

Thermo Scientific  
GeneJET Nucleic Acid  
Purification Kits

# high yields of pure DNA & RNA from different sources

High Yields • Exceptional Purity • Incredible Value

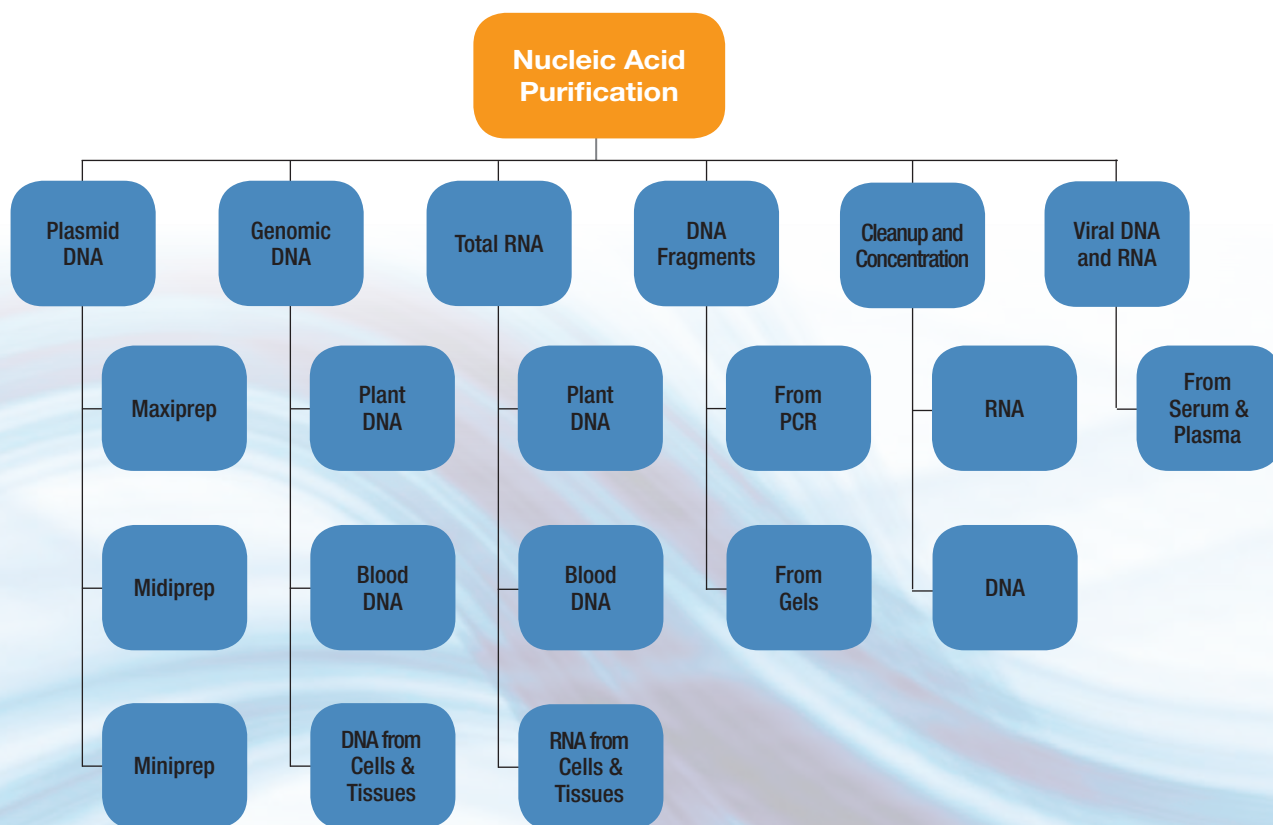


# Reliable DNA and RNA purification

The Thermo Scientific™ GeneJET™ product line contains essential nucleic acid purification tools to support and facilitate your experimental workflow. With more than 30 years of experience in developing and manufacturing molecular biology products, we see a growing demand for simple and reliable tools for DNA and RNA sample preparation. The GeneJET DNA and RNA purification kits address the need for high-purity nucleic acids ready to use in downstream applications and offer detailed protocols for routine and difficult sample types.

