



*"WE MAKE NGS BETTER"*

# HighPrep™ PCR

Catalog Nos. AC-60005, AC-60050, AC-60250, AC-60500  
Manual Revision v2.0

Efficient clean-up for post PCR  
and fragment size-selection for  
NGS library construction

- Magnetic beads based chemistry
- No centrifugation or filtration
- Efficient clean-up
- Precise size-selection

## PROTOCOL

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## Product Description

The HighPrep™ PCR clean-up system is based on paramagnetic bead technology designed for an efficient purification of amplicons and size-selection of DNA fragments in library preparation for NGS. The purification consists of removal of salts, primers, primer-dimers, and dNTPs. DNA fragments are selectively bound to the magnetic bead particles; and highly purified DNA is eluted with low salt elution buffer or water which can be used directly for downstream applications. This protocol can be used for manual procedure as well as guideline for adapting the kit to automatic liquid handling instruments. For availability of ready-to-run scripts please contact MagBio Genomics.

Amplicons purified with the HighPrep™ PCR system are ready to be used in the following applications:

- PCR
- Mutation detection and genotyping
- Sequencing (Sanger and Next Generation)
- Microarrays
- Restriction enzyme clean-up
- Cloning

## Process

HighPrep™ PCR uses a simple 3 steps procedure: Bind-Wash-Elute. HighPrep™ PCR is added to the PCR reaction sample. The protocol utilizes a magnet plate (magnet stand) for processing the PCR reaction sample. During the process, contaminants and salts are washed off and pure DNA is eluted, ready to be used in subsequent applications.

## Product Specifications

Product Number	Description	Number of Reactions	Storage Conditions
AC-60005	HighPrep™ PCR - 5 mL	278	2-8°C <b>DO NOT FREEZE</b>
AC-60050	HighPrep™ PCR - 50 mL	2,778	
AC-60250	HighPrep™ PCR - 250 mL	13,890	
AC-60500	HighPrep™ PCR - 500 mL	27,780	

Number of reactions is based on typical 10µL PCR reaction volume.

Volume of HighPrep™ PCR reagent per reaction = 1.8 x (PCR Reaction Volume)

## Materials Supplied in the Kit

- HighPrep™ PCR paramagnetic beads solution
- Store at 2-8°C. DO NOT FREEZE. HighPrep™ PCR is stable for 14 months when stored at 2-8°C.
- Thoroughly shake the HighPrep™ PCR reagent to resuspend the beads before use.

## Equipment and Reagents to Be Supplied by User:

- 80% ethanol (Prepared from non denatured ethanol)
- 10mM TRIS-HCL pH 8.0 (DNA Elution)
- Reagent grade water
- 1mM EDTA

## Magnet (Stand and Plate):

For 1.5mL tube format: MagBio MagStand12 - Magnet Stand (1.5ml x 12)

MagBio Genomics, Inc., Cat# MBMS-12, [www.magbiogenomics.com](http://www.magbiogenomics.com)

For 96 well format: 96 well cycling plate

MagBio Magnetic Separation Device - (96 well microplate format)

MagBio Genomics, Inc., Cat# MYMAG-96, [www.magbiogenomics.com](http://www.magbiogenomics.com)

For 384 well format: 384 magnet plate

## Reaction Plate:

For 96 well format: 96 well cycling plate

For 384 well format: 384 well cycling plate

## HighPrep™ PCR clean-up system - 96 well protocol

⚠ Bring the **HighPrep™ PCR** to room temperature for at least 30 min before use.


1. Shake thoroughly the **HighPrep™ PCR** reagent to fully resuspend the magnetic beads.
2. Transfer PCR reaction to appropriate 96-well plate. For 50µl reaction, adjust volume using sterile water.
3. Add **HighPrep™ PCR** reagent volume according to the PCR reaction. See table below to determine appropriate volume.


PCR Reaction Volume (µL)	HighPrep™ PCR Volume at 1.8X (uL)*
10	18
20	36
50	90

\* Formula used to calculate the volume of **HighPrep™ PCR** reagent needed for PCR reaction:  
**HighPrep™ PCR reagent volume per reaction = 1.8 X PCR reaction volume.**

4. Mix thoroughly the **HighPrep™ PCR** reagent and PCR sample by mix pipetting up and down 6-8 times.
5. Incubate the mixture for 5 minutes at room temperature.

6. Place the sample plate on the 96 magnetic separation device for 3 minutes or until the solution clears. Beads will pull to the side of the well.
7. With the sample plate still on the magnet, remove and discard the supernatant by pipetting.
 

