



High and Low Copy Plasmid Purification

CosMCPrep Plasmid Purification Kit

CosMCPrep is a versatile plasmid purification procedure based on SPRI paramagnetic bead-based technology. It uses a single protocol to purify a variety of high and low copy number templates while maintaining the flexibility to support both manual and automated processing. This kit enables:

- Isolation of high quality plasmids
- A Single protocol for the purification of all template types
- Automation procedures to minimize variability in plasmid yield and quality

High recovery of high-quality, small-plasmid DNA and large-plasmid DNA from *E. coli* and *Pseudomonas aeruginosa*

PLASMID TYPE	CONCENTRATION (ng/ μ L)	YIELD (μ g)
High copy number small (<10kb) plasmid	359.2	14.4
High copy number small (<10kb) plasmid Isolated from <i>Pseudomonas</i>	120.0	4.8
Naturally occurring large (>100kb) plasmid	90.3	3.6

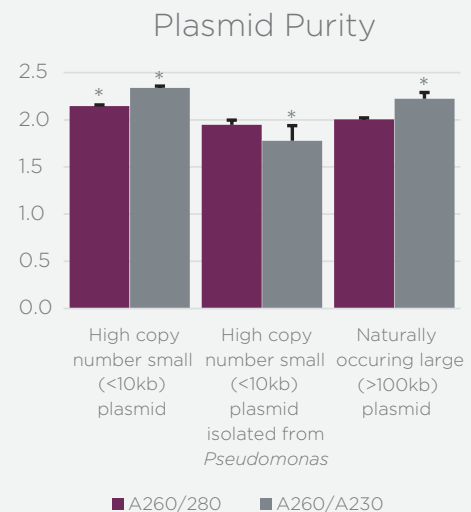
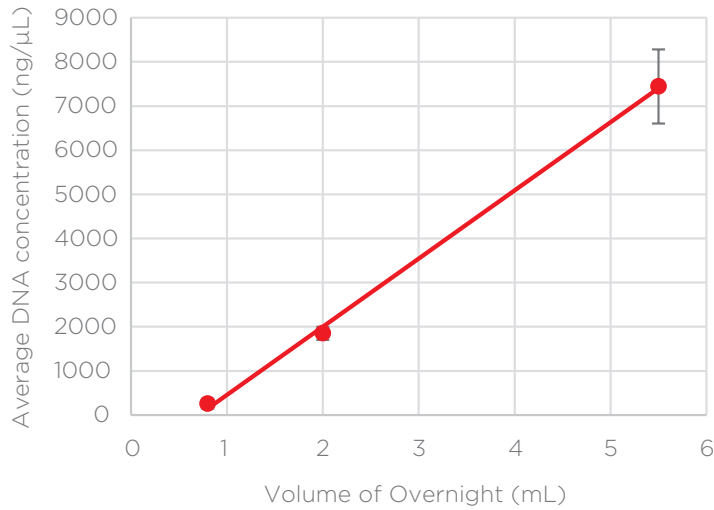


Figure 1. Using a CosMCPrep kit, plasmid DNA was isolated from two *E. coli* strains; one of the strains carried a high copy small (<10kb) plasmid, and the other strain carried a naturally occurring large (>100kb) plasmid and from *P. aeruginosa* carrying a high copy small plasmid. The concentration and yield of the plasmid DNA was quantified using the NanoDrop (Thermo Fisher Scientific). The plasmid purity was assessed using the NanoDrop (Thermo Fisher Scientific). Both the A₂₆₀/A₂₈₀ and A₂₆₀/A₂₃₀ ratios for all of the plasmids are within satisfactory ratios for downstream applications.