- Trusted silica membrane technology in the form of a convenient spin column for purification of DNA and RNA
- Isolate nucleic acids with superior purity and yields compared to other kits on the market
- Purified nucleic acids are ready to use in common downstream applications
- GeneJET kits have been extensively tested on a wide variety of sample types and include specialized protocols

## Thermo Scientific GeneJET nucleic acid isolation products



- For further information visit [thermoscientific.com/genejet](https://thermoscientific.com/genejet)

# Rapid isolation of high-quality plasmid DNA

## GeneJET Plasmid DNA Purification Kits

### GeneJET Plasmid Miniprep Kit

- Small-scale isolation of up to 20 µg of high-quality plasmid DNA in 14 minutes

### GeneJET Plasmid Midiprep Kit

- Medium-scale isolation of up to 200 µg of high-quality plasmid DNA in 60 minutes

### GeneJET Plasmid Maxiprep Kit

- Large-scale isolation of up to 750 µg of high-quality plasmid DNA in 60 minutes

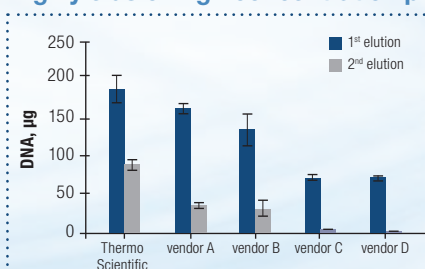
Product	Preps	Cat #
GeneJET Plasmid DNA Miniprep Kit	50	K0502
	250	K0503
GeneJET Plasmid DNA Midiprep Kit	25	K0481
	100	K0482
GeneJET Plasmid DNA Maxiprep Kit	10	K0491
	25	K0492

Specifications for GeneJET Plasmid DNA Purification Kits			
Plasmid Purification Kits	Mini	Midi	Maxi
Bacterial culture volume	5 mL	50 mL	250 mL
Yield	20 µg	200 µg	750 µg
DNA concentration	≥400 ng/µL	≥400 ng/µL	≥400 ng/µL
Purity $A_{260}/A_{280}$	1.75-1.9	1.75-1.9	1.75-1.9
Column binding capacity	20 µg	400 µg	1000 µg
Procedural time	14 min	60 min	60 min
Format and protocol types	Spin columns, capped, preassembled with collection tubes. Centrifugation or vacuum protocol.		

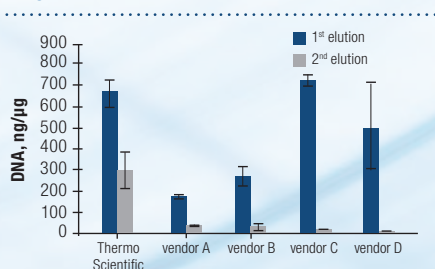
Silica-based membrane technology — save time and improve yields compared to gravity flow columns

Isolated plasmid DNA can be used directly in Thermo Scientific™ FastDigest™ or conventional restriction digestion, sequencing, PCR, in vitro transcription and transfection of robust cell lines

### High yields of high concentration plasmid DNA



▲ Yields of high-copy plasmid DNA obtained using GeneJET plasmid midiprep kit and other kits for midscale plasmid DNA purification at maximal recommended bacterial cell culture volumes.



▲ Concentrations of eluted DNA obtained after the purification of high-copy plasmid DNA using different kits for midscale plasmid DNA purification at maximal recommended bacterial cell culture volumes.

### Consistent and reproducible miniprep yields



▲ A pBluescript-based high copy number plasmid was purified from *E. coli* culture with 6 different GeneJET Spin Columns.

