



RNA PRODUCTS

Large Selection of High Quality RNA,
RNA Extraction Kits, and Analysis



Sample Preparation for Diagnostics and Life
Science Research

AnaPrep 12: Simplifying DNA & RNA Extraction



Automated Nucleic Acid
Preparation
System



- True Walk Away System
- Time Saving Efficiency
- Small Footprint
- No Cross Contamination
- Quick Barcode Protocol

Table of Contents



RNA Extraction Kits



Automated DNA and RNA Extraction - AnaPrep 12



RNA Analysis: IsHyb In Situ Hybridization Kit, and
FastHyb-Hybridization Solution



Directional mRNA Sample Prep Kit



Small RNA Sample Prep Kit



RNA Extracts from Human, Animal, and Plants



Fast Purification of High-Quality RNA

BioChain is a leading company in extracting RNAs from hundreds of different tissues and cells. A series of RNA extraction kits developed by Biochain support extraction of premium RNAs to our customers. These kits are also provided to our customers in order to allow them do RNA extractions in a simple and reliable way.

Available Kits:

- **Dr. P Kit** – Isolate genomic DNA, RNA, and Protein simultaneously from the same sample
- **Total RNA Extraction Kit**—Purify total RNA from fresh/frozen tissue and cells
- **Broad Range Total RNA Extraction Kit** – Purify small and large sized RNA from fresh/frozen tissue and cells
- **MicroRNA Extraction Kit** – Purify microRNA (<200nt) from fresh/frozen tissue and cells
- **FFPE RNA Extraction Kit** – Purify RNA from formalin-fixed, paraffin-embedded tissues
- **Cartilage RNA Extraction Kit** – Purify RNA from cartilage samples
- **Whole Blood RNA Extraction Kit** -- Purify RNA from whole blood with spin column
- **RNAmate** -- Decontaminate polysaccharides and proteoglycans from RNA extraction



Dr. P Kit

Key Benefits & Features

- Genomic DNA, RNA, and Protein isolated simultaneously from a single biomaterial source, such as tissue or cells
- Ideal for small and large scale samples
- Free of contaminations by polysaccharides, proteoglycans, and RNase
- DNA, RNA, and protein isolated from same lysate thus eliminating inconsistency



Fig. 1. Gel image of genomic DNA, Total RNA, and total Protein extracted from the same piece of human colon tissue by the Dr. P Kit. Lane 1: Genomic DNA on 2% agarose gel. Lane 2: Total RNA on 1.2% agarose gel. Lane 3: Protein lysate on 4-20% SDS-PAGE gradient gel.

Broad Range Total RNA Isolation Kit

Key Benefits & Features

- Purify total RNA from fresh/frozen tissues and cells
- Simple - quick, and easy protocol using rapid spin-column format, can isolate Total RNA in less than 30 mins.
- Versatile - Isolate both large RNAs and small RNAs
- High Quality - Isolated RNAs can be used for a variety of downstream applications
- Reliable - replicable results and minimal contamination from genomic DNA

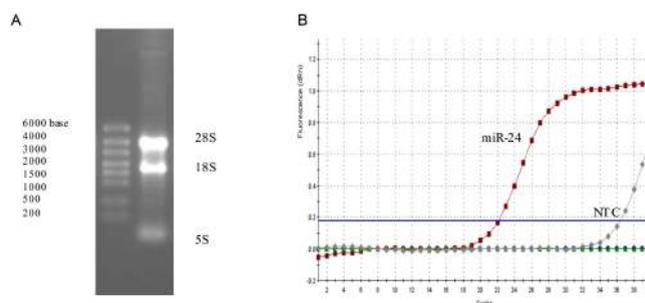


Fig. 2. RNA isolated from human placenta tissue with Broad Range Total Isolation Kit. A. RNA was analyzed by electrophoresis on 1% denaturing agarose gel. Lane 1: RNA ladder. Lane 2: isolated human placenta total RNA. B. Real-time qRT-PCR analysis of extracted RNA using hsa-miR-24 as target. NTC: no template control.

