ZYMO RESEARCH
The Beauty of Science is to Make Things Simple®

Peanuts®
A Biotechnical Newsletter

Vol. 11 Issue 1 2015

Pushing the limits

of plasmid purification

Making History

Reinventing the Plasmid Prep

Plasmid DNA purification has been around for nearly a half century, yet plasmid preparation remains unwieldy and requires time-consuming gravity filtration, centrifugation steps, and isopropanol precipitation.

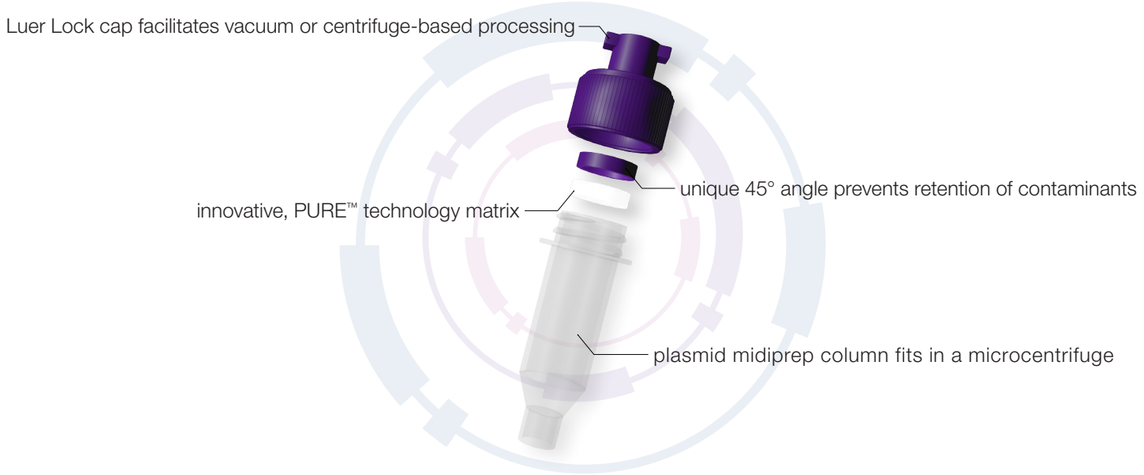
Zymo Research is making history with our plasmid DNA isolation technologies. Our highly innovative portfolio of products offer streamlined workflows that result in ultra-pure, transfection-grade plasmid DNA to be isolated at superior speeds. Unique colored buffers allow for visualization of complete bacterial lysis and neutralization.

The newly developed ZymoPURE™ Plasmid kits feature state-of-the-art technology for the simplest large-scale purification of transfection-grade plasmid DNA. Streamlined methodology avoids time-consuming steps and enables highly-concentrated plasmid DNA to be eluted directly from a microcentrifuge column in 18 minutes.

Imagine recovering plasmid DNA directly from culture. The Zyppy™ Miniprep Kits allow for *in-situ* lysis and the omission of pelleting and re-suspension steps that are common to all other conventional procedures. Plasmid DNA can be isolated in only 8 minutes with our unique Clean-Spin™ columns.

Simplify your workflow with the Zyppy™-96 Miniprep Kits that enable culturing, lysis, and neutralization using the same plate. These kits feature the fastest and simplest high-throughput and automated procedures for purifying high-quality, endotoxin-free plasmid DNA.

Be a part of history with Zymo Research's plasmid DNA technologies. Our portfolio of plasmid purification technologies offer superior speed, quality, performance, and reliability at an affordable price. No matter the size, scale, or application, we have a solution for all of your plasmid DNA needs.



Featuring the ZymoPURE™ Midiprep Spin-Column

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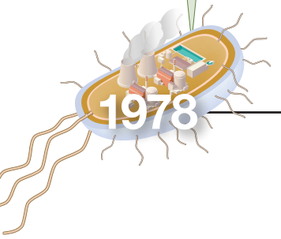
ZYMO RESEARCH
The Beauty of Science is to Make Things Simple®

DNA Purification *Made Simple™*

Plasmid's Rise to Prominence

Over the past 40 years, plasmid DNA has become a major cornerstone of modern research. From understanding genes at their most basic level to potential therapies for human disease, plasmid DNA plays a pivotal role in today's life sciences. Plasmids are naturally occurring extrachromosomal DNA that are most commonly found in bacteria. Much like a Tweet gone viral, plasmids replicate independently of chromosomes and often contain genes that benefit the host for survival, such as antibiotic resistance.

Plasmid DNA was first isolated and purified from bacteria in 1967, about the same time as Tie-dye and Bell-bottoms were in fashion. Scientists have been artificially engineering plasmid DNA in order to unlock the secrets of life ever since. With the characterization of restriction enzymes in the 1960s, the development of bacteria transformation and cloning techniques in the 1970s, and the invention of PCR by Kary Mullis in 1983, plasmid DNA has enjoyed a Rolling Stones-esque career arc and staying power, with seemingly limitless utility.



Plasmid DNA is first used as a way to transform bacteria into manufacturing plants.

In 1978, researchers paid about 63 cents a gallon for gas, listened to music on an 8 Track Player, and managed to clone human insulin in *E. coli*, providing a cheap source of insulin that avoids an immune response in patients.