 *Do not disturb the attracted beads while aspirating the supernatant.*
8. With the sample plate on the magnet, add 200 µl of 80% ethanol to each well and incubate for 30 seconds at room temperature.
9. With the plate still on the magnet, remove and discard the supernatant by pipetting.
10. Repeat steps 8-9 for a total of two 80% ethanol washes.
11. Dry the beads by incubating the plate for 10-15 minutes at room temperature with the plate still on the magnetic separation device.
 

 *It is critical to completely remove all traces of alcohol but take caution in not over drying the beads as this will reduce the yield.*
12. Remove the sample plate from the magnetic separation device. Add 40µl of elution buffer (reagent grade water, TRIS-HCl pH 8.0 or TE buffer) to each well and pipet up and down 5 times to mix. Prewarming the elution buffer at 55°C can increase the yield.
13. Incubate for 2 minutes at room temperature.
14. Place the sample plate back on the magnetic separation device and wait 3 minutes or until the magnetic beads clear from the solution.
15. Transfer the eluate (cleared supernatant) to a new plate for storage or for subsequent applications.

## HighPrep™ PCR clean-up system - 384 Well Format

1. Shake thoroughly the **HighPrep™ PCR** reagent to fully resuspend the magnetic beads.
2. Transfer PCR reaction to appropriate 384-well plate. For 50µl reaction, adjust volume using sterile water.
3. Add **HighPrep™ PCR** reagent volume according to the PCR reaction. See table below to determine appropriate volume.

PCR Reaction Volume (µL)	HighPrep™ PCR Volume at 1.8X (µL)*
5	9
7	12.6

\* Formula used to calculate the volume of HighPrep™ PCR reagent needed for PCR reaction:  
**HighPrep™ PCR reagent volume per reaction = 1.8 X PCR reaction volume.**

4. Mix thoroughly the **HighPrep™ PCR** reagent and PCR sample by mix pipetting up and down 6-8 times.
5. Incubate the mixture for 5 minutes at room temperature.
6. Place the sample plate on the 384 magnetic separation device for 2 minutes or until the solution clears. Beads will pull to the side of the well.
7. With the sample plate still on the magnet, remove and discard the supernatant by pipetting.  
*⚠ Do not disturb the attracted beads while aspirating the supernatant.*
8. With the sample plate on the magnet, add 30 µl of 80% ethanol to each well and incubate for 30 seconds at room temperature.
9. With the plate still on the magnet, remove and discard the supernatant by pipetting.
10. Repeat steps 8-9 for a total of two 80% ethanol washes.
11. Dry the beads by incubating the plate for 3-5 minutes at room temperature with the plate still on the magnetic separation device.  
*⚠ It is critical to completely remove all traces of alcohol but take caution in not over drying the beads as this will reduce the yield.*
12. Remove the sample plate from the magnetic separation device. Add 30 µl of elution buffer (reagent grade water, TRIS-HCl pH 8.0 or TE buffer) to each well and pipet up and down 5 times to mix. Prewarming the elution buffer at 55°C can increase the yield.
13. Incubate for 2 minutes at room temperature.
14. Place the sample plate back on the magnetic separation device and wait 2 minutes or until the magnetic beads clear from the solution.
15. Transfer the eluate (cleared supernatant) to a new plate for storage or for subsequent applications.

## DNA Size-Selection

To obtain a custom protocol for DNA size-selection of a specific fragment size, contact [support@magbiogenomics.com](mailto:support@magbiogenomics.com).

## Ordering and Related Product Information

### GENSeq™ DNA Library Prep Kit

Catalog No.	Description	Preps
GSDL-1024	Preparation of DNA libraries for next generation sequencing (NGS) applications	24
GSDL-1048	Preparation of DNA libraries for next generation sequencing (NGS) applications	48
GSDL-1096	Preparation of DNA libraries for next generation sequencing (NGS) applications	96

### GENSeq™ Onco Profiler System

Catalog No.	Description	Preps
GSOP-16	Solid tumor genomic profiling system	16
GSOP-48	Solid tumor genomic profiling system	48
GSOP-96	Solid tumor genomic profiling system	96

### GENSeq™ Hema Profiler System

Catalog No.	Description	Preps
GSHP-16	Blood cancer genomic profiling system	16
GSHP-48	Blood cancer genomic profiling system	48
GSHP-96	Blood cancer genomic profiling system	96

### GENSeq™ Onco Plus Panel

Catalog No.	Description	Preps
GSO-16	Fixed probes panel for solid tumor genomic profiling	16
GSO-48	Fixed probes panel for solid tumor genomic profiling	48
GSO-96	Fixed probes panel for solid tumor genomic profiling	96