Total RNA Extraction Kit

Key Benefits & Features

- Purification of total RNA from fresh/frozen tissues and cells
- Large capacity extraction

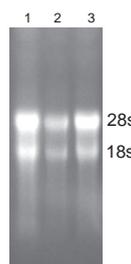


Fig. 3. Image of RNAs isolated by BioChain's Total RNA Extraction Kit on agarose gel. Lane 1: 1 µg of Guinea Pig Kidney Total RNA. Lane 2: 1 µg Beagle Dog Trachea Total RNA. Lane 3: 1 µg Guinea Pig Liver Total RNA.

Catalog No.	Product	Unit
K2021010	Dr. P Kit	1 kit
K2014005	Total RNA Extraction Kit	1 kit
K1341050	Broad Range Total RNA Isolation Kit	1 kit

MicroRNA Isolation Kit

Key Benefits & Features

- Rapid method for isolation and purification of small RNA molecules (<200 nt)
- Can also be used for isolating large RNA (>200nt)
- Isolate MicroRNA from tissue cultures, cell cultures, blood, and serum
- Very easy to use



MicroRNA Isolation Kit

RNAmate

Key Benefits & Features

- Ready to use
- Decontamination of polysaccharides and proteoglycans
- Increase purity of total RNA
- Get better results with reverse transcription-polymerase chain reaction (RT-PCR) and migration of RNA in gel electrophoresis

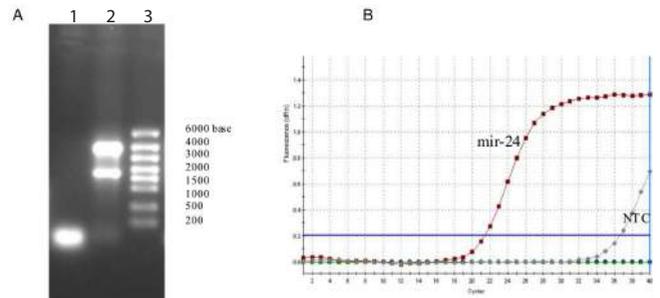


Fig. 4. Isolated small RNAs and large RNAs were analyzed by electrophoresis on 1% denaturing agarose gel. Large RNAs and small RNAs were isolated from one human placenta tissue lysate. Lane 1: purified small RNAs. Lane 2: purified large RNAs. Lane 3: RNA ladder. B. Detection of the presence of miRNAs in 1 ng small RNAs isolated from human placenta using BioChain's miR-24 One-Step qRT-PCR Detection Kit (Cat# KS081200)

FFPE Tissue RNA Extraction Kit

Key Benefits & Features

- Removal of paraffin, partial reversal of formalin crosslinking, and release of RNA from fixed tissues
- No toxic chemicals
- Short and robust protocol
- No inhibition on downstream applications

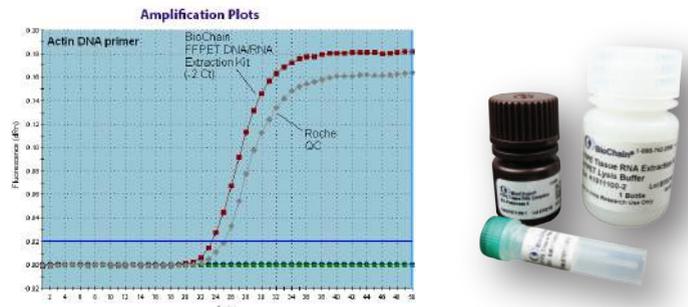


Fig. 5. RNA extracted from human liver FFPE sections were analyzed with qPCR using β -actin as target. RNA was extracted using FFPE Tissue RNA Extraction Kit from BioChain and Company R.

