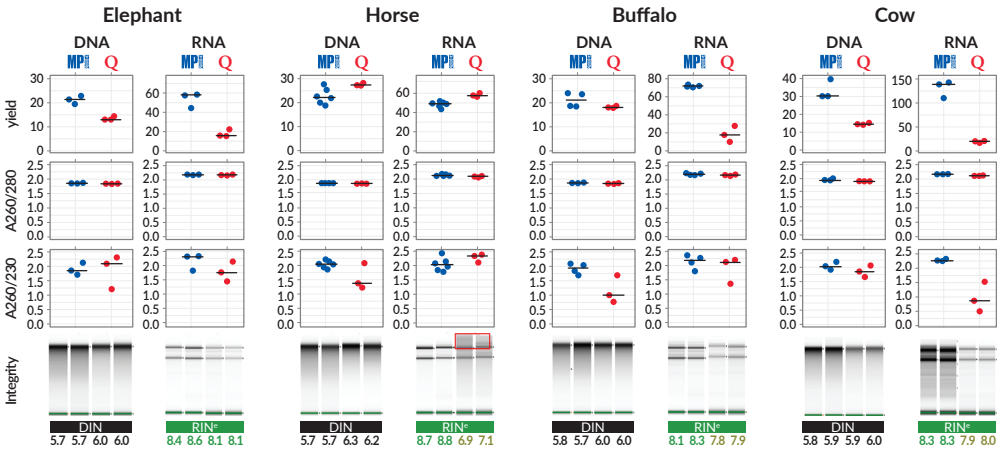
Features

- Innovative lysing matrix enabling the kit to be used on various types of feces samples.
- Uninterrupted workflow allowing simultaneous isolation of DNA and RNA from the same sample.
- High volume sample capacity (up to 250 mg), hence providing maximum yield and purity.
- Fast processing time - less than 45 minutes, or even faster with vacuum manifold.

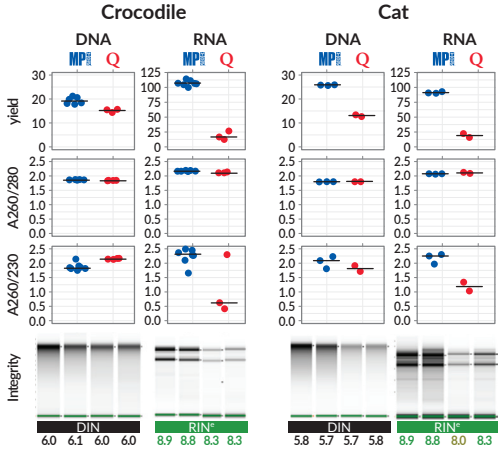
Omnivores



Herbivores



Carnivores

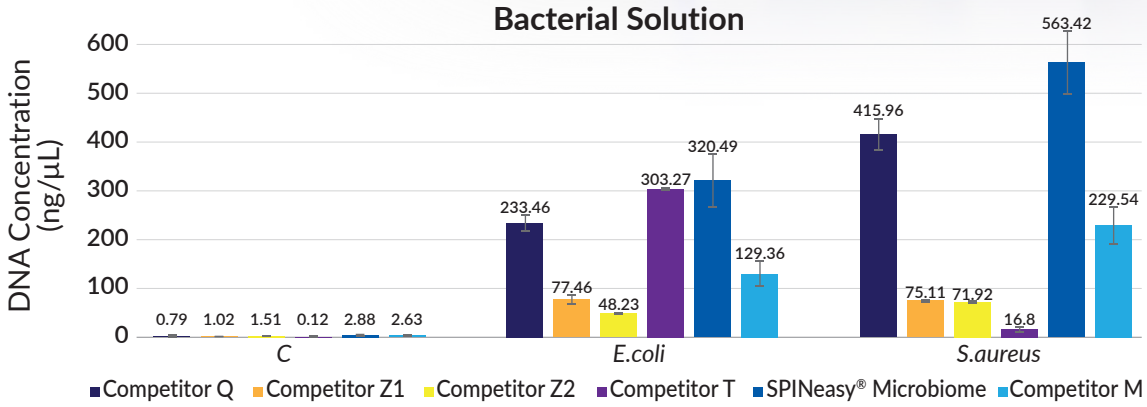


Eleven fecal sample types were processed using **SPINeasy® DNA/RNA Kit for Feces** and competitor Q kit. Yield and purity ratios (A260/A280 and A260/A230) were measured by fluorometric quantification.