M - Thermo Scientific™ FastRuler™ High Range DNA Ladder 1-6 - plasmid DNA isolated with 6 different GeneJET Spin Columns.

# Efficient genomic DNA purification

## GeneJET Genomic DNA Purification Kits

### GeneJET Genomic DNA Purification Kit

- Purify RNA-free gDNA from a wide variety of tissues or cells in only 20 minutes

### GeneJET Whole Blood Genomic DNA Purification Mini Kit

- Rapidly purify RNA-free gDNA from whole blood and body fluids with no separate cell lysis step

### GeneJET Plant Genomic DNA Purification Mini Kit

- Purify DNA without clogging-prone lysate filtration step
- Material-specific protocols provided
- Recover gDNA greater than 30 kb in size, including nuclear, mitochondrial and chloroplast DNA

Product	Preps	Cat #
GeneJET Genomic DNA Purification Kit	50	K0721
	250	K0722
GeneJET Whole Blood Genomic DNA Purification Mini Kit	50	K0781
	250	K0782
GeneJET Plant Genomic DNA Purification Mini Kit	50	K0791
	250	K0792

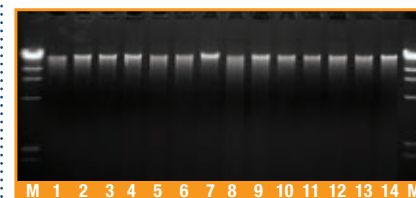
### Specifications for GeneJET Genomic DNA Purification Kits

Genomic DNA Purification Kits	Cells & tissues	Whole Blood	Plant
Amount of sample material	Varies	200 $\mu$ L	100 mg
Yield	Varies	Up to 10 $\mu$ g	Up to 32 $\mu$ g
Purity $A_{260}/A_{280}$	1.7-1.9	1.7-1.9	1.7-1.9
Column binding capacity	$\geq$ 50 $\mu$ g	$\geq$ 50 $\mu$ g	$\geq$ 50 $\mu$ g
Procedural time	20 min	20 min	30 min
Format and protocol	Spin columns, capped, preassembled with collection tubes and individually packed. Centrifugation or vacuum protocol.		

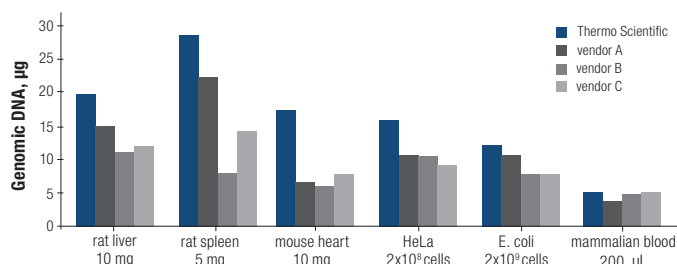
### Isolate genomic DNA from a variety of samples:

- Mammalian cells
- Mammalian tissues:
  - Muscle
  - Heart
  - Liver
- Whole blood
  - Fresh or frozen
  - Anticoagulated blood
  - Buffy coat
  - Bone marrow
  - Body fluids (urine)
- Plants
  - Multiple plant species
  - Various plant tissues (leaves, roots, seed, needles)
- Bacteria
- Yeasts
- Filamentous fungi

### High-integrity genomic DNA purified from various sources



### High yields of genomic DNA purified from various sources



Yields of genomic DNA purified using the GeneJET Genomic DNA Purification Kit and kits from other vendors.

Genomic DNA from different plant material samples purified using the GeneJET Plant Genomic DNA Purification Mini Kit. 1- Arabidopsis, 2- Tobacco leaves, 3- Tomato leaves, 4- Spinach leaves, 5- Wheat leaves, 6- Grape leaves, 7- Onion leaves, 8- Rice leaves, 9- Corn seeds, 10- Sunflower stalk, 11- Corn roots, 12- Beef roots, 13- Cucumber fruit, 14 - Sugar cane.