Catalog No.	Product	Unit
KS341025	MicroRNA Isolation Kit	1 kit
L1011100	RNAmate	100 ml
K1011100	FFPE Tissue RNA Extraction Kit	1 kit

Cartilage RNA Isolation Kit

Key Benefits & Features

- High quality RNA can be extracted from cartilage and used in arthritis studies
- State of the art method isolates total RNA while minimizing copurification of proteoglycans
- Isolate total RNA from a variety of cartilage
- No proteinase K required
- Very easy to use

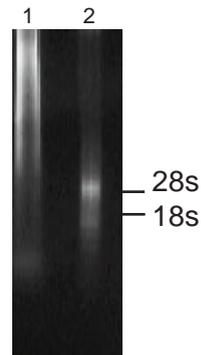


Fig. 6. Image of Isolated Cartilage RNA on agarose gel Lane 1: 1 μ g mouse cartilage RNA isolated by competitor's total RNA isolation kit Lane 2: 1 μ g mouse cartilage RNA isolated by Biochain's Cartilage RNA Isolation Kit

Whole Blood RNA Extraction Kit

Key Benefits & Features

- Quick and easy protocol
- Can isolate total RNA in less than 30 mins.
- Isolate both large RNAs and small RNAs
- Isolated RNAs can be used for a variety of downstream applications
- Replicable results and minimal contamination from genomic DNA

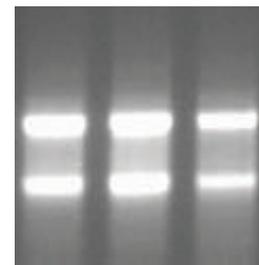


Fig. 7. Agarose gel image of human whole blood RNA isolated from 3 different donors.



Catalog No.	Product	Unit
K2031010	Cartilage RNA Isolation Kit	1 kit
K1012050	Whole blood RNA Extraction Kit	1 kit

Automated DNA & RNA Extraction Kit

AnaPrep 12: BioChain's automated nucleic acid extraction system. DNA and RNA can be extracted from human FFPE tissue, blood, serum, cells, etc. The AnaPrep DNA and RNA Extraction Kit is fast, efficient, and better than manual kits.

Key Features

- Automated processing of 1 to 12 samples with pre-programmed protocols
- Consistent high purity nucleic acid using reliable reagents and methods
- Saves time and labor
- Flexible design for processing customized sample numbers and elution volume (50-300ul).
- For research and diagnostic use, manufactured under GMP, SO13458, and CE marking
- Minimizes contamination risks with unidirectional sample head and built-in UV lamp
- Purification from various sample sources and the products are suitable for downstream applications
- Easy to Use and Error-free with simple steps, fool-proof design, and barcode reader
- Conserves space with an all-in-one, compact instrument



Catalog No.	Product	Unit
Z1321001	AnaPrep 12 Instrument	1 EA
Z1321003	AnaPrep 24 Instrument	1 EA

Please inquire about our other kits and applications.

IsHyb In Situ Hybridization (ISH) Kit

Key Benefits & Features

- RNA detection (including microRNA)
- Non-isotopic, colorimetric detection of gene expression
- RNase-free, ISH-optimized reagents
- Use with either DNA or RNA probes
- Compatible with digoxigenin labeled DNA probes.
- High ratio of signal to background
- ISH detection in tissue sections and/or tissue microarray



IsHyb In Situ Hybridization Kit

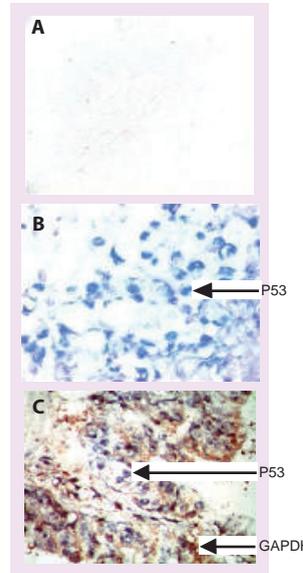


Fig. 8. Colon tumor and normal tissues were hybridized with p53 probe using BioChain's IsHyb (ISH) Kit. A: Normal colon tissue with expected negative result (BCIP/NBT 100x). B: Colon tumor tissue with expected positive result indicated by the arrow (BCIP/NBT 100x). C: Colon tumor tissue was hybridized with p53 followed by immunostaining with GAPDH antibody using BioChain's ImmuChem (IHC) Kit (K3181100). The arrows indicate positive results with either p53 or GAPDH.