SPINeasy® DNA Kit for Microbiome

Features

- **Effective and versatile:** Isolate high concentration of bacterial and fungal DNA from a variety of samples in less than 30 minutes.
- **Reliable:** Optimized lysis condition enables unbiased DNA isolation from most types of samples.
- **Robust:** High reproducibility of experimental results.
- **Safe:** Does not use any organic denaturants.
- **User-friendly:** No tedious enzymatic lysis procedure.



Comparison of extraction of bacterial gDNA from two different bacteria species (*E. coli* and *S. aureus*, ~10^8 cfu each) using **SPINeasy® DNA Kit for Microbiome** and competitors kits.

Order Information

Product Name	Catalogue
SPINeasy® DNA Pro Kit for Feces	116547050
SPINeasy® RNA Kit for Feces	116556050
SPINeasy® DNA/RNA Kit for Feces	116555050
SPINeasy® DNA Kit for Microbiome	116553050

Automation Workflow

Implementing an automation system can be a daunting task. Making the switch from manual methods to automated workflows allow you to transform your lab's capabilities. With the right automation system in place, you could achieve higher throughput and get more reliable results. This will also help to eliminate human error, resulting in increased accuracy and precision.

MP Biomedicals Automation Overview

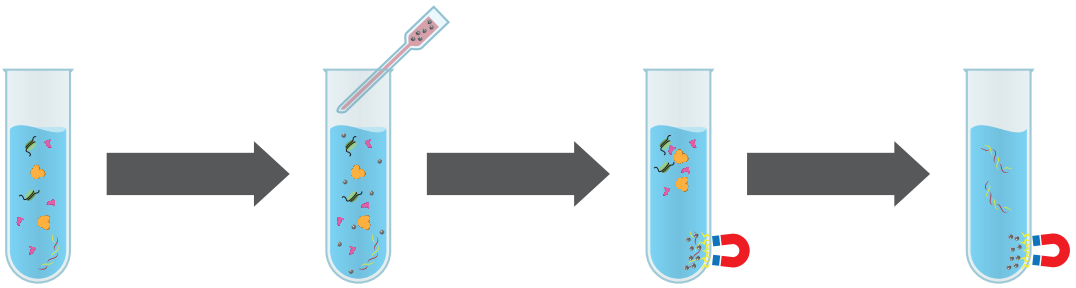
- *FastPrep-24 5G*
- *FastPrep-24 Classic*
- *FastPrep-96 Pro*
- *FastPrep-96*
- *Smart Vortenizer*
- *Lysing Matrix*

- *MagBeads Kit*
- *MPure-32*
- *MPure-96*

MP Biomedicals offer a range of automation solutions, including FastPrep, the sample homogenization system, wide range of adaptors, MPure automated nucleic acid purification system, and extraction kits. These help to boost the lab productivity by getting consistent recovery of your target DNA or RNA.

Principle of MagBeads Kit

The MagBeads Kits employ a state-of-the-art nucleic acid purification method to extract high quality DNA/RNA. These kits eradicate the requirement for the phenol-chloroform method, replacing it with a magnetic bead-based purification technique that selectively binds DNA/RNA and eliminates the impurities. The final eluted nucleic acid is ensured to be of high yield and ready to be used for various downstream applications, including end-point PCR, real-time qPCR, NGS, and more.



Samples containing target DNA/RNA and mixture of impurities.

Magnetic beads are added and bounded to target.