*Acceptable ratios for A₂₆₀/A₂₈₀ are 1.8 and 2.0 and for A₂₆₀/A₂₃₀ are 2.0-2.2, but due to varying nucleotide ratios and DNA concentrations the

ratios can be higher. (ThermoScientific T042-Technical Bulletin)

Do a mini, midi, or maxi prep all using the same kit



VOLUME OF OVERNIGHT (mL)	AVERAGE CONCENTRATION (ng/μL)	AVERAGE YIELD (μg)	AVERAGE A_{260}/A_{280}	AVERAGE A_{260}/A_{230}
0.8	258	10.3	2.1	2.0
2	1893	74.0	2.2	2.8
5.5	2978	298.0	1.9	2.4

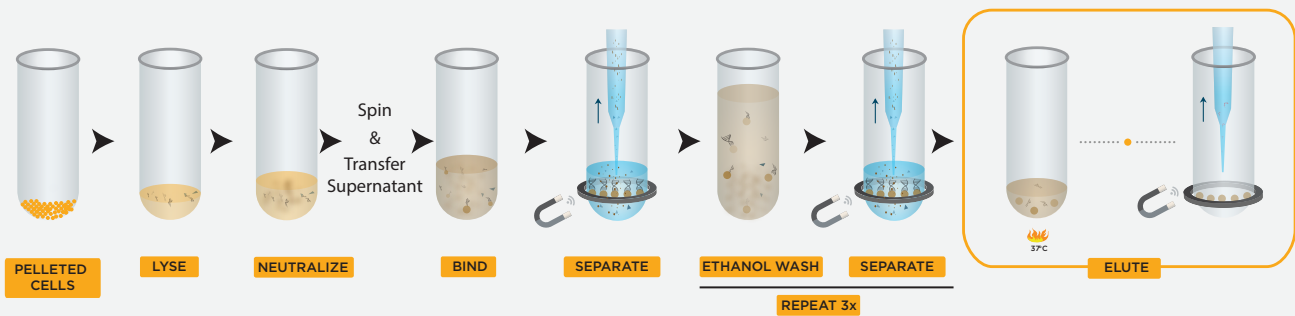
in linear increase in plasmid concentration.

Compatible Plasmid Types

- Low Copy Number Plasmids
- High Copy Number Plasmids
- BACs
- Cosmids
- Fosmids
- Large Naturally Occurring Plasmids shown in this data sheet

Figure 2. Small (<10kb) high copy number plasmid was isolated from *E. coli*. Three volumes of the same overnight growth were lysed and the plasmid was isolated using the CosMCPrep kit. The larger input resulted

Visual Workflow



- 1 Pellet Cells
- 2 Resuspend cells in RE1
- 3 Lyse cells in L2 solution
- 4 Add N3 solution to neutralize the lysis
- 5 Pellet lysis and transfer the supernatant
- 6 Bind plasmid DNA to magnetic beads

- 7 Separate magnetic beads from contaminants
- 8 Wash magnetic beads with 70% ethanol to remove contaminants
- 9 Repeat wash 3 times
- 10 Elute plasmid from magnetic beads
- 11 Transfer to new plate

Extraction of plasmid DNA using a CosMCPrep kit requires less hands-on time and fewer pipetting steps compared to extraction using column-based kits