# Isolate high-purity total RNA from routine and challenging sample types

## GeneJET Total RNA Purification Kits

### GeneJET RNA Purification Kit

- Purify total RNA from a wide variety of sources

### GeneJET Whole Blood RNA Purification Mini Kit

- Purify RNA from whole blood and body fluids without DNase treatment

### GeneJET Plant RNA Purification Mini Kit

- Purify RNA from various plants and plant tissues

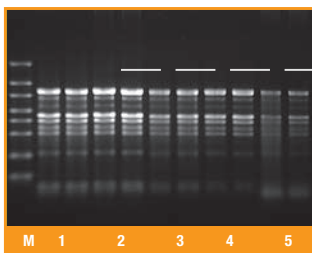
Product	Preps	Cat #
GeneJET RNA Purification Kit	50	K0731
	250	K0732
GeneJET Whole Blood RNA Purification Mini Kit	50	K0761
GeneJET Plant RNA Purification Mini Kit	50	K0801
	250	K0802
Related Product	Preps	Cat #
Thermo Scientific RapidOut DNA Removal Kit	50	K2981

Specifications for GeneJET RNA Purification Kits			
RNA Purification Kits	Cells & tissues	Whole Blood	Plants
Amount of sample material	Varies	500 µl	50 mg
Yield	Up to 70 µg	Up to 5 µg	Up to 70 µg
Purity $A_{260}/A_{280}$	1.9-2.1	1.9-2.1	1.9-2.1
Column binding capacity	>100 µg	>100 µg	>100 µg
Procedural time	15 min	15 min	20 min
Format and protocol types	Spin columns, capped, preassembled with collection tubes and individually packed. Centrifugation protocol.		

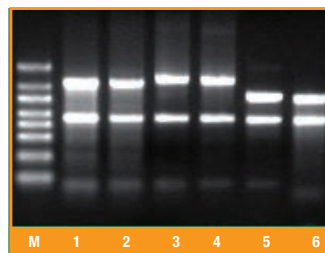
### Isolate RNA from a variety of samples:

- Mammalian cells
- Mammalian tissues:
  - Muscle
  - Heart
  - Liver
- Whole blood
  - Anticoagulated blood
  - Buffy coat
  - Bone marrow
- Plants
  - Multiple plant species
  - Various plant tissues (leaves, roots, seed, needles)
  - Pathogens (virus)
- Bacteria
- Yeasts
- Filamentous fungi

## Total RNA purified from various sources



▲ Total RNA purified from 50 mg of tomato leaves using the GeneJET Plant RNA Purification Kit and kits from other vendors. M- Thermo Scientific™ RiboRuler™ High Range RNA Ladder. 1- Thermo Scientific, 2-5 other vendors.



▲ Total RNA purified from various sources using the GeneJET RNA Purification Kit. M- RiboRuler High Range RNA Ladder (#SM1821) 1- mouse liver, 2- mouse spleen, 3- HeLa cells, 4- Cos-7 cells, 5- *Saccharomyces cerevisiae*, 6- *Escherichia coli* DH5α.

Spin-columns based on silica membrane technology

Specialized and detailed protocols for different sample types

Purified RNA can be used in a wide range of downstream applications

# Effective DNA fragment recovery from reaction mixtures or agarose gels

## GeneJET PCR Purification and Gel Extraction Kits

### GeneJET PCR Purification Kit

- DNA recovery up to 100% (25 bp - 20 kb)
- Effective removal of primers, unincorporated nucleotides, enzymes and salts from PCR and other enzymatic reaction mixtures

### GeneJET Gel Extraction Kit

- DNA recovery up to 95% (25 bp - 20 kb)
- Purify DNA fragments from standard or low-melt agarose gels run with TAE or TBE buffer.