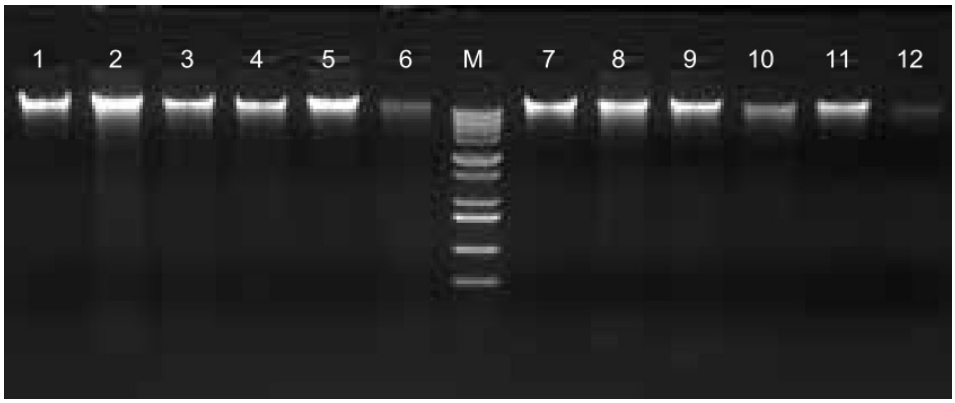
Bound molecules are separated by magnetic field. The remains are washed and removed.

Target nucleic acid is eluted from the magnetic beads and can be used in downstream applications.

MagBeads FastDNA Kit for Feces

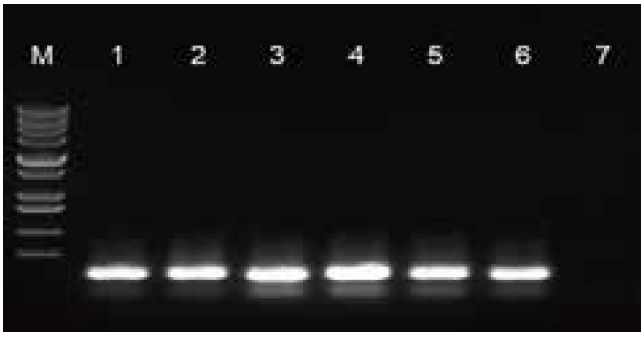
The MagBeads FastDNA Kit for Feces allows quick and efficient isolation of high-quality genomic DNA from fresh or frozen human and animal feces in less than 60 minutes. Specially formulated buffers remove contaminants, while the magnetic beads ensure high yields of pure gDNA. It supports both manual and automated extraction methods, increasing work efficiency for downstream analyses like PCR, sequencing, and more.

DNA yield and purity from different fecal samples extracted with MagBeads FastDNA Kit for Feces.



M: 1kb plus DNA ladder
Lane 1-6: Manual
Lane 7-12: Automation
Lane 1&7: 30 mg Swine Feces
Lane 2&8: Mouse Feces
Lane 3&9: 30 mg Human Feces
Lane 4&10: 150 mg Chicken Feces
Lane 5&11: 150 mg Bovine Feces
Lane 6&12: 150 mg Elephant Feces

PCR of extracted gDNA (top) and Restriction digestion of extracted gDNA (bottom) from different feces samples using MagBeads FastDNA Kit for Feces.



M: 1kb plus DNA ladder
Lane 1: Swine Feces
Lane 2: Mouse Feces
Lane 3: Human Feces
Lane 4: Chicken Feces
Lane 5: Bovine Feces
Lane 6: Elephant Feces
Lane 7: Negative Control

