WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A® DNA and RNA purification kits

Essential DNA and RNA purification kits for everyday lab research

omega BIO-TEK

innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A.® Gel Extraction Kit

Recovery of DNA fragments from agarose gels in 15 minutes

Rapid
DNA recovery from agarose gels in less than 15 minutes

Versatile
Spin and vacuum formats available

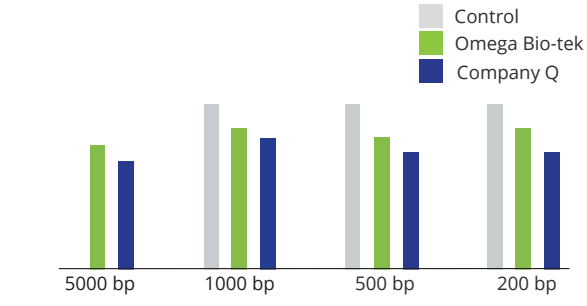
Quality
Sequence quality DNA preparations

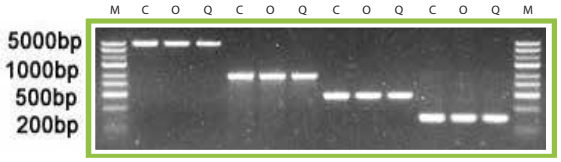
Safe
No phenol-chloroform extractions

Cost-Effective
30% less than the the competition on average

Gel purification of DNA is a common technique used for the isolation of specific DNA fragments from reaction products. However, most methods either fail to completely remove agarose (which can lead to problems in downstream manipulations), shear the DNA, or result in very low yields.

E.Z.N.A.® Gel Extraction Kit uses HiBind® spin column technology to purify DNA bands 70 bp-20 kb in length from all grades of agarose gels with up 85% recovery. The DNA band of interest is excised from the gel, dissolved in binding buffer and applied to a HiBind® DNA spin column. Following 3 wash steps, DNA is eluted with deionized water or elution buffer and is ready for downstream applications such as ligations, PCR amplification, restriction enzyme digestion, and various labeling reactions. This kit can also be used to purify DNA fragments from PCR products are enzymatic reactions.





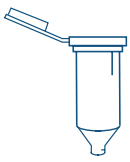
Recovery Rate of Excised DNA vs. Company Q

Figure 1. Percent recovery of 4 different sizes of DNA bands from a 2% agarose gel with the E.Z.N.A.® Gel Extraction Kit (O, green) and a comparable kit from Company Q (Q, blue) according to manufacturer's recommended protocols. The original input amounts of DNA (C, gray) were normalized in 100% and the amount of DNA recovered was determined by optical density measurements with Thermo Scientific's NanoDrop® 2000c.

Available Formats

The E.Z.N.A.® Gel Extraction Kit is available with 2 different types of columns: V-spin columns have an attached cap (D2500) while Q-spin columns are capless (D2501). The columns are otherwise identical in use and application.


Q-spin (capless)


V-spin (attached cap)

Product Description	Preps	Cat No.
E.Z.N.A.® Gel Extraction Kit (V-spin, attached cap)	5	D2500-00
	50	D2500-01
	200	D2500-02

Product Description	Preps	Cat No.
E.Z.N.A.® Gel Extraction Kit (Q-spin, capless)	50	D2501-01
	200	D2501-02

omega BIO-TEK
innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A® Cycle Pure Kit

Rapid purification of single- or double-stranded DNA from PCR or other enzymatic reactions

Rapid
Purification of PCR products in 10 min

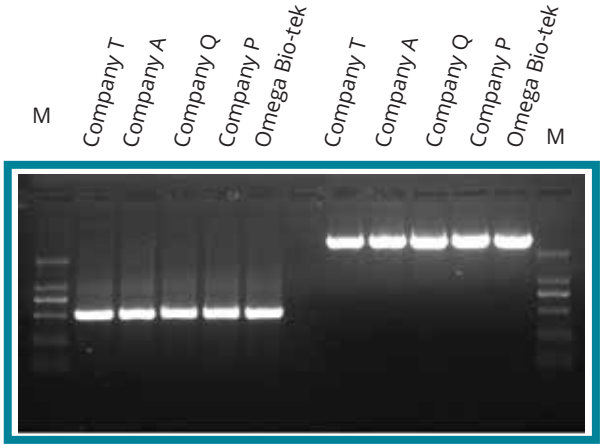
Versatile
Spin and vacuum protocols

Quality
Sequence quality DNA preparations

Safe
No phenol-chloroform extractions

Cost Effective
30% less than the the competition on average

E.Z.N.A.® Cycle Pure Kit is designed for the rapid purification of single- or double-stranded DNA from PCR or other enzymatic reactions. The purification procedure completely removes primers, nucleotides, enzymes, salts, and other impurities from the DNA sample. The DNA sample is simply mixed with buffer and spun through the HiBind® DNA Column. The DNA bound to the HiBind® matrix is washed and the clean, concentrated DNA is eluted with deionized water or elution buffer. This convenient spin column format eliminates the need for expensive resins or toxic organic compounds such as phenol and chloroform, thereby making it possible to process multiple samples in parallel. Purified DNA can be used in T-A ligations, sequencing, restriction enzyme digestion, and various other labeling reactions.



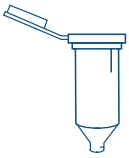
Omega Bio-tek's E.Z.N.A.® Cycle Pure Kit vs. the Competition

Figure 1. PCR products in 2 sizes (500 bp and 50 kb) were purified with Omega Bio-tek's E.Z.N.A.® Cycle Pure Kit and kits from 4 competitors. 10% of eluted product was analyzed on a 0.8% agarose gel and run with a DL2000 marker.

Available Formats

The E.Z.N.A.® Cycle Pure Kit is available with 2 different types of columns: V-spin columns have an attached cap (D6492) while Q-spin columns are capless (D6493). The columns are otherwise identical in use and application.


Q-spin (capless)


V-spin (attached cap)

Product Description	Preps	Cat No.
E.Z.N.A.® Cycle Pure Kit (V-spin columns, attached cap)	5	D6492-00
	50	D6492-01
	200	D6492-02

Product Description	Preps	Cat No.
E.Z.N.A.® Cycle Pure Kit (Q-spin, capless)	5	D6493-00
	50	D6493-01
	200	D6493-02

omega BIO-TEK
innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A® Plasmid DNA Mini Kit I

Isolation of 30 µg high quality plasmid DNA from 1-5 mL bacterial cultures

RAPID
30 minutes or less processing time

VERSATILE
Spin and vacuum protocols

QUALITY
Sequence quality DNA preparations

SAFE
No phenol-chloroform extractions

COST EFFECTIVE
30% less than the the competition on average

E.Z.N.A.® Plasmid DNA Mini Kit I

Is designed to isolate up to 30 µg of high quality plasmid DNA from 1-5 mL bacterial cultures in 30 minutes or less. This kit uses a modified alkaline lysis method to lyse the cells and separate genomic DNA from plasmid DNA. Plasmid DNA purification is further simplified by using our HiBind® Mini Column technology in 3 quick steps: bind, wash, and elute. Purified plasmid dNA is ready for a wide variety of downstream applications, including routine screening, restriction enzyme digestion, DNA sequencing, cloning, transformation, and transfection.