Plasmid DNA expresses foreign genes in mammalian cells

Further adjustments to expression vectors and transfection techniques made performing recombinant gene studies in mammalian cells as easy as toast.

Plasmid DNA used to generate the first transgenic animal

Researchers Richard Palmiter and Ralph Brinster generated mice expressing thymidine kinase from herpes simplex virus by injecting recombinant plasmid DNA into fertilized mouse embryos. Genomic integration of plasmid DNA ushered in the development of transgenic animals and stable cell lines, adding insane goodies to the researcher's tool box like knock-outs, knock-ins, overexpression, disease models, conditional mutants, fluorescently labeled proteins, and targeted integration that are commonplace today. Who knows? Maybe one day plasmid DNA will make pigs fly.

Plasmid DNA used in genetically modified crops

With some help from the soil bacterium *Agrobacterium tumefaciens*, scientists successfully integrated recombinant plasmid DNA into plant chromosomes.

Various crops including Corn, Soybean, Sugar Beets, Potatoes, Tomatoes, Squash, and Rice have been genetically modified in order to increase growth rate, shelf life, durability, nutritional value, and resistance to disease. Unfortunately, no progress has been made in making kale taste better and don't even get us started on chard.

Plasmid DNA sheds light on gene promoters

Researchers developed a quick method for monitoring promoter activity in mammalian cells by fusing the firefly luciferase gene to clone promoter sequences in plasmid DNA.

Plasmid DNA first used in gene therapy treatments.

Plasmid DNA injected into the muscle tissue successfully transfected cells *in vivo*, thus offering a direct route to a potential therapeutic result.

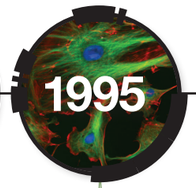
The main limitation of the injectable plasmid DNA approach, aside from the scary long needle, is poor gene transfer efficiency. But, there are several benefits when compared to recombinant viruses, namely: large DNA packaging capacity, high stability at room temperature, low risk for oncogenesis and immunogenicity, simple construction, and easy generation of large quantities.

Clinical trials are under way to evaluate plasmid mediated gene therapy for cardiovascular, neurological, cancer, ocular, inflammatory, and infectious diseases.

Plasmid DNA first used in vaccinations

Plasmid DNA was found to induce an immune response faster than ragweed triggers a runny nose when injected into the skin or muscle of mice, which made for a convenient method to manufacture vaccines.

Unlike traditional vaccines, DNA vaccines stimulate both humoral immunity (antibodies) and cell-mediated immunity (T-cells). Clinical trials are already evaluating DNA based vaccination in humans for a virtual Top-5 of insidious diseases like: HIV, Cancer, Influenza, Malaria, and HPV.



Plasmid DNA used to visualize protein expression in cells

Scientists fused fluorescent markers to proteins in order to light up their target protein like the Las Vegas Strip.

Plasmid DNA can turn gene expression off, just like a power switch

Plasmid DNA engineered to synthesize small RNAs inside the cell provided a unique way to assess gene function by suppressing gene expression in mammalian cells using RNA-mediated interference (RNAi). By using plasmid DNA to generate RNA directly inside the cell, researchers overcame the limitations of traditional RNA-mediated interference techniques.

Programmable and efficient gene targeting *in vivo* using plasmid DNA

By transfecting mammalian cells with plasmid DNA expressing Cas9 and single guided RNA, researchers used the prokaryotic RNA-based adaptive immune system CRISPR/Cas to quickly and precisely engineer mammalian genomes inside living cells.

Plasmid DNA makes targeted genomic integration in rodent embryos possible

Researchers revolutionized conventional gene targeting techniques used to generate transgenic animals by coinjecting single cell embryos with sequence-specific zinc-finger nucleases and plasmid DNA homologous to the ends flanking the cut site in the genomic DNA.

ZymoPURE™

Midi · Maxi · Giga Plasmid Preps

Pushing the limits

of midi, maxi, and giga plasmid purification

Transfection-ready plasmid DNA in 18 minutes

Empower your research with ZymoPURE™ large-scale (Midi/Maxi/Giga) plasmid DNA purification kits. Streamlined methodology and superior technology enables unrivaled speed and performance. Innovative binding technology allows for DNA to be purified using a microcentrifuge column via vacuum or centrifuge in as little as 18 minutes. Ultra-pure transfection-grade plasmid DNA is eluted directly from the spin column into a 1.5 ml microcentrifuge tube and is ready for sensitive downstream applications.

