

# Rapid purification of DNA fragments using Gilson EXTRACTMAN® and Macherey Nagel NucleoMag® PCR



## APPLICATION NOTE 1032

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### INTRODUCTION

Most workflows in molecular biology require a DNA clean up at some point. Whether it is a PCR or a linearized plasmid, clean up of DNA fragments is - in terms of numbers - among the top methods performed in molecular biology laboratories. In order to perform this task as time- and cost-efficiently as possible, MACHEREY-NAGEL developed the NucleoMag® PCR kit, which uses superparamagnetic particles for DNA purification.

Here, we present a new approach for the clean up of DNA fragments from small volumes of liquid combining the innovative design of EXTRACTMAN® (Figure 1) with the convenience of a DNA purification using MACHEREY-NAGEL's proven NucleoMag® technology. Due to its small size, off-grid usability, and portability, EXTRACTMAN is ready whenever and wherever you need it.

### METHOD

A 645 bp PCR fragment and a linearized pCDNA plasmid (5.4 kbp) were purified in four replicates per run using the NucleoMag® PCR kit on Gilson EXTRACTMAN. Results were compared to extractions performed in an automated manner on a KingFisher® Flex magnetic particle separator.

### APPLICATION DATA



#### Purification of PCR fragments

EXTRACTMAN enables efficient purification of PCR fragments with the NucleoMag® PCR kit with a recovery rate comparable to an automated reference preparation.

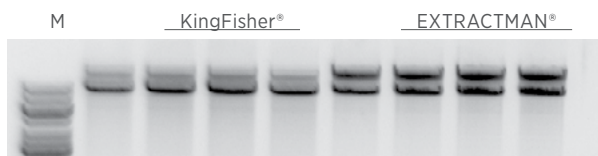
### PRODUCT AT A GLANCE

NucleoMag® PCR	
Technology	Magnetic bead technology
Sample material	≤ 50µL reaction mixture or DNA in solution
Fragment size	150 bp – 10 kbp
Typical recovery	80-95 %
Elution volume	25-100 µL



**Figure 1**  
EXTRACTMAN for processing of magnetic bead-based molecular biology kits

Gilson EXTRACTMAN®	
Technology	Slide-based, magnetic bead extraction platform
Applications	Biomolecule purification (DNA, RNA, proteins)
Operation	Manual
Channels	4



### Purification of linearized plasmids

EXTRACTMAN allows efficient purification of linearized plasmids from reaction mixtures with the NucleoMag® PCR kit. The final concentration is slightly higher than with an automated reference preparation due to a smaller elution volume.

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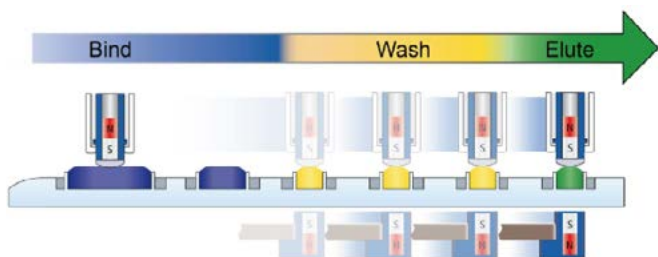
### Notice

This application note has been produced and edited using information that was available at the time of publication. This application note is subject to revision without prior notice.

## ORDERING INFORMATION

Description	Part Number	Quantity
EXTRACTMAN Starter Kit	22100000	1
EXTRACTMAN Microplates	22100008	25
EXTRACTMAN Bead Capture Strips	22100007	25

The process of capture-slide-release-slide allows the user to quickly perform four isolations in parallel. During the bind step, DNA in the linearized plasmids or PCR fragments is selectively adsorbed to the PMPs. PMP-bound DNA is then moved through wash buffer to the elution buffer using magnetic manipulation of the PMPs (Figure 2). Unbound contaminants remain in the input well and nonspecific carryover is eliminated via washes. Each step in the process requires only seconds of hands-on time.



**Figure 2**

EXTRACTMAN DNA isolation process using ESP.