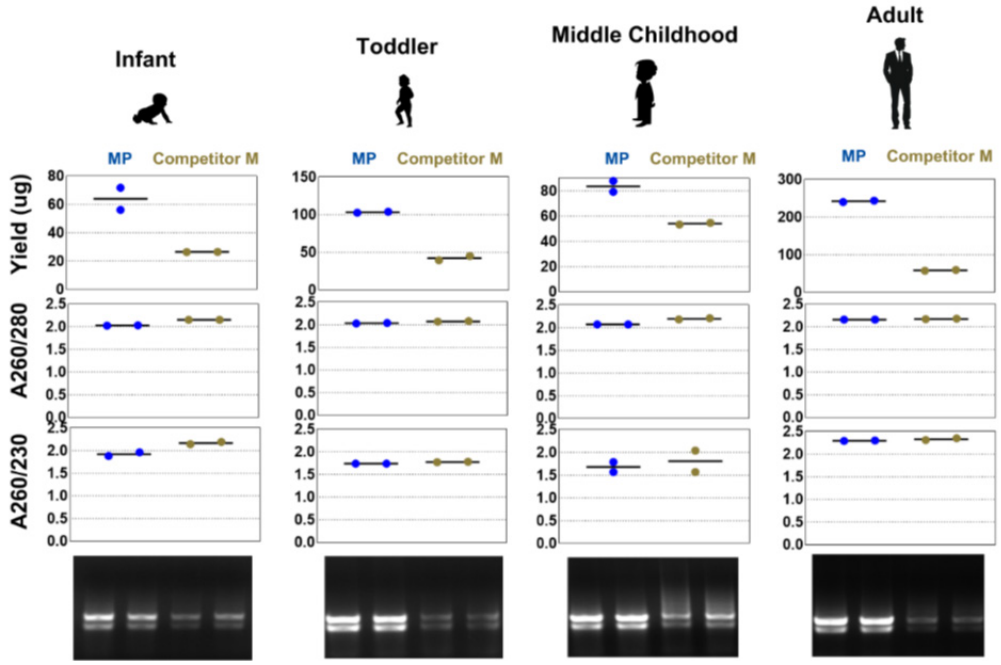
Order Information

Product Name	Catalogue
MagBeads FastDNA Kit for Feces, 50 preps	116570400
MagBeads FastDNA Kit for Feces (Ready-to-Use for MPure-32)	117033200
MagBeads FastDNA Kit for Feces (Ready-to-Use for MPure-96)	117034200

MagBeads FastRNA Kit for Feces

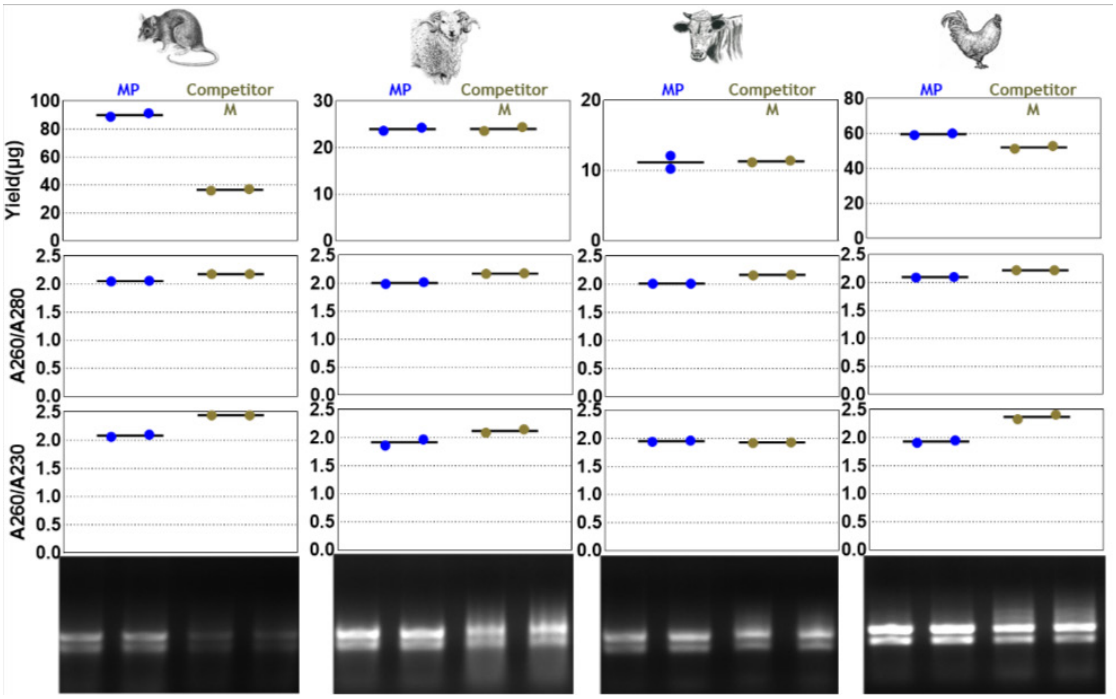
The MagBeads FastRNA Kit for Feces is a magnetic bead-based RNA purification system designed for total RNA isolation from fecal samples. Feces contain components like fibers, undigested particles, and lipids that can affect RNA quality and yield. This kit overcomes those challenges using advanced bead-beating technology, a lysis chemistry that works with various samples, and proprietary inhibitor removal techniques. It also features selective RNA binding and FastDNase I enzyme treatment for complete DNA removal. The process is simple and efficient, ensuring high yield and purity without additional DNA or inhibitor removal steps. The purified RNA is suitable for downstream applications such as RT-qPCR and is eluted with RNase-free water.