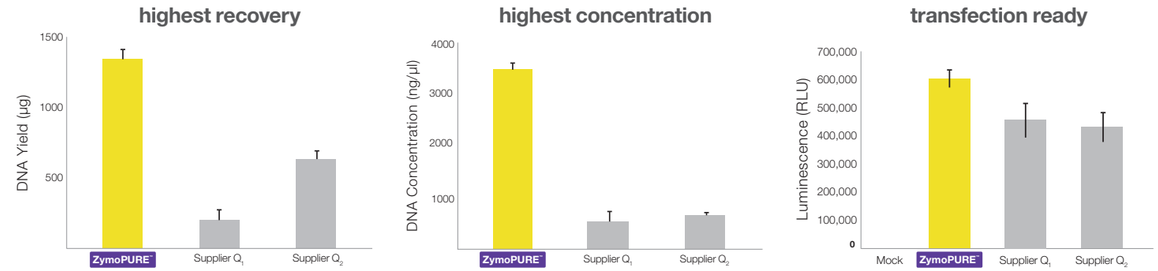
Plasmid DNA concentration and yield from the ZymoPURE™ Maxiprep kit compared to two separate kits from Supplier Q. Plasmid DNA (pGL3®) was isolated from 150 ml of JM109 *E. coli* culture grown overnight following the manufacturer's suggested protocol (in duplicate). One (1) µl of eluted plasmid DNA was visualized post agarose gel electrophoresis. M, ZR 1 kb DNA Marker (Zymo Research).

Streamlined Workflow

Highlights

- The fastest, easiest, most reliable method for large-scale purification of ultra-pure endotoxin-free plasmid DNA.
- Plasmid DNA is eluted directly from a microcentrifuge column and is well suited for transfection and other sensitive applications

Reliable & Consistent



Yield, concentration and transfection efficiency for plasmid DNA isolated using the ZymoPURE™ Maxiprep kit compared to two separate kits from Supplier Q. Plasmid DNA (pGL3®) was isolated from 150 ml of JM109 *E. coli* culture grown overnight following the manufacturer's suggested protocol (in duplicate). HeLa cells cultured in a 96-well plate were transfected with 100 ng of pGL3® Luciferase Reporter Vector using Lipofectamine® 2000 and luciferase expression was measured 48 hours later with the ONE-Glo™ Luciferase Assay System and Veritas™ Microplate Luminometer. Shown are means ± SEM of 8 transfections.

Simply Better

based on feedback from 687 researchers:

95% of researchers consider **ZymoPURE™ easy to use**

85% of researchers **would recommend ZymoPURE™** to a colleague

88% of researchers were satisfied with the overall performance of their kit

Product	Maximum Recovery	Elution Volume	Volume of *E. coli* Culture	Processing Time
ZymoPURE™ Midiprep Kit	300 µg	100-200 µl	50 ml	18 min.
ZymoPURE™ Maxiprep Kit	1200 µg	200-400 µl	150 ml	18 min.
ZymoPURE™ Gigaprep Kit	10 mg	2-5 ml	2.5 L	40-50 min.

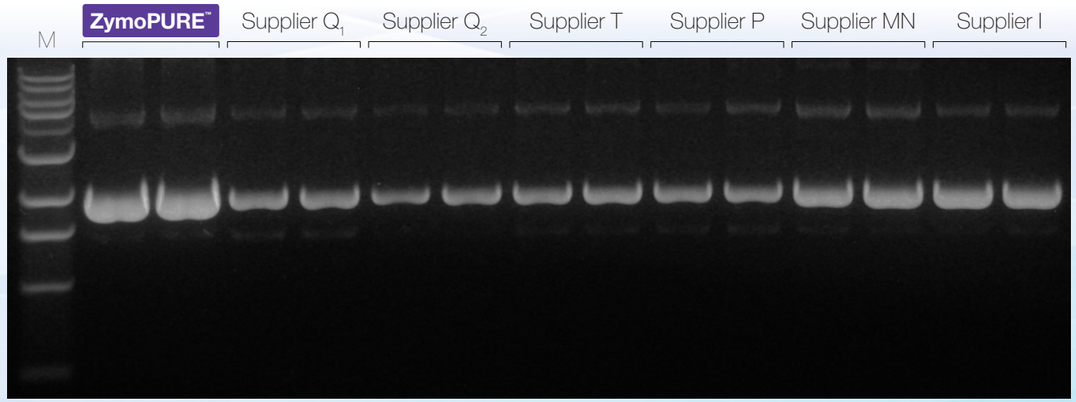
Unrivaled Performance

ZymoPURE™ Plasmid Isolation kits are unrivaled in their performance. These plasmid Midi, Maxi, and Gigapreps provide the fastest and simplest method available to efficiently isolate transfection quality plasmid DNA from *E. coli*. ZymoPURE™ technology uses a modified alkaline lysis method and features novel binding chemistry (patent pending) that results in highly concentrated plasmid DNA directly from a microcentrifuge column.