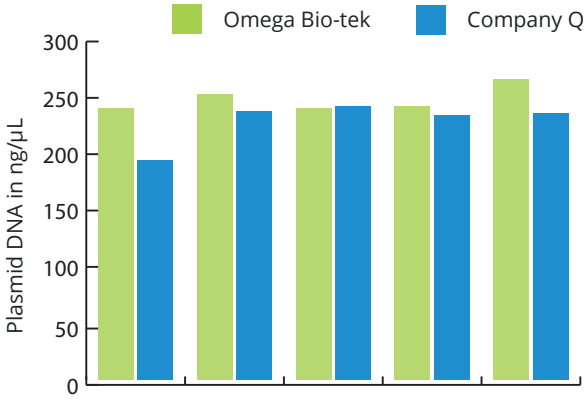


Figure 1

DNA Concentration Comparison

Figure 1. 4 mL DH5α cultures were transformed with pGEM vector according to manufacturer's recommended protocols. Plasmid DNA concentration was determined by optical density measurements with Thermo Scientific's NanoDrop® 2000c. Total elution volume was 50 µL.

Plasmid Quality Assessment

Table 1. pGEM plasmid was purified from 1 mL of DH5α cultures following Omega Bio-tek's E.Z.N.A.® Plasmid DNA Mini Kit I (Q-spin) protocols with a 50 µL elution volume. Plasmid DNA absorbance ratios were determined using Thermo Scientific's NanoDrop® 2000c. Purified plasmid samples had an average CRL of 899.5 bp and an average of 907 bases with a Phred score greater than 20 (≤ 1% probability of error in base calling).

Table 1

Sample ID	A_{260}/A_{280}	Contigous Read Length (CRL) on Sanger sequencing	QV20+
1	1.87	911	920
2	1.89	899	908
3	1.91	888	884
4	1.88	897	908
5	1.85	899	900
6	1.85	906	911
7	1.86	900	911
8	1.87	904	914
9	1.87	895	907
10	1.87	895	910
11	1.89	891	899
12	1.87	909	917

Product Description	Preps	Cat No.
E.Z.N.A. Plasmid DNA Mini Prep Kit I (Q-spin, capless)	5	D6942-00
	50	D6942-01
	200	D6942-02

Product Description	Preps	Cat No.
E.Z.N.A. Plasmid DNA Mini Prep Kit I (V-spin, attached cap)	5	D6943-00
	50	D6943-01
	200	D6943-02

ALSO AVAILABLE IN ENDOTOXIN FREE FORMAT. CAT NO: D6948

omega BIO-TEK
innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A.® Plasmid DNA Midi & Maxi Kits

Isolation of molecular biology grade plasmid DNA in less than 1 hour

Rapid
Purification of plasmid DNA in less than 1 hour

Quality
High-quality molecular biology grade plasmid DNA

Versatile
Spin and vacuum protocols

Safe
No phenol-chloroform extractions

Cost-Effective
30% less than the the competition on average

E.Z.N.A.® Plasmid DNA Midi & Maxi Kits offer a novel and reliable method of isolating high-quality plasmid DNA using the spin column format without costly accessories. The HiBind® DNA midi and maxi columns facilitate the binding, washing and elution steps, thus enabling multiple samples to be processed simultaneously. Although yields may vary according to plasmid copy number, *E. coli* strain and conditions of growth, the E.Z.N.A.® Plasmid DNA Midi Kit typically produces up to 200 µg high copy number plasmid from 50 mL of overnight culture in LB medium while the E.Z.N.A.® Plasmid DNA Maxi Kit typically produces 0.5-1 mg high copy number plasmid DNA from 50-200 mL of overnight culture in LB medium. If working with low copy number plasmid, one can increase the starting culture volume to 100 mL with the E.Z.N.A.® Plasmid DNA Midi Kit, and up to 500 mL with the E.Z.N.A.® Plasmid DNA Maxi Kit. High-quality DNA is ready for immediate use in routine molecular biology such as automated fluorescent sequencing, restriction enzyme digestion, and transfection screening.

E.Z.N.A.® Plasmid DNA Midi Kit				
Sample	Culture Size (mL)	A_{260}/A_{280}	A_{260}/A_{230}	Yield (µg)
1	50	1.89	2.31	192.9
2	50	1.90	2.40	189.0
3	50	1.90	2.39	190.0
4	50	1.90	2.39	187.4
E.Z.N.A.® Plasmid DNA Maxi Kit				
1	250	1.90	2.29	715.2
2	250	1.90	2.34	697.0
3	250	1.90	2.35	706.5
4	250	1.90	2.32	701.3

Plasmid Yield & Quality

Table 1. DH5α cells were transformed with pGEM vector and cultures were grown aerobically for 24 hours in LB broth in the culture amounts needed by the kits. DNA was quanitified using Thermo Scientific's NanoDrop® 2200c.

Product Description	Preps	Cat No.
E.Z.N.A.® Plasmid DNA Midi Kit	2	D6904-00
	25	D6904-03
	100	D6904-04

Product Description	Preps	Cat No.
E.Z.N.A.® Plasmid DNA Maxi Kit	2	D6922-00
	5	D6922-01
	20	D6922-02
	100	D6922-04

omega BIO-TEK
innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A.® Blood DNA Mini Kit

Rapidly isolates DNA from up to 250 µL of fresh or frozen anticoagulated whole blood

Rapid
DNA isolation in less than 30 minutes

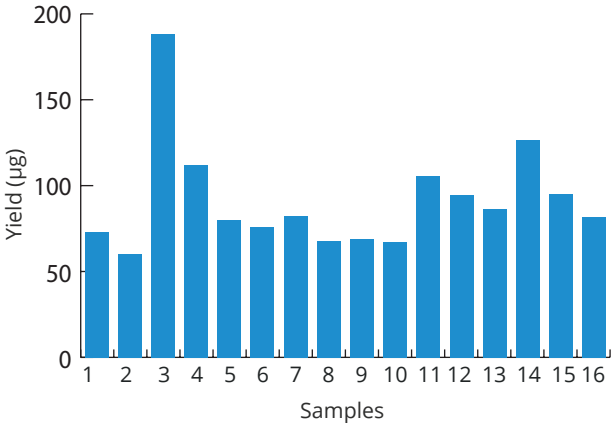
250 µL Sample
Fresh, frozen or anticoagulated blood