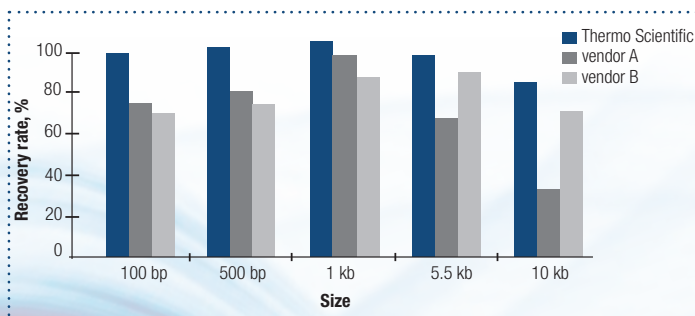
*Purified DNA can be used in downstream applications such as sequencing, restriction digestion, ligation, cloning, and in vitro transcription*

*Spin-columns based on silica membrane technology*

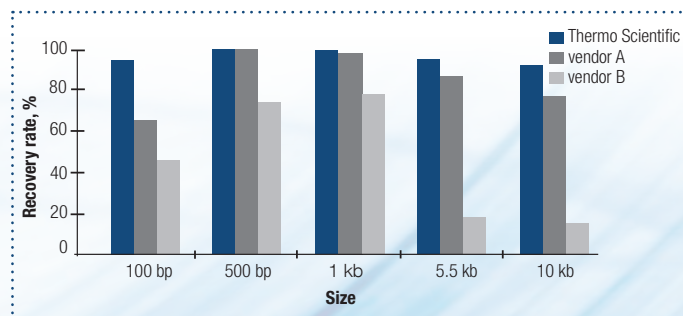
Product	Preps	Cat #
GeneJET PCR Purification Kit	50	K0701
	250	K0702
GeneJET Gel Extraction Kit	50	K0691
	250	K0692

PCR Purification and Gel Extraction Kits		
PCR Purification and Gel Extraction Kits Kit types	PCR Purification	Gel Extraction
Amount of sample material	0.8 mL	1 g agarose gel
Recovery rate	90-100%	70-95%
DNA fragment range	25 bp-20 kb	25 bp-20 kb
Purity $A_{260}/A_{280}$	1.7-1.9	1.7-1.9
Column binding capacity	25 µg	25 µg
Procedural time	5 min	15 min
Format and protocol types	Spin columns, capped, preassembled with collection tubes. Centrifugation or vacuum protocol.	

Superior extraction of large and small DNA fragments from PCR mixtures



Superior extraction of large and small DNA fragments from agarose gels



# Outstanding recovery of pure and concentrated RNA and DNA

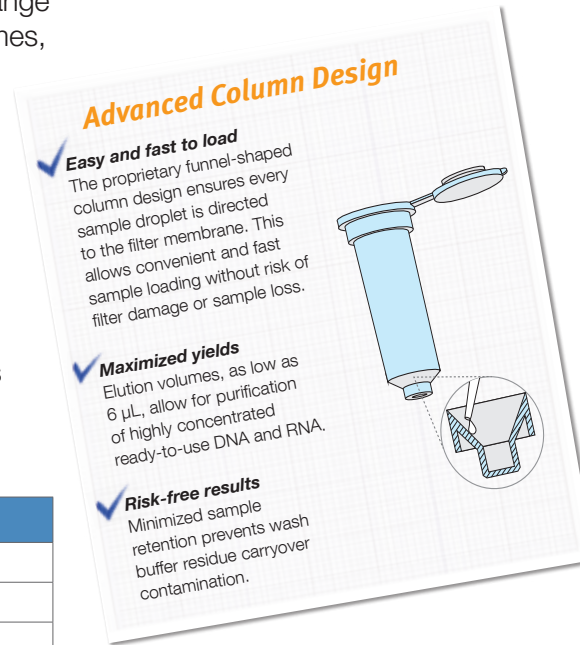
## GeneJET DNA & RNA Cleanup and Concentration Micro Kits