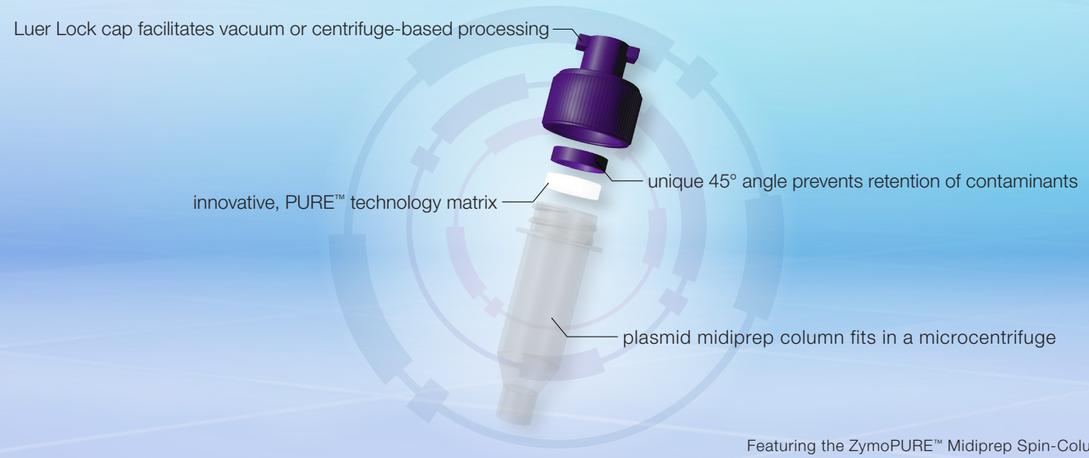
As an added convenience, the ZymoPURE™ Plasmid Isolation Kits contain colored buffers that permit error-free visualization and identification of complete bacterial cell lysis and neutralization. Syringe filters are included for rapid lysate clearing and the unique spin-column design allows the binding step to be performed using a vacuum or centrifuge.

The wash regimen has been optimized to ensure the plasmid DNA is free of endotoxins, salt, and protein so that the plasmid DNA is suitable for sensitive applications without the need for alcohol precipitation.

ZymoPURE™ kits do not require further concentration of plasmid DNA. Routinely recover ≥ 1 µg/µl plasmid DNA that is immediately ready for transfection and other sensitive downstream applications.



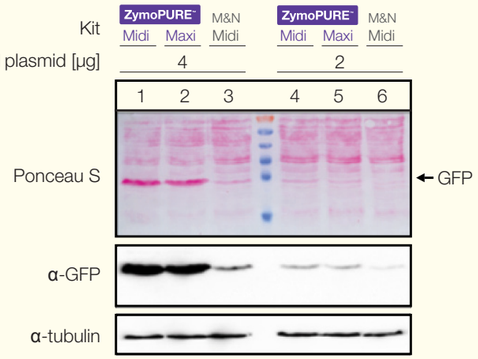
Plasmid DNA yield and concentration from the ZymoPURE™ Maxiprep kit compared to other major suppliers. Plasmid DNA (pGEM®) was isolated from 150 ml of JM109 *E. coli* culture grown overnight following the manufacturer's suggested protocol (in duplicate). One (1) µl of eluted plasmid DNA was visualized post agarose gel electrophoresis. M, ZR 1 kb DNA Marker (Zymo Research).



Featuring the ZymoPURE™ Midiprep Spin-Column

Scientist-approved Performance

Customer data demonstrates that isolated plasmid DNA is **transfection-ready**



Data generated by V.B. at University of Cologne. HeLa cells seeded in a 6-well plate were transfected with either 2 or 4 µg of pCI-neo® + GFP plasmid isolated from 100 ml of bacteria culture using the ZymoPURE™ Midiprep kit, ZymoPURE™ Maxiprep kit, or NucleoBond® Xtra Midi kit from Macherey-Nagel. GFP expression was assesed 48 hours later in cell lysates using western blot and Ponceau S staining. The blot was also probed with an antibody against alpha-Tubulin in order to verify equal loading of samples.

I loved the ease and rapidity, and that you can use a vacuum! I really was imagining this would be another copy-cat kit with no real benefit, but I was really surprised.

W. G.-B. (Massachusetts General Hospital)

This kit is superior to the [Supplier Q] kit in speed of preparation, amount of plasmid recovered and fewer (and easier) protocol steps.

R.K. (University of Alabama at Birmingham)

Product	Size	Catalog Number
ZymoPURE™ Midiprep Kit	25 Preps 50 Preps	D4200 D4201
ZymoPURE™ Maxiprep Kit	10 Preps 20 Preps	D4202 D4203
ZymoPURE™ Gigaprep Kit	5 Preps	D4204

Zyppy® Plasmid Miniprep kit

1. Add lysis buffer **directly** to bacterial culture

2. Neutralize

3. Bind, Wash, Elute

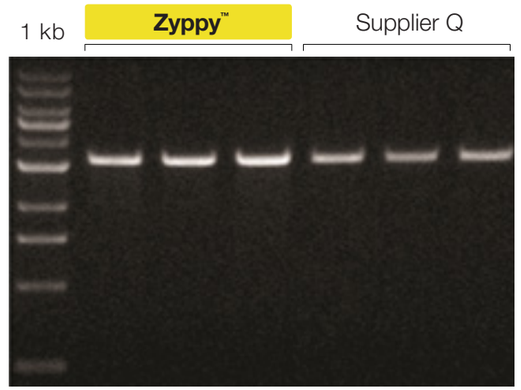
Pellet-free, high-quality plasmid DNA in 8 minutes

Highlights

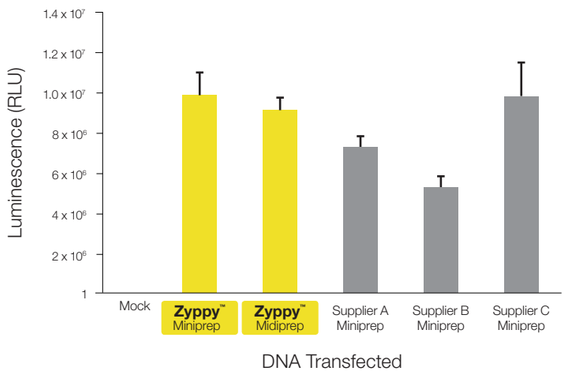
- The fastest, easiest miniprep available for purifying plasmid DNA that is ready for cloning, sequencing, and transfection.
- Pellet-free procedure omits conventional cell pelleting and resuspension steps.