Quality
Purified DNA suitable for a variety of downstream applications

Safe
No organic extractions

Cost-Effective
30% less than the the competition on average

E.Z.N.A.® Blood DNA Mini Kit provides rapid total DNA isolation from up to 250 µL of fresh or frozen anticoagulated whole blood. The E.Z.N.A.® Blood DNA Mini Kit can also be used for the preparation of genomic DNA from buffy coat, serum, plasma, bone marrow, lymphocytes, platelets and bodily fluids. This kit allows for simultaneous processing of single or multiple samples in less than 30 minutes. Phenol/chloroform extractions and time consuming steps such as precipitation with isopropanol or ethanol have been eliminated. DNA purified with the E.Z.N.A.® Blood DNA Mini Kit is ready for downstream applications such as PCR, Southern blotthing, and restriction enzyme digestion.



Yield of Genomic DNA Purified

Figure 1. DNA purified from packed blood cells of 1 mL whole blood using the E.Z.N.A.® Blood DNA Mini Kit. DNA was eluted in 500 µL and quantitated using the Thermo NanoDrop® 2000 spectrometer.

Genomic DNA Isolated

Table 1. DNA was purified from 4 mL saliva stored in Oragene® tubes using the E.Z.N.A.® Blood DNA Mini Kit. DNA eluted in 500 µL and quantitated using the Thermo NanoDrop® 2000 spectrometer.

Sample	$A_{260/280}$	$A_{260/230}$	Yield (µg)
1	1.86	1.97	75.2
2	1.85	1.84	93.9
3	1.84	1.94	77.4
4	1.85	2.08	158.0
5	1.86	2.06	182.0
6	1.82	1.78	127.9
7	1.95	1.94	107.0
8	1.83	1.89	115.2
9	1.85	2.02	60.7
10	1.86	1.91	82.4

Product Description	Preps	Cat No.
E.Z.N.A.® Blood DNA Mini Kit	5	D3392-00
	50	D3392-01
	200	D3392-02

omega BIO-TEK
innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A.® Circulating DNA Kit

Isolation of circulating DNA from plasma, serum, and other acellular body fluids

Versatile Inputs

(1-4 mL of serum/plasma)

Reliable

Optimum recovery of cell-free DNA with minimal genomic DNA contamination

Quality

Purified DNA suitable for downstream applications such as qPCR & NGS

Safe

No organic extractions

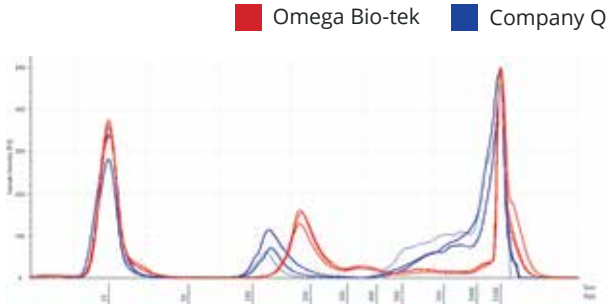
Cost-Effective

30% less than the the competition on average

E.Z.N.A.® Circulating DNA Kit provides a rapid and easy method for the isolation of circulating DNA from plasma, serum, and other acellular bodily fluids. The kit allows for simultaneous processing of single or multiple samples in under 2 hours. DNA purified using the E.Z.N.A.® Circulating DNA method is ready for applications such as PCR, microarrays, and next-generation sequencing.

The E.Z.N.A.® Circulating DNA Kit uses the reversible nucleic acid-binding properties of our HiBind® matrix combined with the speed of mini column centrifugation and funnel adaptors. The funnel adaptors allow for large volumes of liquid to be applied to the mini columns when using a vacuum manifold.

A specially formulated buffer system allows circulating DNA to bind to the HiBind® matrix. Samples are lysed under denaturing conditions and then transferred to the DNA column where DNA binds and cellular debris, hemoglobin, and other proteins are washed away. High quality DNA is eluted in nuclease-free water.

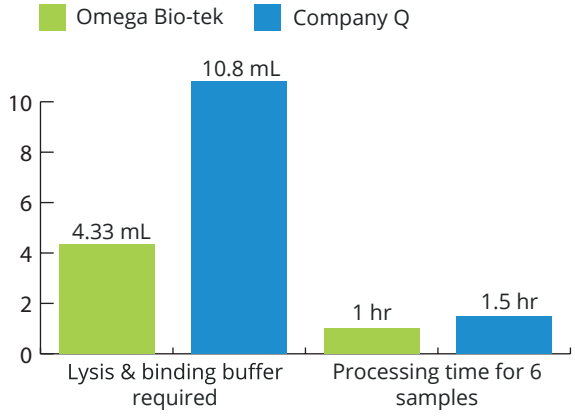


Electropherogram Overlay of Purified DNA from 4 mL Serum

Figure 1. 4 mL of unspiked serum was purified using kits from Omega Bio-tek and Company Q following manufacturer's recommended protocols. Purified DNA was analyzed on Agilent's TapeStation® 2200.

Protocol Comparison for a 4 mL Sample

Figure 2. 4 mL of unspiked serum was purified using kits from Omega Bio-tek and Company Q following manufacturer's recommended protocols. Purified DNA was analyzed on Agilent's TapeStation® 2200.



Product Description	Preps	Cat No.
E.Z.N.A.® Circulating DNA Kit	5	D3091-00
	50	D3091-01

omega BIO-TEK
innovations in nucleic acid isolation

E.Z.N.A.® FFPE DNA Kit

Isolation of DNA from formalin-fixed, paraffin-embedded tissue samples

Specialized Buffer System

High yielding DNA reversing formalin crosslinking of nucleic acids

2 Paraffin Removal Methods

Use xylene-ethanol method or heat treatment

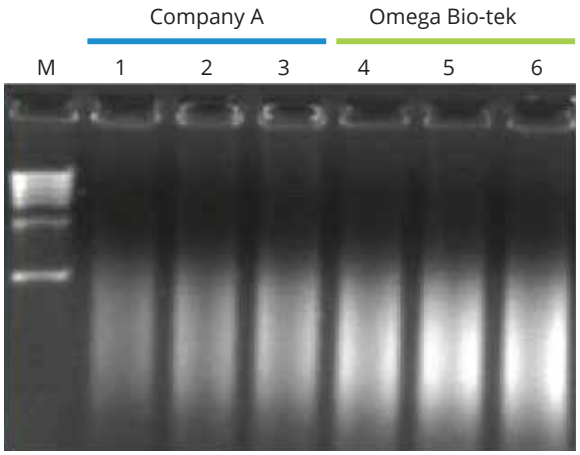
Quality

High-quality DNA suitable for qPCR, NGS, etc.