RNA Yield and purity performance extracted from different human fecal samples with MagBeads FastRNA Kit for Feces.



RNA extraction was performed on human samples from different life stages, including infants, toddlers, middle childhood, and adults. Across all age groups, MP consistently yielded higher RNA amounts than Competitor M. The purity, as indicated by the A260/A280 and A260/A230 ratios, remained high and comparable between the two kits. The gel electrophoresis images show clear RNA bands, indicating intact RNA, with MP producing more intense bands.

RNA Yield and purity performance extracted from different animal fecal samples with MagBeads FastRNA Kit for Feces.

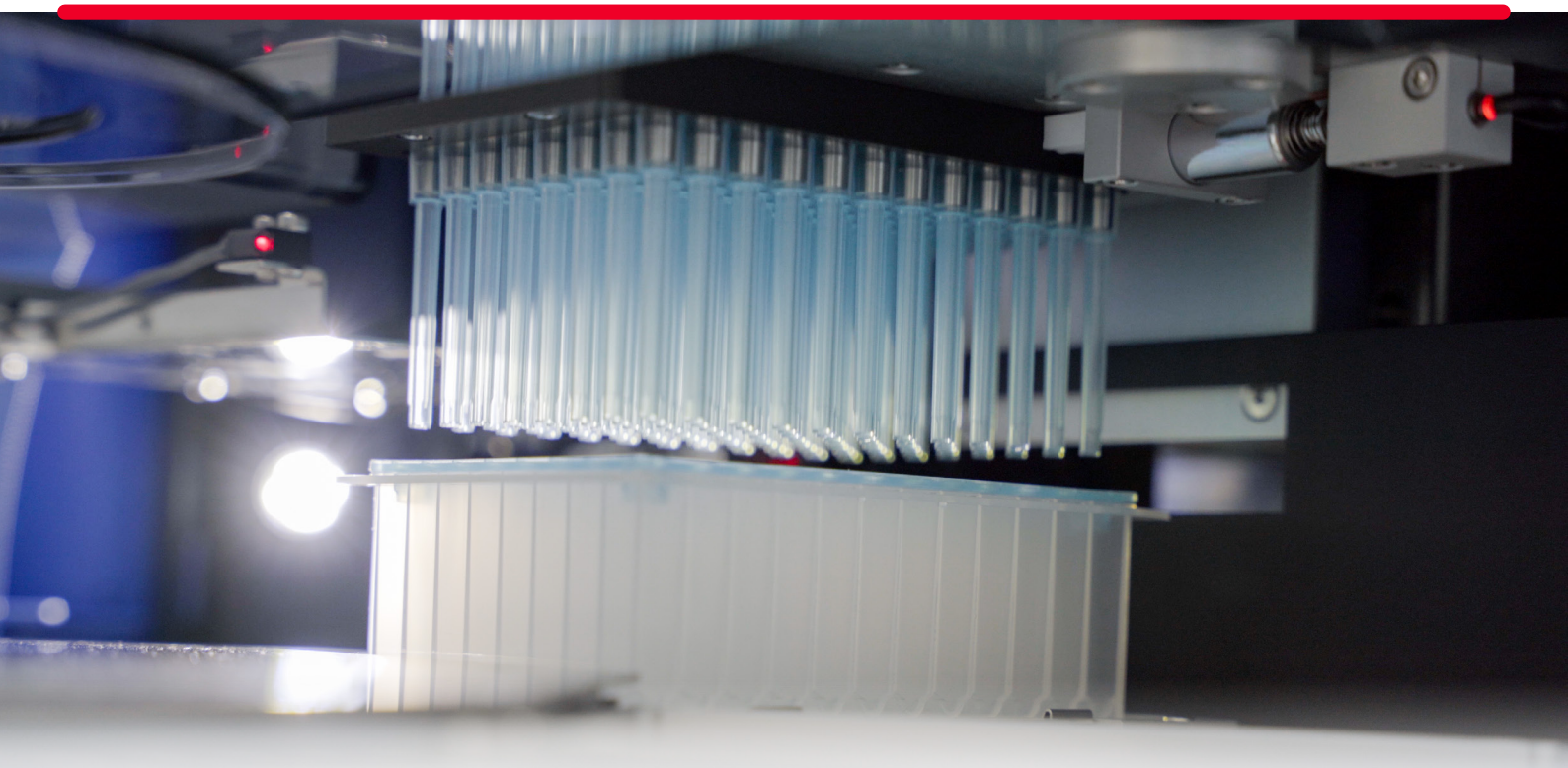


RNA extraction results from various animal samples, including rat, sheep, cow, and chicken. Like the human results, MP consistently extracted more RNA than Competitor M, as reflected in the yield plots. The purity metrics (A260/A280 and A260/A230) remained comparable between the two kits, suggesting both methods provide clean RNA. The gel images confirm RNA integrity, with MP showing stronger bands, especially in certain samples like rat, where Competitor M's bands appear weaker.

Order Information

Product Name	Cat.#	Package
MagBeads FastRNA Kit for Feces	116588050	50 PREPS
MagBeads FastRNA Kit for Feces(Ready-to-Use for MPure-32™)	117040300	96 PREPS
MagBeads FastRNA Kit for Feces(Ready-to-Use for MPure-96™)	117040400	96 PREPS