Plasmid DNA isolation directly from culture

The Zyppy™ Plasmid Miniprep Kit features a pellet-free modified alkaline lysis method that bypasses bacterial culture centrifugation and resuspension steps common to classical plasmid preparation procedures. Simply add the uniquely formulated 7X Lysis Buffer directly to your bacterial culture, neutralize, and then purify using the provided Clean-Spin™ column technology. Additionally, the innovative colored buffers included in the kit permit error-free visualization and identification of complete bacterial cell lysis and neutralization. The plasmid DNA is of the highest quality and ready for all sensitive downstream applications.

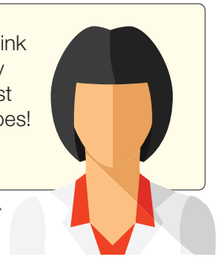


EcoRI digestion of plasmid DNA (pGEM®) isolated from *E. coli* culture using the Zyppy™ Plasmid Miniprep Kit or the QIAprep™ Spin Miniprep kit from Qiagen. The amount of DNA loaded was standardized based on culture volume input. Performed in triplicate.



Luciferase activity in transfected cells. Lysates from cells transfected with plasmid DNA extracted using the pellet-free (Zyppy™ system) and non-pellet-free (suppliers A, B, and C) formats were used to measure luciferase activity. The activity is indicated as relative light units (RLU).

Fast, efficient purification, good with elution of concentrated DNA thanks to a different spin column design, fewer buffers and fewer steps than in other miniprep protocols, all buffers prepared and ready to use straight out of the package, good price. Please don't change anything, the kit works great.
S.K. (Lund University)



It's so FAST! And it works!! I can't think of a way to improve this product. My big problem with it is that it is SO fast that I don't have time to label my tubes!
A.F. (Fairfield University)

Inside Story

Did you know that colored buffers for plasmid DNA isolation were pioneered 10 years ago by scientists at Zymo Research?

One day, while helping out in lab the CEO's daughter, Linda, realized that it's not exactly easy to spot the differences between several bottles of clear liquids. It was easy to misidentify buffer bottles, which lead to incorrectly performed plasmid isolations, and some tense moments around the dinner table. Frustrated, Linda knew that there must be a better way to tell each buffer apart.

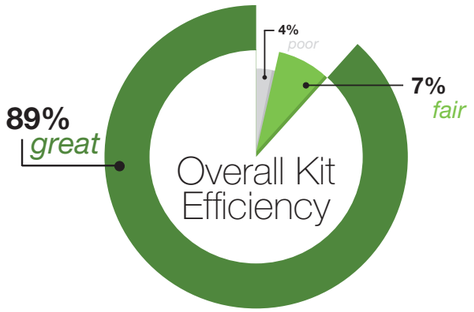
After some creative brainstorming and hard work from the Zymo R&D team, the patented colored buffer system was born. We soon discovered that colored buffers not only make for easy identification, but have important scientific applications as well.

This unique technology allows for easy visualization of complete lysis and neutralization, which leads to superior recoveries and higher purities of the isolated plasmid DNA, not to mention that it kept Linda in good standing at the homestead.

Without this invention, we may still be misidentifying buffer bottles and recovering mediocre plasmid DNA. So, thank you Linda, you've helped make plasmid preps a little bit clearer, so to speak, for us all!

Proven Performance

90% **would recommend**
this kit to another researcher



based on feedback from 384 researchers

Product	Size	Catalog Number
Zyppy™ Plasmid Miniprep Kit	50 Preps	D4036
	100 Preps	D4019
	400 Preps	D4020
	800 Preps	D4037
Zyppy™ Plasmid Midiprep Kit	25 Preps	D4025
	50 Preps	D4026

Zyppy™-96 Plasmid Miniprep

Highlights

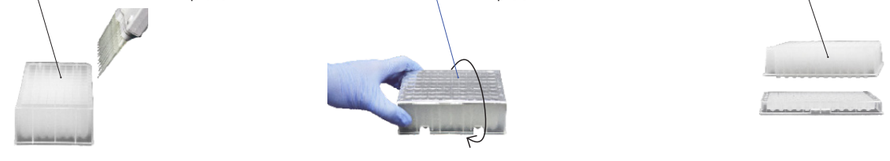
- The fastest and simplest high-throughput procedures for purifying high-quality plasmid DNA.
- Innovative pellet-free procedures and *in-situ* lysis omits cell pelleting and resuspension steps.
- Culture, lyse, and neutralize in the same plate, saving time and reducing plastic waste.