Cost-Effective

30% less than the the competition on average

E.Z.N.A.® FFPE DNA Kit is designed for fast and easy purification of DNA from formalin-fixed, paraffin-embedded tissue sections. Paraffin removal can be performed either by using a xylene-ethanol method or by heat treatment. Samples are incubated in a specialized lysis buffer along with proteinase K to reverse crosslinking, effectively releasing short and long DNA fragments. After adjusting the binding conditions with ethanol, the lysate is applied to the MicroElute DNA Column to bind DNA. Cellular debris and proteins are effectively removed during the wash steps. High quality purified DNA is then eluted in nuclease-free water or elution buffer and is ready for applications such as PCR and next-generation sequencing.



DNA Yield & Quality with Agarose Gel Analysis

Figure 1. DNA was extracted from ~2 mg of FFPE tissue weighed post-deparaffinization. The samples were digested overnight at 55°C and eluted in 60 µL volume. The purified DNA was analyzed on 0.5% agarose gel. Lanes 1-3 represent Company A, lanes 4-6 represent Omega Bio-tek and M is the 1 kb marker. The DNA yield and quality was quantified using a Thermo Scientific NanoDrop® 2200.

Company	Sample	$A_{260/280}$	$A_{260/230}$	Yield (µg)
Omega Bio-tek	4	1.79	2.25	13.25
	5	1.79	2.18	13.32
	6	1.80	2.30	12.48
Company A	1	1.80	2.31	9.53
	2	1.81	2.24	9.28
	3	1.82	2.27	6.71

Product Description	Preps	Cat No.
E.Z.N.A.® FFPE DNA Kit	5	D3399-00
	50	D3399-01

omega BIO-TEK
innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A.® Food DNA Kit

Isolation of high-quality DNA from complex matrices such as processed food, chocolate, cereals, etc.

Versatile

Isolates DNA from a range of food products including milk, cereal, chocolate, etc.

GMO TESTING

Protocol to target host DNA from GMO testing

Quality

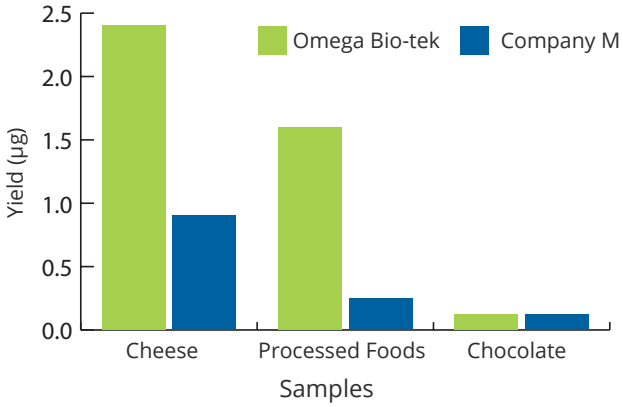
Sequence quality DNA preparations eliminating PCR-inhibitory compounds

Safe

No phenol-chloroform extractions

E.Z.N.A.® Food DNA Kit allows for rapid and reliable isolation of high quality DNA from complex matrices such as processed foods, chocolate, cereals, meats, etc. Specific protocols exist to target host DNA from GMO testing or bacterial DNA for pathogen/spoilation testing. Omega Bio-tek's proprietary lysis buffer system allows for efficient homogenization of samples without foaming, often seen in other lysis buffers containing detergents. The subsequent binding and washing buffers efficiently eliminate PCR-inhibiting compounds within the samples. The Omega protcol involves no organic extractions and the uniquely formulated buffer system creates optimal conditions for DNA to bind to the HiBind® silica matrix of the spin columns, resulting in higher yields.

The extracted DNA is suitable for a variety of downstream applications such as qPCR, next-generation sequencing, etc. for a variety of testing scenarios like genetically modified organism (GMO) screening, pathogen detection, microbial contamination dectection, species identification in meat products, etc.

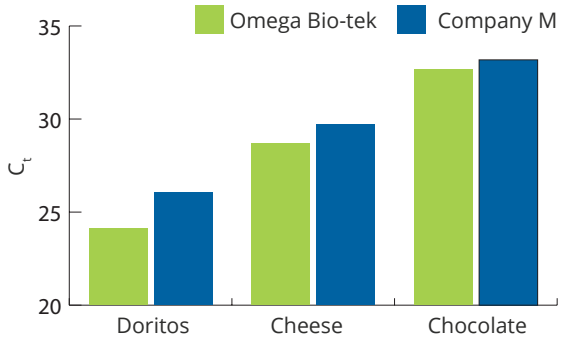


DNA Yield Comparison

Figure 1. DNA was extracted from approximately 200 mg samples according to manufacturer's recommended protocols and eluted in 100 µL. DNA yield was determined via fluorescence-based nucleic acid quantification.

qPCR Comparison

Figure 2. DNA was extracted from 200 mg samples as per manufacturer's recommended protocols and eluted in 100 µL. A 20 µL SYBR® Green real-time PCR was performed in triplicate using 2 µL eluate as the template.



Product Description	Preps	Cat No.
E.Z.N.A.® Food DNA Kit	5	D4616-00
	50	D4616-01

omega BIO-TEK
innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A.® Plant DNA DS Kit

Isolates genomic DNA from leaf & seed tissues with high amounts of polysaccharides & polyphenols

Robust Lysis

Reliable results from a variety of plant samples

Homogenizer Columns

allowing for faster processing

High-Yielding DNA

Suitable for most downstream applications

Safe

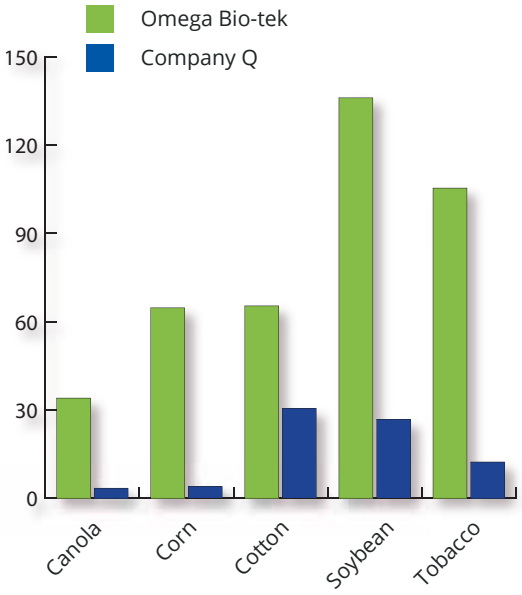
No phenol-chloroform extractions

Cost-Effective

30% less than the the competition on average

E.Z.N.A.® Plant DNA DS Kit is designed for the efficient recovery of genomic DNA up to 30 kb in size from fresh, frozen or dried plant tissue samples rich in polysaccharides, polyphenols or those having a lower DNA content. Up to 50 mg of wet tissue can be processed in less than 1 hour. The system combines the reversible nucleic acid-binding properties of the HiBind® matrix with the speed and versatility of spin column technology to eliminate polysaccharides, phenolic compounds and enzyme inhibitors from plant tissue lysates. Purified DNA is suitable for PCR, restriction enzyme digestion and hybridization applications.