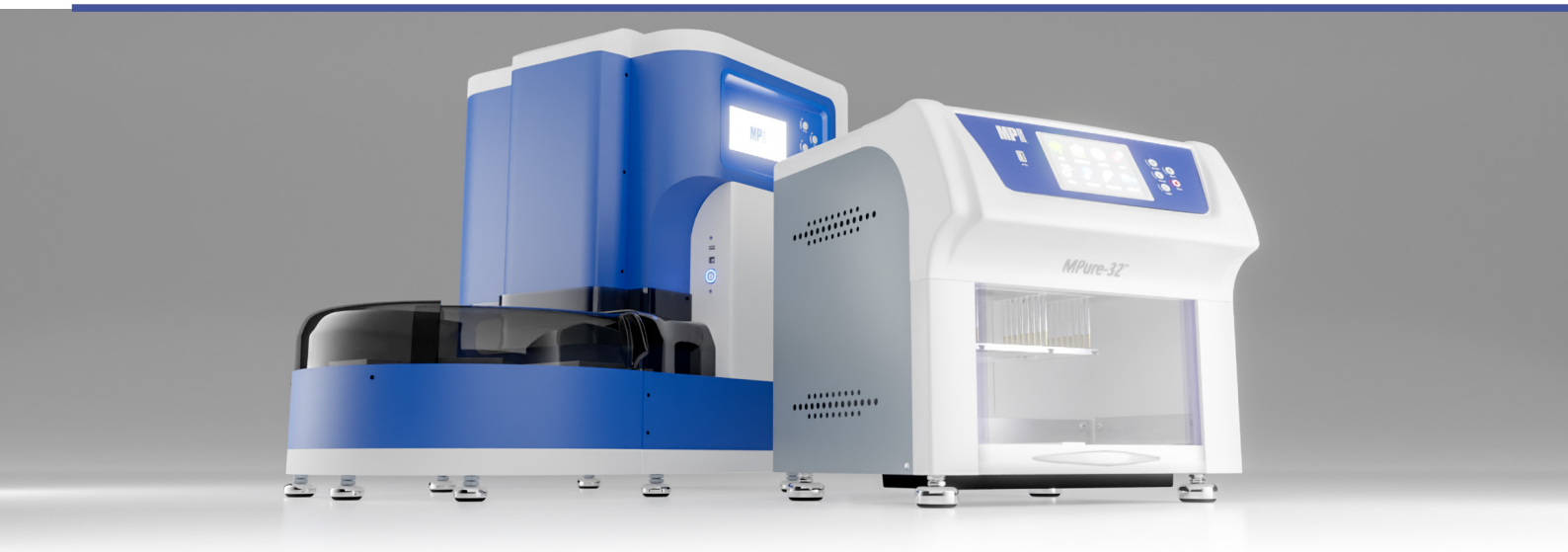
Faster, More Powerful Way of Extraction-Automated Purification



How does Automation better your results?

- **Increased throughput**
  Our system allows for processing larger batches of samples, accommodating up to 32 or 96 samples simultaneously.
- **Consistent workflow**
  Your work is standardized, ensuring uniformity in processing, and eliminating variations that can affect reproducibility.
- **Time and Cost Saving**
  Our system optimizes reagent usage, minimizing waste while also saving you valuable time.
- **Improved accuracy of results**
  Our system precisely manages each step of lysing, binding, washing, and eluting, reducing the risk of contamination or experimental failures.

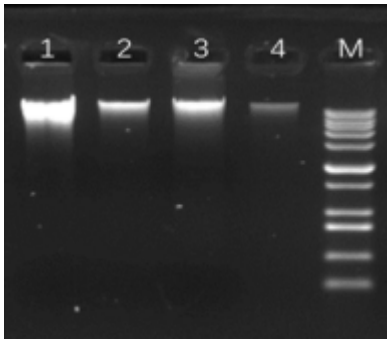
MPure™ aNAP System



Why should you choose MPure™ aNAP System for your gut microbiome research?

- Top-notch Performance
  - Designed for but not limited to MagBeads Kits for simultaneous sample processing and purification of nucleic acids
- Time saving
  - Average processing time between 30-60 minutes
  - High throughput of up to 32 or 96 samples
- Safe and user-friendly
  - Intuitive design and UI for faster navigation and experiment setups
  - UV and temperature control allow trustworthy result
  - Effective cross-contamination control from aerosol

The performance of the MPure™ aNAP System instruments have been extensively evaluated with MagBeads Purification Kits. The following data show the high yield and purity of genomic DNA (gDNA) extracted from various feces samples.



M:1kb plus DNA ladder,
Lane 1: 30 mg swine feces,
Lane 2: 15 mg mouse feces,
Lane 3: 30 mg human feces,
Lane 4: 150 mg chicken feces

Order Information

Product Name	Catalogue
MPure-32™	EMC043 (CE Version)
	EMC043D (RUO Version)
MPure-96™	EMC044 (CE Version)
	EMC044D (RUO Version)

Optimize your gut microbiome research workflow with MP Biomedicals sample preparation solution.

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