Simplified 96-well plasmid workflow
in-situ culturing-lysis-neutralization

culture & lyse
using patented Zyppy™ chemistries and *in-situ* lysis

neutralize
using the same 96-well plate

bind, wash, elute
ultra-pure, endotoxin-free plasmid DNA



No pelleting. No resuspention. Only 3 plates for the entire process!

Simplify your workflow with the Zyppy™-96 Plasmid Miniprep Kits! The Zyppy™ Pellet-Free procedure from Zymo Research allows for high-throughput and fully automated methods for plasmid purification. With Zyppy's™ easy, pellet-free procedure, the same plate is used to culture, lyse, and neutralize samples. By using the same plate, the Zyppy™-96 Plasmid Miniprep Kits save time and reduce the amount of plastic waste.

In-situ lysis allows for the omission of pelleting and resuspension steps that are common to all other conventional procedures. After the neutralization step, simply bind, wash, and elute high-quality plasmid DNA utilizing our Clean-Spin™ 96-well plate. Once eluted, endotoxin-free plasmid DNA is ready for immediate use in all sensitive downstream applications.

Using an automated platform? Zymo Research's magnetic beads and Zyppy™ Technology makes automating plasmid DNA isolation simple.

Product	Size	Catalog Number
Zyppy™-96 Plasmid Miniprep Kit	2 x 96 Preps	D4041
	4 x 96 Preps	D4042
	8 x 96 Preps	D4043
Zyppy™-96 Plasmid MagBead Miniprep Kit	2 x 96 Preps	D4100
	4 x 96 Preps	D4101
	8 x 96 Preps	D4102

ZR Plasmid Miniprep™ - Classic

Performance & Reliability

The ZR Plasmid Miniprep™-Classic is designed for efficient isolation of plasmid DNA from *E. coli* using a traditional 3-buffer (P1, P2, P3) procedure that is simple, rapid, user-friendly, and reliable. It features a modified alkaline lysis protocol together with a unique Clean-Spin™ column to yield high quality plasmid DNA in minutes. The buffers are color-coded (red, green, yellow) for easy determination of complete cell lysis and neutralization. The innovative Zymo-Spin™ IIN columns yield endotoxin-free plasmid DNA in as little 30 µl. Plasmid DNA purified using the ZR Plasmid Miniprep™-Classic is well suited for use in restriction endonuclease digestion, sequencing, DNA ligation, cloning, PCR, bacterial transformation, transfection, etc.

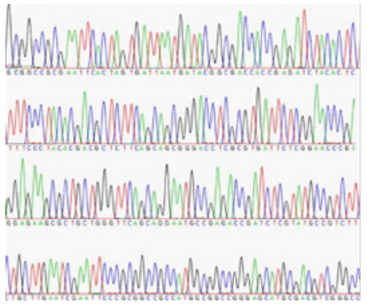
high recovery
up to 25 µg of plasmid DNA

low elution volume
≤ 30 µl

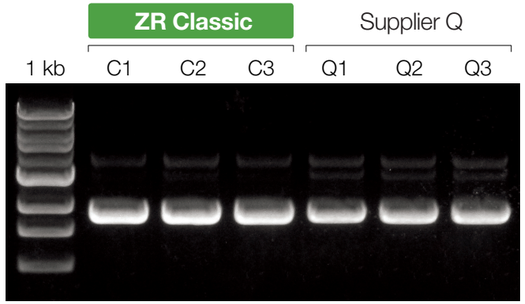
high purity
endotoxin free

easy-to-manage
colored buffers

Sequencing-quality DNA preparations



DNA sequencing chromatogram of plasmid DNA prepared using the ZR Plasmid Miniprep™-Classic.



A comparison of plasmid DNA isolated using the ZR Plasmid Miniprep™- Classic versus Supplier Q demonstrates high quality and purity of isolated samples.

Product	Size	Catalog Number
ZR Plasmid Miniprep™-Classic	100 Preps	D4015
	400 Preps	D4016
	800 Preps	D4054

Zymoprep™ Yeast Plasmid Miniprep

Highlights

- Simple procedures for plasmid isolation from yeast.
- Ideal for low copy and hard-to-isolate plasmids.
- Plasmid DNA is ready for downstream applications such as PCR, transformation, hybridization, etc.

Efficient plasmid recovery

The Zymoprep™ Yeast Plasmid Miniprep Kits provide all the necessary reagents for plasmid isolation from *S. cerevisiae*, *C. albicans* and *S. pombe*, and any fungi whose cell walls are susceptible to yeast lytic enzyme lysis. The procedure is simple and efficient, and there is no need for glass beads or phenol. Reliably recover plasmid DNA from yeast colonies, patches on plates, or as liquid cultures. The system is ideal for low-copy number and hard to isolate plasmids. Eluted plasmid DNA can be used directly for *E. coli* transformation, PCR, and Southern blot analysis.