This procedure relies on the well-established properties of the cationic detergent, cetyltrimethyl ammonium bromide (CTAB), in conjunction with the unique binding system to increase yields and provide high quality DNA. The system eliminates the need for chloroform extractions traditionally associated with CTAB-based lysis methods. Samples are homogenized and lysed in a high salt buffer containing CTAB, binding conditions are adjusted and DNA is purified using an HiBind® DNA Mini Column. Salts, proteins and other contaminants are removed to yield high quality genomic DNA suitable for downstream applications such as endonuclease digestion, thermal cycle amplification and hybridization applications.



Comparison of DNA Yield from Multiple Crops

Figure 1. 40-50 mg of respective fresh leaf tissue was extracted in triplicate according to the manufacturer's recommended protocols and eluted in 100 µL. DNA analyzed with fluorescent DNA-based quantification method. Total yield was divided by total tissue amount to show ng or DNA per mg of leaf tissue.

Product Description	Preps	Cat No.
E.Z.N.A.® Plant DNA DS Kit	5	D2411-00
	50	D2411-01

omega BIO-TEK
innovations in nucleic acid isolation

E.Z.N.A.® Soil DNA Kit

Isolates DNA from soil & environmental samples eliminating humic acid & PCR inhibitors

Disruptor Tubes

Glass beads pre-filled in 2 mL tubes

Quality

Ready-to-use DNA eliminating PCR inhibitors using proprietary inhibitor removal technology

Reliable

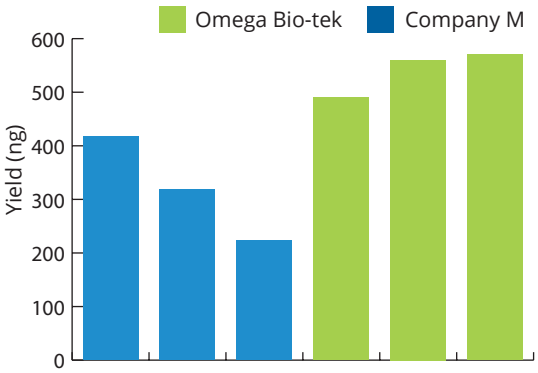
Reproducible DNA purification from a variety of sample sources

Yield

Total DNA isolation from variety of microorganisms found in soil, including bacteria, fungi, algae etc.

E.Z.N.A.® Soil DNA Kit is formulated to isolate high purity cellular DNA from soil samples typically containing humic acid and other inhibitors of PCR. This kit uses a novel and proprietary method to isolate genomic DNA from a variety of environmental samples without organic extractions.

This kit has been successfully used to isolate DNA from Gram-positive and -negative bacteria, fungi, yeast, and algae that inhabit a range of samples including clay, sandy, peaty, chalky, or loamy soil samples. Isolated DNA can be used for most downstream applications, including PCR, Southern blot, and NGS analysis.



Comparison of DNA Extraction Method from Soil Samples

Figure 1. DNA yield determined with fluorescence-based dye quantification. 50 µL ZymoBIOMICS Microbial Community Standard was added to 200 mg soil samples and DNA was extracted using manufacturer's recommended protocols. DNA was eluted in 100 µL for both manufacturers.

Comparison of Ct Values

Table 1. 20 µL SYBR® Green reaction. 50 µL ZymoBIOMICS Microbial Community Standard was added to 200 mg soil samples and DNA was extracted using manufacturer's recommended protocols. DNA was eluted in 100 µL for both manufacturers.

Extraction Method	1:10	1:100	Δ Ct
Company M	22.47	25.83	3.36
Company M	22.85	26.26	3.41
Company M	23.52	27.10	3.58
Company M Average	**22.95**		
Omega Bio-tek	22.25	25.04	2.79
Omega Bio-tek	22.04	25.82	3.78
Omega Bio-tek	22.40	26.38	3.98
Omega Bio-tek Average	**22.23**		
NTC	39.65		

Product Description	Preps	Cat No.
E.Z.N.A.® Soil DNA Kit	5	D5625-00
	50	D5625-01
	200	D5625-02

omega BIO-TEK
innovations in nucleic acid isolation

E.Z.N.A.® Tissue DNA Kit

Simple, rapid method for the isolation of DNA from a wide variety of sample sources

Rapid
DNA isolation in less than 20 minutes (after lysis)

Quality
Sequence quality DNA preparations

Reliable
Optimized buffers guarantee pure DNA every time

Safe
No phenol-chloroform extractions

Cost-Effective
30% less than the the competition on average

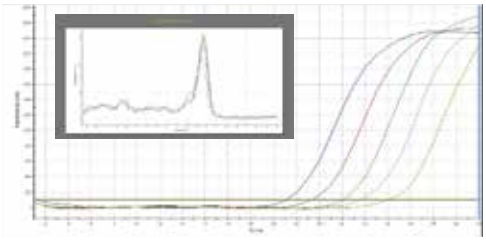
E.Z.N.A.® Tissue DNA Kit offers a simple, rapid and cost-effective method for the isolation of DNA from a wide variety of sample sources, including fresh or frozen animal cells and tissues. After cell lysis, the DNA purification process can be completed in less than 30 minutes. Up to 30 mg of tissue at a time can be easily processed using the simple E.Z.N.A.® Tissue DNA protocol. With the spin column-based kit, multiple samples can be processed in parallel. There is no need for phenol/chloroform extractions or time consuming steps such as precipitation with isopropanol or ethanol. DNA purified using the E.Z.N.A.® Tissue DNA Kit is ready for most downstream applications such as PCR, Southern blotting, and restriction enzyme digestion.