### GeneJET DNA Cleanup and Gel Extraction Micro Kit

- 90-100% recovery in the 100-3,000 bp DNA fragment range
- Efficient removal of reaction components including enzymes, proteins, primers, primer dimers, dNTPs and salts
- Flexible – does not require precise gel slice weighing
- Convenient three-in-one format – gel extraction, DNA concentration and removal of reaction components

### GeneJET RNA Cleanup and Concentration Micro Kit

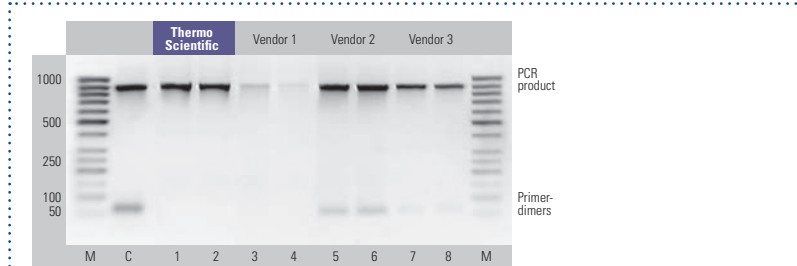
- 85-100% recovery of a high-integrity RNA
- Exceptional purity – efficiently removes enzyme inhibitors as well as DNase I and other enzymes
- Fast and simple – procedure takes less than five minutes
- Convenient two-in-one format – RNA concentration and removal of reaction components



Product	Preps	Cat #
GeneJET DNA Cleanup and Gel Extraction Micro Kit	50	K0831
	250	K0832
GeneJET RNA Cleanup and Concentration Micro Kit	50	K0841
	250	K0842

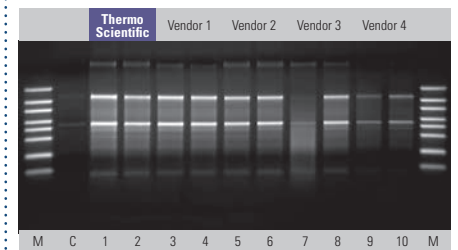
Specification for GeneJET DNA & RNA Cleanup and Concentration Micro Kits		
DNA & RNA Cleanup and Concentration Micro Kits	DNA	RNA
Recovery rate	90 - 100%	85 - 100%
Elution volume	6 - 10 µL	6 - 10 µL
Column binding capacity	10 µg	10 µg
Procedural time	4 min	5 min

### Unmatched efficiency in primer removal from PCR mixtures



▲ The GeneJET Gel Extraction and DNA Cleanup Micro Kit is ideal for cleanup of PCR reaction mixtures. The kit combines efficient removal of primer dimers and nucleotides without loss of the initial PCR product. A 900 bp PCR product was purified using the recommended primer-dimer removal protocols from different vendor kits. M – Thermo Scientific™ O'GeneRuler™ 50 bp DNA Ladder (#SM1133) C – Unpurified PCR product, 1-2 Thermo Scientific, 3-4 – Vendor 1, 5-6 – Vendor 2.

### Concentrate dilute pre-purified RNA sample without damage to RNA integrity



▲ Pre-purified low concentration total RNA from human blood samples was concentrated using recommended protocols from different vendor kits. Purified RNA was analyzed on a 1% agarose gel. M – RiboRuler High Range RNA Ladder (#SM1821), C – RNA sample before concentration. 1-2 – Thermo Scientific, 3-4 – Vendor 1, 5-6 – Vendor 2, 7-8 – Vendor 3, 9-10 – Vendor 4.