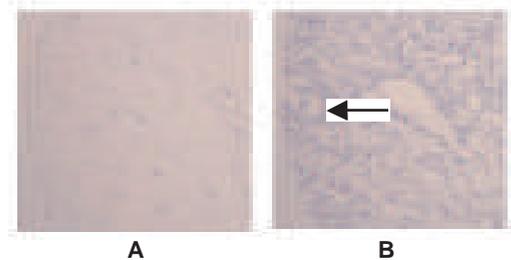


Fig. 9. Human liver specific microRNA 122a probe was used to hybridize human liver tissue section using BioChain's ISH kit. The expected microRNA signal was observed. A: No Probe control; B: 4 ng probe was used.

FastHyb-Hybridization Solution

Key Features

- One hour hybridization
- Ready-to-Use hybridization buffer
- High ratio of signal to background
- Suitable for Northern, Southern, and Reverse Northern Blot analysis

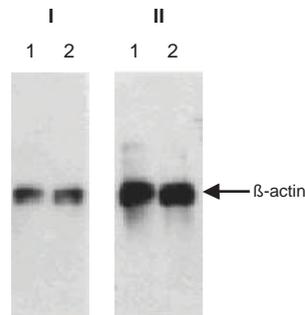


Fig. 10. Comparison of two hybridization solutions. Two identical RNA blots were hybridized with nonradioactively labeled human β -actin probe for 1 hour in FastHyb Solution (Panel II) and competitor's hybridization solution (Panel I). Film was exposed for 30 sec. Lane 1: human kidney mRNA (2 μ g). Lane 2: human liver mRNA (2 μ g).

Catalog No.	Product	Unit
K2191020	IsHyb In Situ Hybridization Kit (20 Slides)	1 kit
K2191050	IsHyb In Situ Hybridization Kit (50 Slides)	1 kit
L1031250	FastHyb-Hybridization Solution	250 ml

Individual components are also sold separately. Please visit www.biochain.com for more product information.

Directional mRNA Sample Prep Kit

Sample Prep System for mRNA Sequencing

Description

The RapidSeq Directional mRNA Sample Prep kit provides strand-specific cDNA synthesis with reduced costs and increased sensitivity.

Key Features

- Low RNA input
- Requires as little as 50 ng of total RNA input
- Directional
- Increased useful number of reads
- <1 Hour Hands-on-Time
- Streamlined workflow
- Library construction in <7 hours
- All-in-One Kit: Includes all necessary enzymes
- FFPE RNA compatible

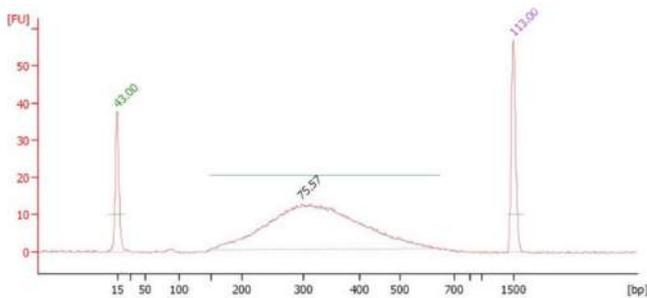


Fig. 11. DNA-1000 Chip Trace of the Final Library from a human lung tissue mRNA Sample

High Quality Libraries Without Artifacts or Contaminations

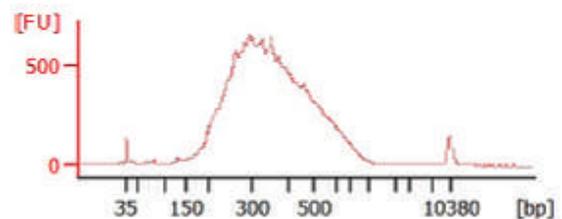


Fig. 12. Bioanalyzer Trace of Constructed Library of mRNA from corn.

mRNA Input (ng)	Sample Type	% Sense
100 (Competitor I Kit)	FFPE mRNA (1 year)	97.85%
100 (RapidSeq Kit)	FFPE mRNA (1 year)	97.88%
500 (Competitor I Kit)	FFPE mRNA (10 years)	97.59%
500 (RapidSeq Kit)	FFPE mRNA (10 years)	97.57%

Parameter	TruSeq	RapidSeq
Coverage Rate	44.00%	65.00%
rRNA Contamination with 23s, 16s, and 5s removal	2.70%	1.50%
tRNA contamination	64.00%	57.00%
Unknown sequence percentage	5.00%	<1%
Directional Percentage	74%	77.50%
Average Quality Score (range from 0 to 40) 40 is the highest	26	37