Yield Comparison of E.Z.N.A.® Tissue DNA Kit

Figure 1. Purified genomic DNA from 10 mg rat kidney tissue was isolated using kits from Company T, Company A, Company P, Company Q, and Omega Bio-tek's E.Z.N.A.® Tissue DNA Kit following manufacturer's recommended protocols. 3% of eluted DNA was analyzed on a 0.8% agarose gel. M: Lambda-Hind III.

Real-time PCR of Genomic DNA Isolation with E.Z.N.A.® Tissue DNA Kit

Figure 2. Genomic DNA was isolated from 10 mg of rat kidney with Omega Bio-tek's E.Z.N.A.® Tissue DNA Kit. Serial dilutions of recovered genomic DNA were used as templates for real-time PCR amplification of a 100 bp fragment of te GAPDH gene with SYBR® Green labeling. Each reaction was performed in triplicate. The fluorescence versus cycle number is plotted to the right and the 5 curves correspond to the input DNA template amounts of 10, 2, 0.4, 0.08, and 0.0016 ng.



Product Description	Preps	Cat No.
E.Z.N.A.® Tissue DNA Kit	5	D3396-00
	50	D3396-01
	200	D3396-02

For free samples of any of our kits, visit www.omegabiotek.com

Citations

Fahlgren, C., Hagström, Å., Nilsson, D., Zweifel, U. (2010). Annual variations in the diversity, viability and origin of airborne bacteria. Applied and Environmental Microbiology (76): 3015-3025. 10.1128/aem.02092-09.

Hovda, M., Lunestad, B., Sivertsvik, M., Rosnes, J. (2007). Characterisation of the bacterial flora of modified atmosphere packaged farmed Atlantic cod (Gadus morhua) by PCR-DGGE of conserved 16S rRNA gene regions. International Journal of Food Microbiology (117): 68-75. 10.1016/j.ijfoodmicro.2007.02.022.

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A.® HP Total RNA Kit

Rapid & easy method for RNA isolation from cultured eukaryotic cells or tissues

Rapid
RNA isolation in 40 minutes or less

Versatile
Spin and vacuum protocols

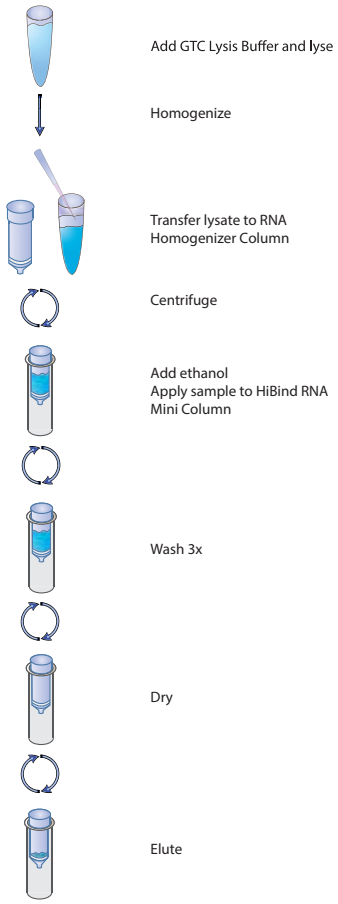
RNA
Suitable for RT-PCR, Northern Blotting, Poly A+ RNA (mRNA), nuclease protection, and *in vitro* translation

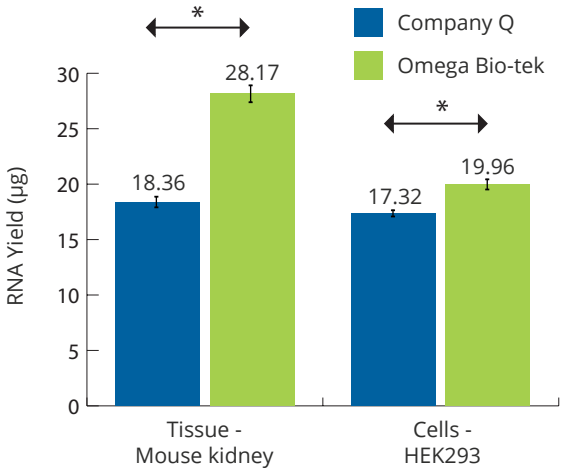
Safe
No organic extractions

Cost-Effective
30% less than the the competition on average

E.Z.N.A.® HP Total RNA Kit provides a rapid and easy method for RNA isolation from a small amount of cultured eukaryotic cells or tissues. This kit allows single or simultaneous processing of multiple samples in less than 40 minutes. Normally, $1x10^7$ eukaryotic cells or 25-30 mg tissue can be used in a single experiment. There is no need for phenol/chloroform extractions, time consuming steps such as CsCl gradient ultracentrifugation, or precipitation with isopropanol or LiCl. RNA purified using the E.Z.N.A.® HP Total RNA method is ready for applications such as RT-PCR, RT-qPCR, Northern blotting, poly A+ RNA (miRNA) purification, nuclease protection, and *in vitro* translation.

Illustrated Protocol





RNA Yield Comparison
Figure 1. Figure 1 caption text.

Product Description	Preps	Cat No.
E.Z.N.A.® HP Total RNA Kit	5	R6812-00
	50	R6812-01
	200	R6812-02

omega BIO-TEK
innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A.® Plant RNA Kit

Isolates total RNA from a variety of plant samples

E.Z.N.A.® Plant RNA Kit provides a convenient and rapid method for the isolation of total RNA from a variety of plant samples. This kit includes a homogenizer column for filtration and homogenization of viscous plant cell lysates by centrifugation in combination with the HiBind® RNA spin columns for RNA purification. All the contaminants, including polysaccharides and phenolic compounds, are effectively removed. Purified RNA can be used for most downstream applications such as RT-PCR, Northern blot analysis, and poly A+ RNA selection.

Robust Lysis

Reliable results from a variety of plant samples

Homogenizer Columns

allowing for faster processing

RNA

Suitable for RT-PCR, Northern Blotting, Poly A+ RNA (mRNA), nuclease protection, and *in vitro* translation

Safe

No phenol-chloroform extractions

Cost-Effective

30% less than the the competition on average

Company	Yield (µg)	$A_{260/280}$
Omega Bio-tek	16.45	2.02
	20.63	2.08
	19.11	1.96
Company Q	17.43	2.02
	18.05	1.95
	16.71	2.05

RNA Yield vs. Company Q

Figure 1. Total RNA was isolated from 100 mg of *Arabidopsis thaliana* leaf tissue according to manufacturer's recommended protocols. 1/10 of eluate was analyzed on a denaturing agent agarose gel. OD values calculated with Thermo Scientific's NanoDrop® 2000c.