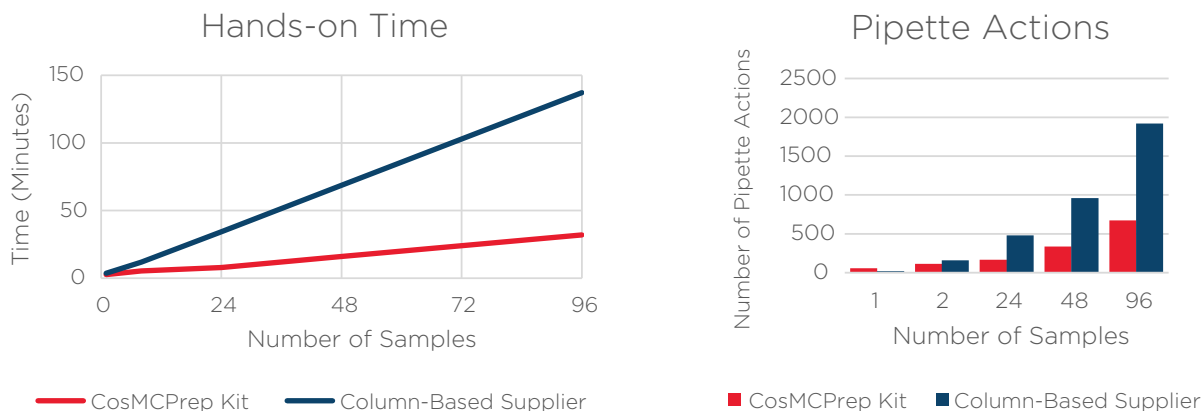
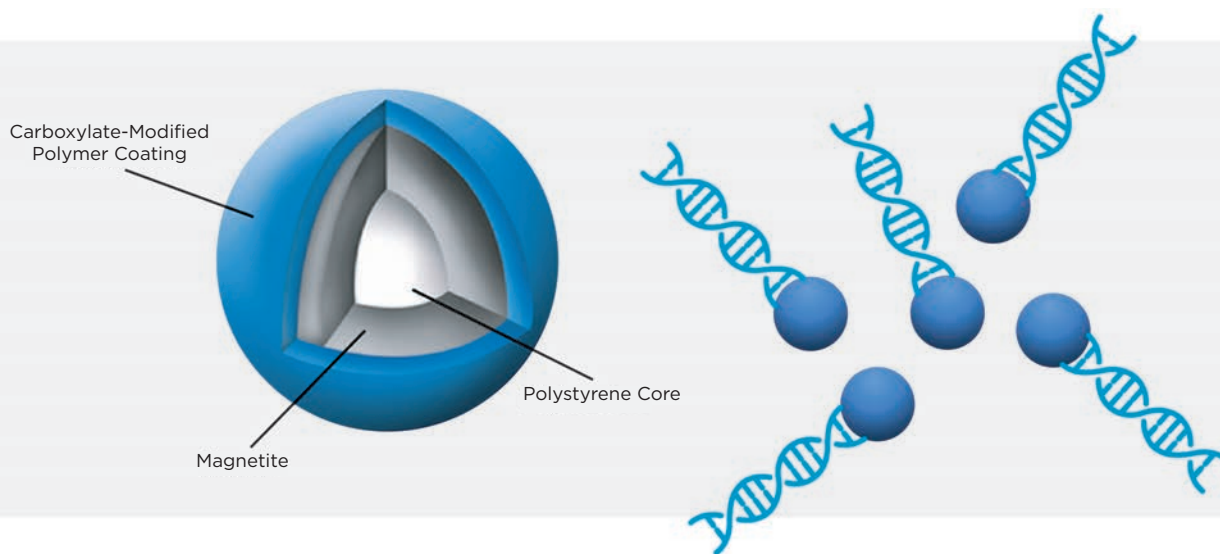


Figure 3. (Left) Represents total time to prep plasmids from a sample for 1 to 96 samples using CosMCPrep or a column-based kit. At 10 samples, hands-on time to prep plasmids is faster using a CosMCPrep kit. (Right) The total number of pipette actions, which includes dispensing in a sample, mixing a sample, and discarding tips, required for 1, 8, 24, 48, and 96 samples. With the ability to use a multichannel pipette there are significantly fewer pipette actions that need to take place than with column-based kits.



Advancing science is in our DNA

From the Human Genome Project to today’s quest for precision medicine, we’ve long been invested in providing genomic products that reduce complexity and improve productivity.

Our reagent portfolio is powered by patented SPRI technology, widely known for use in our AMPure XP reagent, which uses paramagnetic beads to selectively bind nucleic acids by type and size. SPRI enables our chemistries to deliver high-performance isolation, purification and clean-up protocols supporting applications such as qPCR, ddPCR, Sanger sequencing, next-generation sequencing (NGS) and microarrays.

Our chemistries can be used interchangeably between manual or automated methods combining optimum performance with unsurpassed flexibility.

CosMCPrep kits are available in two sizes based on your throughput needs.

Contact your local sales representative or visit beckman.com to request a quote.

PRODUCT INFORMATION

PART NO	NAME	PREPS
A37064	CosMCPrep	384
A29174	CosMCPrep	4000



Not intended or validated for use in the diagnosis of disease or other conditions

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