# Fast and efficient viral nucleic acid purification

## Viral DNA and RNA Purification Kits

### GeneJET Viral DNA and RNA Purification Kit

- Linear yields from a wide range of viral titers
- Suitable for serum, plasma and cell-free liquids
- Tested with a variety of DNA and RNA viruses (HIV, HBV, HCV, HPV, CMV, EBV)
- Compatible with sensitive downstream assays such as (RT)-PCR, (RT)-qPCR

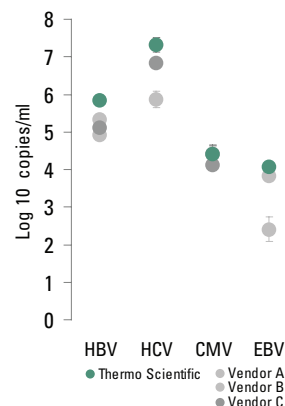
### Viral DNA/RNA Purification Kit (IVD)

- Efficient purification of viral DNA and RNA from a wide range of virus concentrations
- Compatible with fresh or frozen serum and plasma preserved with EDTA or citrate
- Minimized risk of cross contamination CE-marked for compliance with EU Directive 98/79/ECr.

Product	Preps	Cat #
GeneJET Viral DNA and RNA Purification Kit	50	K0821
IVD Product	Preps	Cat #
Viral DNA/RNA Purification Kit* for in vitro diagnostic use	50	DK0011

\*Sales limited within EU. Contact your local provider for product availability in your country.

### Highly efficient nucleic acid purification from various viruses



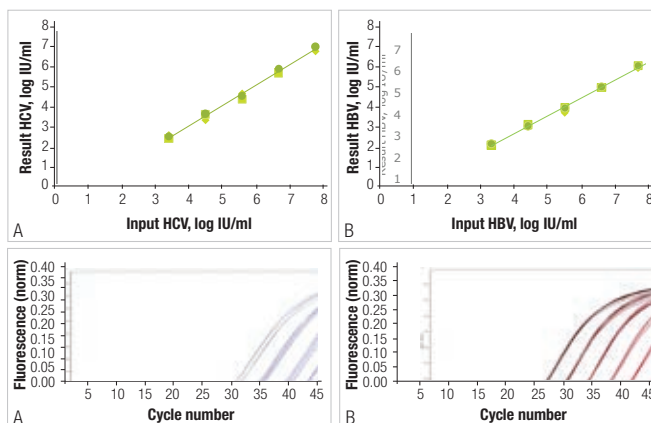
▲ HBV-, HCV-, CMV-, and EBV-infected human plasma or blood samples were purified using the GeneJET Viral DNA and RNA Purification kit and kits from other suppliers. Isolated viral nucleic acids were quantified using a real-time PCR detection assay.

### Linear performance across a wide range of viral nucleic acid concentrations

Detection of viral RNA **A.** and DNA **B.** purified with the GeneJET Viral DNA and RNA Purification Kit in a real-time PCR assay. Samples of various HBV and HCV titers were produced by diluting infected plasma of known viral titer with non-infected plasma.

**A.** Detection of RNA from various HCV sample titers.

**B.** Detection of DNA from various HBV sample titers.



For further information visit

[thermoscientific.com/genejet](http://thermoscientific.com/genejet)

© 2013 Thermo Fisher Scientific Inc. All rights reserved. pBluescript is a trademark of Agilent Technologies, Inc. All other trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.



Part of Thermo Fisher Scientific

Austria: +43 (0) 800 20 88 40 Belgique/België: +32 (0) 056 260 260 Denmark: +45 070 27 99 20  
 España: +34 902 239 303 Finland: +358 (0) 9 8027 6280 France: +33 (0) 3 88 67 53 20  
 Germany: +49 (0) 180 5 258221 Ireland: +353 (0) 1 885 5854 Italia: +39 02 953 28 258  
 Netherlands: +31 (0) 20 487 70 00 Norway: +47 (0) 22 95 59 59 Portugal: +351 21 425 33 50/4  
 Suisse/Switzerland: +41 (0) 56 618 41 11 Sweden: +46 (0) 31 352 32 00 UK: +44 (0)1509 23 11 66

**Thermo**  
SCIENTIFIC

Part of Thermo Fisher Scientific