Plant Samples Validated with the E.Z.N.A.® Plant RNA Kit	
Arabidopsis thaliana	*Oryza sativa*
Humulus lupulus	*Hordeum vulgare*
Beta vulgaris	*Lycopersico esculentum*
Fragraria virginia	*Malus sp.*
Clarkia spp.	*Solum tuberosum*
Daucus carota	*Spinacia oleracaea*
Ornithogalum thyrsoides	*Surfinia sp.*
Dendtranthema spp.	*Triticum asestivum*
Euglena graciis	*Vetis sp.*
Nicotiana tabacum	*Zea mays*

Product Description	Preps	Cat No.
E.Z.N.A. ® Plant RNA Kit	5	R6827-00
	50	R6827-01
	200	R6827-02

omega BIO-TEK
innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A.® Universal Pathogen DNA Kit

Isolates pathogen DNA & RNA from a variety of sample sources

Low Elution

Volumes as low as 15 µL

Disruptor Tubes

Glass beads pre-filled in 2 mL tubes

Versatile

Isolates DNA & viral RNA from a wide variety of sample types

Quality

Sequence quality DNA preparations

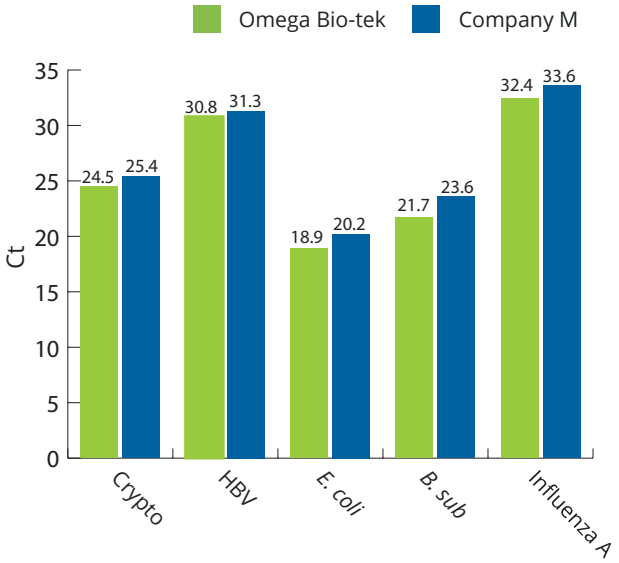
Safe

No phenol-chloroform extractions

E.Z.N.A.® Universal Pathogen DNA Kit allows for rapid and reliable isolation of high quality host genomic DNA, gram-positive and -negative bacterial DNA, fungal spore DNA, yeast DNA, viral DNA and viral RNA from tissues, blood, urine, serum, whole blood, and fecal samples.

This kit incorporates Omega Bio-tek's Disruptor Tubes pre-filled with glass beads for faster and easier processing. The Disruptor Tubes allow for simultaneous homogenizaton and lysis of the samples in the kit's lysis buffers and aid in effective lysis of difficult samples. No detergents are present in the initial lysis buffer, which eliminates foaming issues and provides optimal conditions for homogenization.

This unique buffer system does not require alcohol to bind nucleic acids, allowing for recovery of high quality DNA/RNA free of PCR inhibitors. Omega Bio-tek's MicroElute LE Spin Columns are used, which allow for elution volumes as low as 15 µL.



qPCR Comparison from Different Extraction Methods

Figure 1. Human fecal samples suspended in PBS solution were spiked with corresponding organisms. Fecal samples were then processed according to each manufacturer's recommended protocols. qPCR was performed in triplicate for each sample using primers specific for the target organisms. Data shown are averages of triplicate reactions.

Product Description	Preps	Cat No.
E.Z.N.A.® Universal Pathogen DNA Kit	5	D4035-00
	50	D4035-01

omega BIO-TEK
innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

E.Z.N.A.® Viral RNA Kit

Isolation of viral RNA from acellular fluids such as plasma, serum, urine, etc.

20 min

Rapid

Viral RNA isolation in 20 minutes or less

Versatile

Columns designed for spin or vacuum processing

Quality

Inhibitor-free viral RNA suitable for demanding downstream applications

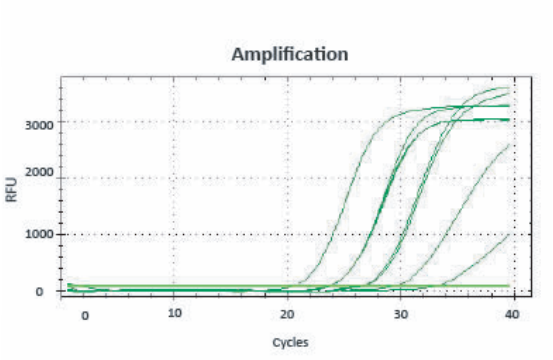
Safe

No organic extractions

Cost-Effective

30% less than the the competition on average

E.Z.N.A.® Viral RNA Kit is designed for the isolation of viral RNA from cell-free fluids such as plasma, serum, urine, and cell culture supernatant. The procedure completely removes contaminants and enzyme inhibitors, making RNA isolation fast, convenient and reliable. The kit is also suitable for the isolation of total RNA from cultured cells, tissues and bacteria. RNA purified using the E.Z.N.A.® Viral RNA method is ready for all downstream applications such as RT-PCR.



RNA Template	C_t Value
1 x 10^7 viral particles/µL	19.90
	19.88
	19.98
1 x 10^6 viral particles/µL	23.09
	23.09
	22.99
1 x 10^5 viral particles/µL	25.48
	25.53
	25.08
1 x 10^4 viral particles/µL	28.64
	28.56
	28.66
1 x 10^3 viral particles/µL	31.23
	31.59
	31.58

Real-time PCR of Viral RNA Isolation

Figure 1. Serum was separated from a human blood sample spiked with 1x10^7 Hepatitis B viral particles/µL. A 10-fold dilution series of the serum was performed and 50 µL of each dilution was used in the Mag-BIND® Viral DNA/RNA 96 Kit to isolate viral RNA. 2 µL of recovered RNA from each dilution of serum was used as a template in a real-time PCR reaction with SYBR® Green labeling. Each reaction was performed in triplicate. The 5 curves represent the fluorescence versus cycle number for the 5 starting serum concentrations.

Product Description	Preps	Cat No.
E.Z.N.A.® Viral RNA Kit	5	R6874-00
	50	R6874-01
	200	R6874-02

omega BIO-TEK
innovations in nucleic acid isolation

WhiteSci
Whitehead Scientific (Pty) Ltd
Products. Expertise. Support.

