

High-Yield, Rapid Cell-Free DNA Isolation from Urine

NextPrep-Mag™ URINE cfDNA ISOLATION KIT

- Ideal for extracting DNA from urine for cell-free analysis
- Generates highly concentrated libraries using few PCR cycles
- Allows wide range of urine volumes to be processed (< 1 mL - > 20 mL)
- Automation friendly, mag-bead based format
- Fast, 30 minute protocol with minimal hands-on time
- Low elution volumes
- Ideal for NGS library prep
- No vacuum pumps, vacuum manifolds, or column extenders required

The NextPrep-Mag™ Urine cfDNA Isolation Kit is designed for extracting cell-free DNA (cfDNA) from urine, using a fast magnetic bead-based format requiring minimal hands-on time. The isolated cfDNA is ideal for next generation sequencing and PCR analysis. Suitability of the DNA for use in NGS library construction has been verified using the Bioo Scientific NEXTflex™ Cell Free DNA-Seq Library Prep Kit.

Protocol

The procedure, which can be completed in approximately 30 minutes, includes an initial lysis and DNA binding step, wash steps, and elution of cfDNA from the magnetic beads. A distinguishing feature of the kit is the very rapid magnetic bead attraction steps.



NextPrep-Mag™ Urine cfDNA Isolation Kit Comparison to the QIAGEN® QIAamp® Circulating Nucleic Acid Kit

	NextPrep-Mag™ Urine cfDNA Isolation Kit	QIAamp® Circulating Nucleic Acid Kit
Prep Time	30 minutes	1 hour & 25 minutes
Prep Method	Mag bead-based	Column-based
Recommended Urine Input	1 - 20 mL	1 - 4 mL

Bioanalyzer® HS DNA Chip Trace for cfDNA-Seq Libraries

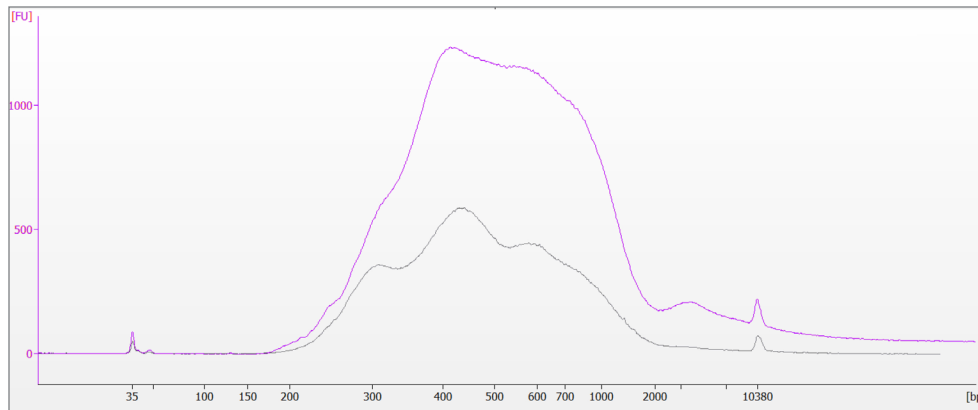


Figure 1. DNA libraries constructed with the NEXTflex™ Cell Free DNA-Seq Kit, from cfDNA isolated from urine of a healthy pregnant donor carrying a male fetus, using either the NextPrep-Mag™ Urine cfDNA Isolation Kit (purple) or the QIAGEN® QIAamp® Circulating Nucleic Acid Kit (gray). For both libraries, the maximum input volume of cfDNA was used (32 uL), and the number of PCR cycles was adjusted according to the mass amount of cfDNA present in the input. The library constructed with cfDNA isolated using the NextPrep-Mag Urine cfDNA Isolation Kit was amplified for 9 PCR cycles, while the library constructed with DNA isolated using the QIAGEN® QIAamp® Circulating Nucleic Acid Kit was amplified for 14X PCR cycles.

Table 1. Data obtained from the above libraries.

Library	Reads	Seq Length	%GC	Seq Dup Levels % Remain if Deduped	Mapped (gg38 Canonical)
NextPrep-Mag™	82,451	35-151	47%	99.72	93.77
QIAaMP®	69,639	35-151	43%	99.68	92.15

Cat #	Product	Quantity
3826-01	NextPrep-Mag™ Urine cfDNA Isolation Kit (< 1 mL - 4 mL)	12 - 50 isolations
3826-02	NEXTprep-Mag™ Urine cfDNA Isolation Kit (4 mL - 20 mL)	5 - 25 isolations