Procedure for Zymoprep™ Yeast Plasmid Miniprep I & II

Spin down cells

↓

Add solution 1 with *Zymolyase*, incubate to digest cell wall

↓

Standard alkaline lysis process

Zymoprep™ I

Transfer the supernatant to new tubes

Add 400 µl of isopropanol to precipitate the DNA

↓

Centrifuge for 8 minutes

↓

Resuspend plasmid pellet in 35 µl of TE

Zymoprep™ II

Transfer the supernatant to Zymo-Spin™ Columns

↓

Bind
Wash
Elute in 10 µl TE

Product	Size	Catalog Number
Zymoprep™ Yeast Plasmid Miniprep I	100 Preps	D2001
Zymoprep™ Yeast Plasmid Miniprep II	50 Preps	D2004

Mix & Go!

COMPETENT *E. COLI*

The **easiest** and **most efficient** solution for *E. coli* transformation

E. coli transformation in 20 seconds

Mix & Go! competent cells were uniquely designed to completely eliminate the need for heat shock, lengthy incubations, and outgrowth steps. Simply mix DNA with the cells then spread directly to a plate... *Mix & Go!* The competent cells are highly efficient and can be used for cloning, sub-cloning, library construction, etc. These can be purchased as individual 100 µl aliquots or in 96-well format.

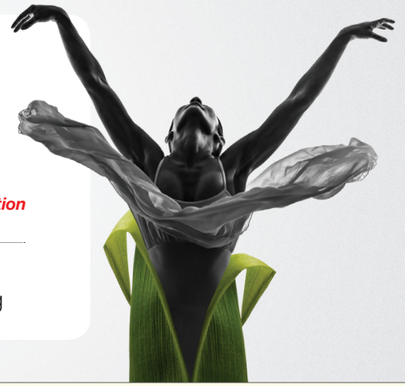
Product	Size	Cat. No.
Zymo 5α (DH5α)	10 x 100 µl	T3007
	96 x 50 µl	T3009
JM109	10 x 100 µl	T3003
	96 x 50 µl	T3005
Zymo 10B (DH10B)	10 x 100 µl	T3019
	96 x 50 µl	T3020
TG1	10 x 100 µl	T3017

*For ampicilin selection only

CLEAN-SPIN™

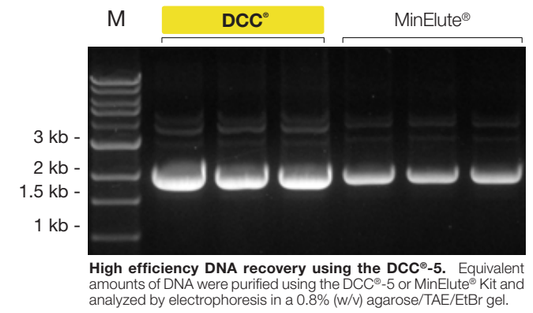
ELUTE PURE DNA

Rapid purification of high quality DNA
ideal for cloning, PCR, & Next-Gen Sequencing



DNA Clean & Concentrator®

Recover ultra-pure DNA from PCR & other sample sources

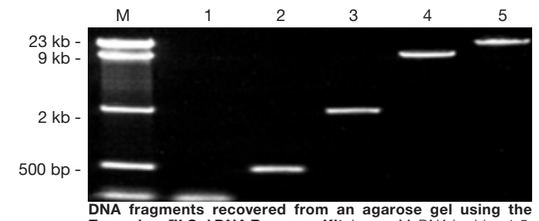


High efficiency DNA recovery using the DCC®-5. Equivalent amounts of DNA were purified using the DCC®-5 or MinElute® Kit and analyzed by electrophoresis in a 0.8% (w/v) agarose/TAE/EtBr gel.

Product	Size	Cat. No.
DNA Clean & Concentrator®-5 (uncapped)	50 Preps	D4003
	200 Preps	D4004
DNA Clean & Concentrator®-5 (capped)	50 Preps	D4013
	200 Preps	D4014
ZR-96 DNA Clean & Concentrator®-5	2 x 96 Preps	D4023
	4 x 96 Preps	D4024

Zymoclean™ Gel DNA recovery

Boost recoveries from agarose gels to > 80%



DNA fragments recovered from an agarose gel using the Zymoclean™ Gel DNA Recovery Kit. Lanes: M: DNA Ladder; 1-5: individual ladder DNA fragments.

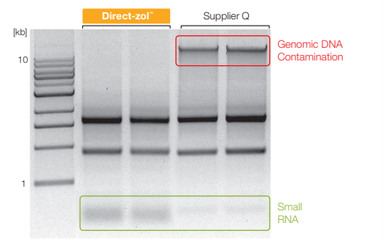
Product	Size	Cat. No.
Zymoclean™ Gel DNA Recovery Kit (uncapped)	50 Preps	D4001
	200 Preps	D4002
Zymoclean™ Gel DNA Recovery Kit (capped)	50 Preps	D4007
	200 Preps	D4008
ZR-96 Zymoclean™ Gel DNA Recovery Kit	2 x 96 Preps	D4021
	4 x 96 Preps	D4022
Zymoclean™ Large Fragment DNA Recovery Kit	25 Preps	D4045
	100 Preps	D4046

Direct-zol™ RNA Purification

TRIzol® in, RNA out

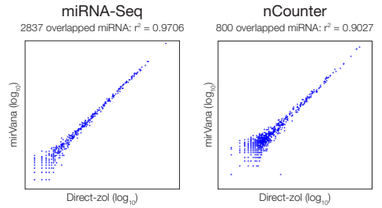
Innovative technology:
Mix sample in TRIzol®, TRI Reagent®, or similar.
Add ethanol & load into the Clean-Spin™ column.
No phase separation, no precipitation, no RNA loss.