### GENSeq™ Hema Plus Panel

Catalog No.	Description	Preps
GSH-16	Fixed probes panel for blood cancer genomic profiling	16
GSH-48	Fixed probes panel for blood cancer genomic profiling	48
GSH-96	Fixed probes panel for blood cancer genomic profiling	96

### Post PCR and Next Gen library prep clean-up system

Catalog No.	Product
RC-90005	HighPrep™ RNA Elite (5 mL)
RC-90050	HighPrep™ RNA Elite (50 mL)
RC-90250	HighPrep™ RNA Elite (250 mL)
RC-90500	HighPrep™ RNA Elite (500 mL)

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## Ordering and Related Product Information

### cfDNA Purification Kit

Catalog No.	Product	Description	Preps
CFK-D50-400UL	CF-Kapture 21 Kit (200-400µl)	Purification of cell-free DNA (cfDNA) from 200-400 µl STABILIZED plasma	50
CFK-D50-2ML	CF-Kapture 21 Kit (1-2ml)	Purification of cell-free DNA (cfDNA) from 1-2 ml STABILIZED plasma	50
CFK-D50-5ML	CF-Kapture 21 Kit (3-5ml)	Purification of cell-free DNA (cfDNA) from 3-5 ml STABILIZED plasma	50

### Whole blood stabilization tubes

Catalog No.	Product	Description
BS21-CF10-100	Blood STASIS 21-ccfDNA 9 mL (100)	100 tubes: 2 ml Additive, 7 ml blood draw volume
BS21-CF6-100	Blood STASIS 21-ccfDNA 6 mL (100)	100 tubes: 1.5 ml Additive, 4.5 ml blood draw volume
BS21-CF3-200	Blood STASIS 21-ccfDNA 3 mL (200)	200 tubes: 0.5 ml Additive, 2.5 ml blood draw volume
BS21-DR10-100	Blood STASIS 21-DNA/RNA 9 mL (100)	100 tubes: 2 ml Additive, 7 ml blood draw volume
BS21-DR6-100	Blood STASIS 21-DNA/RNA 6 mL (100)	100 tubes: 1.5 ml Additive, 4.5 ml blood draw volume
BS21-DR3-200	Blood STASIS 21-DNA/RNA 3 mL (200)	200 tubes: 0.5 ml Additive, 2.5 ml blood draw volume

### gDNA Isolation Kit

Catalog No.	Product	Description	Preps
HPBTS-D96	HighPrep™ Blood & Tissue DNA Kit	Genomic DNA isolation from 20-250 µl of blood, lysate of tissues, mouse tails, cultured cells, or buccal swabs	96
HPBTS-D96X4	HighPrep™ Blood & Tissue DNA Kit	Genomic DNA isolation from 20-250 µl of blood, lysate of tissues, mouse tails, cultured cells, or buccal swabs	384

### FFPE DNA Isolation Kit

Catalog No.	Product	Description	Preps
HPFF-D96	HighPrep™ FFPE Tissue DNA Kit	Genomic DNA isolation from FFPE (Formalin-Fixed, Paraffin-Embedded) tissues	96
HPFF-D96X4	HighPrep™ FFPE Tissue DNA Kit	Genomic DNA isolation from FFPE (Formalin-Fixed, Paraffin-Embedded) tissues	384

## Ordering and Related Product Information

### DNA/RNA Co-isolation Kit

Catalog No.	Product	Description	Preps
HPDR-C50	HighPrep™ DNA & Total RNA Co-isolation Kit	Genomic DNA & Total RNA isolation from 5-30 mg of tissue, 200 µl of whole blood, 1 x 10 <sup>6</sup> of cultured cells, or 200 µl of swab lysate.	50
HPDR-C100	HighPrep™ DNA & Total RNA Co-isolation Kit	Genomic DNA & Total RNA isolation from 5-30 mg of tissue, 200 µl of whole blood, 1 x 10 <sup>6</sup> of cultured cells, or 200 µl of swab lysate.	100
HPDR-C100X4	HighPrep™ DNA & Total RNA Co-isolation Kit	Genomic DNA & Total RNA isolation from 5-30 mg of tissue, 200 µl of whole blood, 1 x 10 <sup>6</sup> of cultured cells, or 200 µl of swab lysate.	400

### Magnetic Separation Devices

Catalog No.	Description
MYMAG-96	Handheld Magnetic Separation Device (96 well microplate format)
MBMS-12	MagStrip magnetic stand (1.5 mL x 12)
MBMS-31550	15ml and 50ml magnetic stand combo. (3x15ml and 3x50ml)

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