Catalog No.	Product	Unit
KS073012-I	RapidSeq High Yield Directional mRNA Sample Prep Kit - With Aligner 1-12	1 kit
KS073012-II	RapidSeq High Yield Directional mRNA Sample Prep Kit - With Aligner 13-24	1 kit
KS073012-III	RapidSeq High Yield Directional mRNA Sample Prep Kit - With Aligner 25-36	1 kit
KS073012-IV	RapidSeq High Yield Directional mRNA Sample Prep Kit - With Aligner 37-48	1 kit
KS073012	RapidSeq High Yield Directional mRNA Sample Prep Kit - Without Aligner	1 kit

A trial version is also available. Please visit www.biochain.com for more product information.

Small RNA Sample Prep Kit

Everything you need in one box

Description

The RapidSeq Small RNA Sample Prep Kit is a cost effective and reliable solution for small RNA library preparation using Illumina's sequencing platform. Our reagents are master mixed for optimal performance and simple experiment setup, which minimizes human error. RapidSeq can be used for a variety of studies involving small RNA libraries.

Key Features

- Saves Time - Less than 1 hour hands-on
- Efficient - Includes all necessary enzymes and plastics
- High Quality - Get results with as little as 1 ng or as much as 10 µg of total RNA
- FFPE RNA Compatible

Applications

- Small RNA discovery and quantification
- miRNA expression profiling
- miRNA related functional assessments

Construct Pure Libraries without Artifacts or Contamination

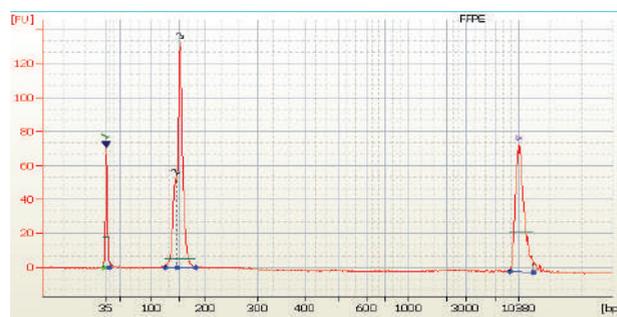


Fig. 13. Bioanalyzer Trace of FFPE microRNA

Highly Consistent and Reproducible Results

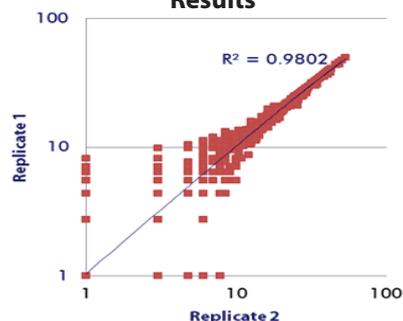


Fig. 14. Normalized R2 Plot of miRNA counts from Two Replicate Libraries

Catalog No.	Product	Unit
KS074012-I	RapidSeq High Yield Small mRNA Sample Prep Kit - With Aligner 1-12	1 kit
KS074012-II	RapidSeq High Yield Small mRNA Sample Prep Kit - With Aligner 13-24	1 kit
KS074012-III	RapidSeq High Yield Small mRNA Sample Prep Kit - With Aligner 25-36	1 kit
KS074012-IV	RapidSeq High Yield Directional mRNA Sample Prep Kit - With Aligner 37-48	1 kit
KS074012	RapidSeq High Yield Directional mRNA Sample Prep Kit - Without Aligner	1 kit

A trial version is also available. Please visit www.biochain.com for more product information.