High-quality small & large RNA



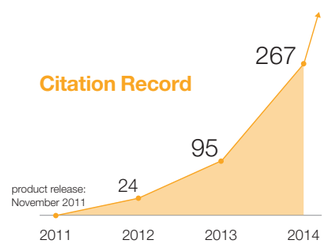
High-quality small and large RNAs are effectively recovered using the Direct-zol™ kit. RNA is DNA-free.

Non-biased miRNA recovery



The data show RNA purified from TRIzol® samples using the Direct-zol™ RNA MiniPrep compared to an unbiased method (mirVana™, Ambion). Micro-RNA analysis was performed using miRNA-Seq (MiSeq®, Illumina) and a direct hybridization assay (nCounter®, Nanostring).

Highly cited



Product	Size	Catalog Number
Direct-zol™ RNA MiniPrep	50 Preps	R2050
	200 Preps	R2052
Direct-zol™ RNA MiniPrep w/ TRI Reagent®	50 Preps	R2051
	200 Preps	R2053

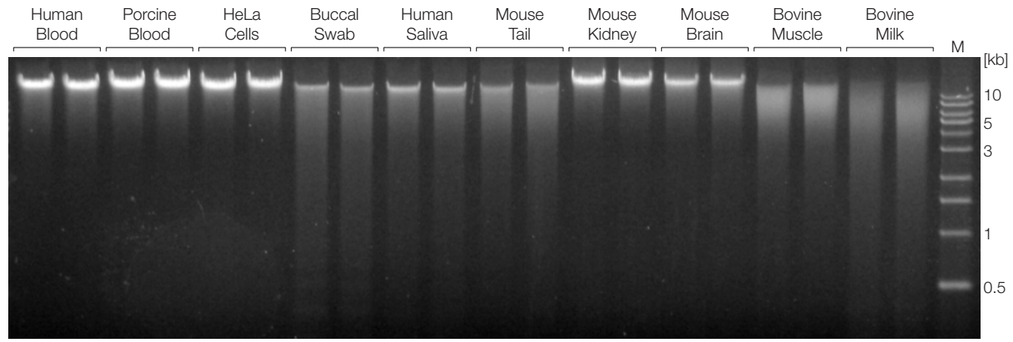
Also available in 96-well plate & magnetic bead formats

Quick-DNA™ Universal Kits

Highlights

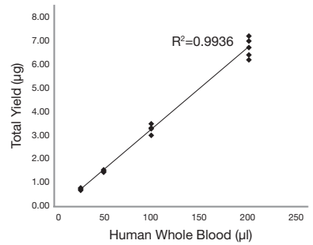
- Extract high-quality DNA easily and reliably from any sample source (biological fluids, cultured cells, and solid tissues).
- Clean-Spin™ technology ensures DNA is ready for all sensitive downstream applications such as qPCR, DNA-seq, arrays, and methylation analysis.

High-quality DNA from any sample



High Quality DNA Obtained from a Wide Range of Biological Samples Using the *Quick*-DNA™ Universal Kit. DNA purified using the *Quick*-DNA™ Universal Kit is ultrapure, highly concentrated, and ready for all downstream applications. Input DNA was standardized to 300 ng and analyzed in a 1% (w/v) TAE/agarose/EtBr gel (shown above). The size marker "M" is a 1 kb ladder (Zymo Research).

Reliable & Consistent



DNA Yields Increase Linearly with Increasing Volumes of Human Whole Blood Using the *Quick*-DNA™ Universal Kit.

Purity Redefined

Clean-Spin™ Technology Ensures No Carryover of Buffer, Salts, or Other PCR Inhibitors. DNA is ready for all sensitive downstream applications such as qPCR, Next-Gen Sequencing arrays, and methylation analysis.

Product	Input	Size	Cat. No.
Quick-DNA™ Universal Kit	≤ 200 µl biological fluid ≤ 5 x 10^6 cells ≤ 25 mg solid tissue	50 Preps	D4068
		200 Preps	D4069
Quick-DNA™ Universal 96 Kit	≤ 50 µl biological fluid ≤ 1 x 10^6 cells ≤ 5 mg solid tissue	2 x 96 Preps	D4070
		4 x 96 Preps	D4071

ZYMO RESEARCH

The Beauty of Science is to Make Things Simple®

DNA Purification *Made Simple™*

"In terms of convenience, time and yield,
Zymo was the clear winner."

S.B. (New Zealand Institute for Plant & Food Research)

"The Maxi kit is the
same quality that I have come to expect
with other Zymo products."

C.H. (Ann and Robert H. Lurie Children's Hospital of Chicago)

"Thank you for letting me try this product out. I have become a new Zymo fan.
Keep up the good work you guys are doing over there."

L.T. (University of Texas–Pan American)

www.zymoresearch.com Tel: (949) 679-1190

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