Mag-Bind® TotalPure NGS

Bead-based purification of DNA or RNA for next-generation sequencing workflows

No Protocol Change
Drop in replacement

0.Xx 0.Xx

Double Sided Size Selection
Use your current ratios

DNA Clean-Up
PCR Clean-Up

RNA Clean-Up
cDNA or RNA purification

Automatable
Adaptable on most open-ended liquid handlers

Cost Effective
30% less than the competition on average

Mag-Bind® TotalPure NGS offers an easy-to-use, reliable solution for the purification of both DNA or RNA for next-generation sequencing workflows with high recovery rates. Mag-Bind® TotalPure NGS is capable of selectively binding fragments depending on the reagent to sample ratio used, giving the user flexibility to perform left, right or double-sided size selection. This product is designed for both manual and fully automated purification of DNA and RNA samples, as well as for the purification of PCR products. The system combines Omega Bio-tek's proprietary chemistries with reversible nucleic acid-binding properties of magnetic beads to selectively bind fragments larger than 100 bp and eliminate excess nucleotides, primers and small, non-targeted products such as primer-dimers. Purified DNA and RNA is suitable for a variety of downstream applications such as NGS library preparation, microarrays, automated fluorescent sequencing, and restriction enzyme digestion.

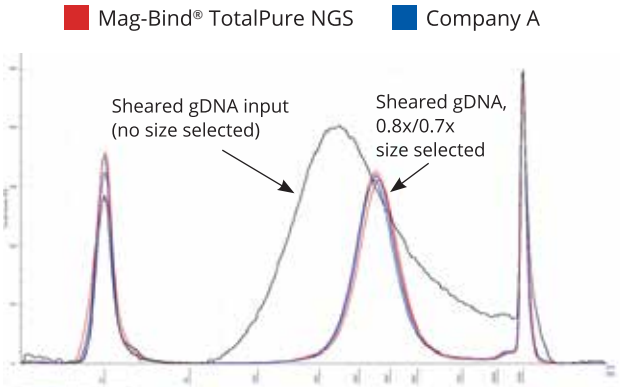


Figure 1.

Double-Sided Size Selection

Figure 1. Electropherogram overlay of the double-sided size selection on sheared gDNA at 0.8x/0.7x ratio set using Omega Bio-tek's Mag-Bind® TotalPure NGS and a comparable product from Company A following manufacturer's recommended protocols. The DNA was eluted in 25 µL and analyzed on Agilent's TapeStation® 2200.

Total RNA Clean-Up

Figure 2. 10 µL of RNA at 50 ng/µL and 5 ng/µL was cleaned up with Omega Bio-tek's Mag-Bind® TotalPure NGS following manufacturer's recommended protocols. The RNA was eluted in 20 µL and analyzed on Agilent's TapeStation® 2200. Recovery rates ranged betreen 85-92% respectively.

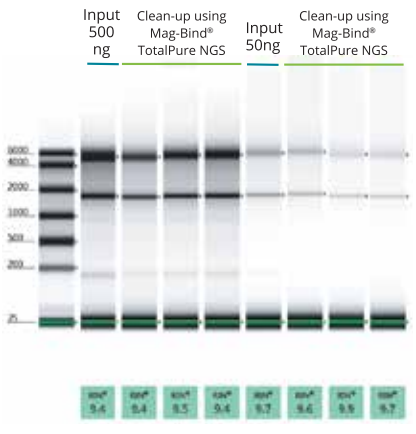


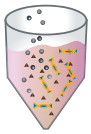
Figure 2.

omega BIO-TEK
innovations in nucleic acid isolation

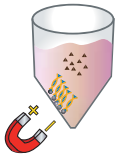
Mag-Bind® TotalPure NGS

Bead-based purification of DNA or RNA for next-generation sequencing workflows

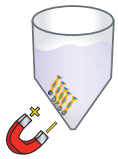
Illustrated Protocol



Add Mag-Bind® TotalPure NGS and mix

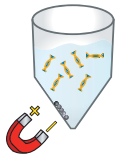


Magnetize and remove supernatant



Wash twice with 70% ethanol

Dry



Elute DNA

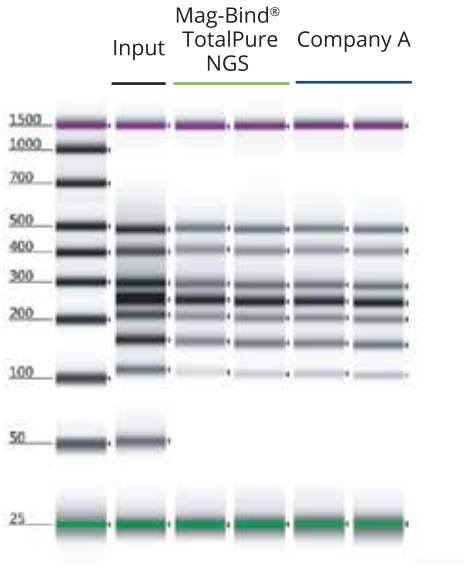
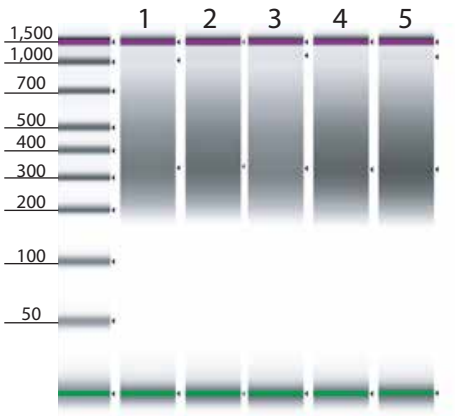


Figure 3. 10 µL of 50 bp DNA ladder was purified with Omega Bio-tek's Mag-Bind® TotalPure NGS and a comparable product from Company A following manufacturer's recommended protocols. The DNA was eluted in 20 µL and analyzed on Agilent's TapeStation® 2200.

Automated Library Prep of KAPA Biosystems' HyperPrep Kits for Illumina

Figure 4. Next-generation sequencing libraries prepared from 350 ng sheared genomic DNA using KAPA Biosystems' HyperPrep Kits (KK8504) and Omega Bio-tek's Mag-Bind® TotalPure NGS on the Hamilton Microlab® STAR. Mag-BIND® TotalPure NGS was used for 2 clean-up steps (0.8x and 1.0x) following KAPA Biosystems recommended protocol for library prep. DNA was analyzed on Agilent's TapeStation® 2200 following library construction.

Sample No.	DNA Average Size (bp)	Conc. (ng/µL)
1	427	30.4
2	431	33.7
3	426	28.5
4	424	37.4
5	419	38.7



Product Description	Vol	Cat No.
Mag-Bind® TotalPure NGS	5 mL	M1378-00
	50 mL	M1378-01
	500 mL	M1378-02