Universal RNA

Key Benefits & Features

- Isolated from whole tissue sources
- Can be used as controls for microarray study
- Made from diversified tissues for broad gene coverage
- Industrial scale production to minimize lot-to-lot variation
- High quality without genomic DNA contamination
- Use as a reference for any kind of array study

Total RNA

Key Benefits & Features

- Isolated from a wide variety of hard-to-obtain tissues
- Ready-to-use for Northern blotting, RT-PCR, RACE, cDNA synthesis, RNA protection and primer extension
- Decontamination of polysaccharide, proteoglycan, RNase, and genomic DNA
- High efficiency reverse transcription
- MicroRNAs are included

Available Stock Samples

- Human Adult Normal
- Human Fetal Normal
- Human Tumors
- Human Diabetes
- Human Heart Diseases: congenital, coronary hypertension
- Alzheimer's disease
- Human Liver cirrhosis
- Human Lupus
- Monkey Normal
- Rat Normal
- Mouse Normal
- Plant Normal



Catalog No.	Product	Unit
R4234565	Universal RNA - Human Normal Tissues	4 x 100 µg
R4234565-1	Universal RNA - Human Normal Tissues	2 x 100 µg
R4334566	Universal RNA - Mouse Normal Tissues	4 x 100 µg
R4334566-1	Universal RNA - Mouse Normal Tissues	2 x 100 µg
R4534565	Universal RNA - Monkey Normal Tissues	4 x 100 µg
R4534565-1	Universal RNA - Monkey Normal Tissues	2 x 100 µg
R4734565	Universal RNA - Dog Normal Tissues	4 x 100 µg
R4734565-1	Universal RNA - Dog Normal Tissues	2 x 100 µg
R4C34565	Universal RNA - Chicken Normal Tissues	4 x 100 µg
R4C34565-1	Universal RNA - Chicken Normal Tissues	2 x 100 µg
R4434567	Universal RNA - Rat Normal Tissues	4 x 100 µg
R4434567-1	Universal RNA - Rat Normal Tissues	2 x 100 µg

Selection of Total RNA

Catalog No.	Product	Unit
R1234122-50	Total RNA - Human Adult Normal Tissue: Heart	50 µg
R1234106-50	Total RNA - Human Adult Normal Tissue: Esophagus	50 µg
R1234003-10	Total RNA - Human Adult Normal Tissue: Adipose	10 µg
R1234010-50	Total RNA - Human Adult Normal Tissue: Bladder	50 µg
R1234024-10	Total RNA - Human Adult Normal Tissue: Bone Marrow	10 µg
R1234042-10	Total RNA - Human Adult Normal Tissue: Brain: Cerebral Cortex	10 µg
R1234086-50	Total RNA - Human Adult Normal Tissue: Breast	50 µg
R1234090-50	Total RNA - Human Adult Normal Tissue: Colon	50 µg
R1234149-50	Total RNA - Human Adult Normal Tissue: Liver	50 µg
R1254148-1	Total RNA - Human Normal Lymphocyte Cell Line	100 µg
R1235248-50	Total RNA - Human Tumor Tissue: Stomach	50 µg
R1235183-10	Total RNA - Human Tumor Tissue: Ovary	10 µg
R1235086-50	Total RNA - Human Tumor Tissue: Breast	50 µg
R1235149-50	Total RNA - Human Tumor Tissue: Liver	50 µg
R1236122Hd-3	Total RNA - Congenital heart disease: Heart	50 µg
R1236188Dia-50	Total RNA - Diabetic Disease: Pancreas	50 µg
R1236152Lup-50	Total RNA - Lupus: Lung	50 µg
R1244035-50	Total RNA - Human Fetal Normal Tissue: Brain	50 µg
R1244122-50	Total RNA - Human Fetal Normal Tissue: Heart	50 µg
R1244108-10	Total RNA - Human Fetal Normal Tissue: Whole Eye	10 µg
R1534142-50	Total RNA - Monkey (Rhesus) Normal Tissue: Kidney	50 µg
R1534188-50	Total RNA - Monkey (Rhesus) Normal Tissue: Pancreas	50 µg
R1634310	Total RNA - Plant Normal Tissue: Arabidopsis	100 µg
R1434035-50	Total RNA - Rat Normal Tissue: Brain	50 µg
R1434171-50	Total RNA - Rat Normal Tissue: Skeletal Muscle	50 µg
R1434122-50	Total RNA - Rat Normal Tissue: Heart	50 µg

Custom Service

We offer custom synthesis of Total RNA from various types of samples, such as blood, serum, FFPE tissue, and frozen tissue. Please contact us at info@biochain.com

