



Automation of the EdgeBio ExcelaPure 96-Well UF PCR Purification Kit on the Zephyr Genomics Workstation

Introduction

Here, we describe the use of the Zephyr Genomics Workstation in automating PCR purification with The EdgeBio ExcelaPure 96-Well UF PCR Purification Kit (Cat #39614). Using this system, PCR products are purified using a size-exclusion membrane using vacuum filtration. The results confirm the expected yield and quality of PCR products purified using The EdgeBio ExcelaPure 96-Well UF PCR Purification Kit on the Zephyr Genomics Workstation.

Yield and Quality

50 μ L PCR reactions were purified with the EdgeBio ExcelaPure 96-Well UF PCR Purification Kit on the Genomics Workstation. The purified PCR products were resuspended in 100 μ L TE buffer. An average yield of greater than 80% was obtained. Primers were consistently removed in the process and the purified PCR products were suitable for DNA sequencing.

PCR Product Size (BP)	Yield (%)	CV (%)	Max (%)	Min (%)	
1008	89.0	3.9	95.0	83.5	n=16
555	90.5	7.6	100	81.9	n=16

Table 1. Average product recovery (%). Recovery of purified PCR products. 50 μ L PCR reactions were purified with the ExcelaPure 96-Well UF PCR Purification Kit. Samples were resuspended in 100 μ L of TE buffer. Percent recovery was determined by DNA quantification on the LabChip GX using the HT DNA 5K assay.

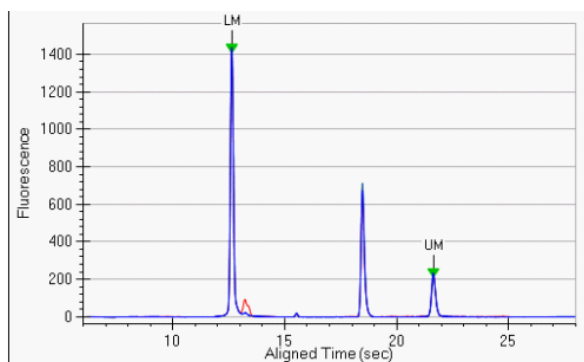


Figure 1. Electropherogram of PCR products. PCR products purified with the ExcelaPure 96-Well UF PCR Purification Kit on the Genomics Workstation (blue traces), along with unpurified PCR product, (red trace) were analyzed by the LabChip GX using the HT DNA 5K assay.

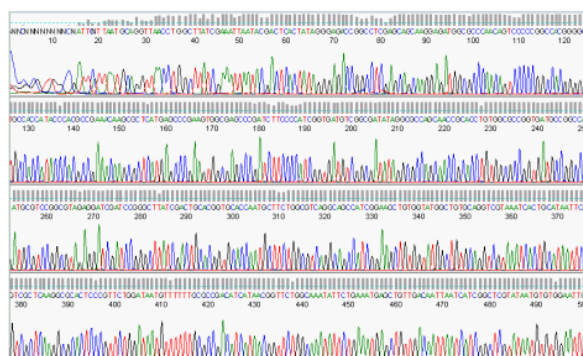


Figure 2. Chromatogram of DNA Sequencing. PCR products purified with the ExcelaPure 96-Well UF PCR Purification Kit on the Genomics Workstation was sequenced using BigDye Terminator v3.1 chemistry. The sequence was obtained for the full length of the PCR product.

Conclusion

PCR products can be purified in a 96-well format using the EdgeBio ExcelaPure 96-Well UF PCR Purification Kit in approximately 20 minutes. An average recovery of 90.5% was obtained for a 555bp PCR fragment. Excess primers and salts from the starting PCR reaction mix was efficiently removed. The DNA is suitable for downstream applications, including primer extension sequencing. The process is simple, fast and fully automated on the Zephyr Genomics Workstation.

Zephyr's small foot print fits on to a standard lab bench, requiring no special table, while offering flexibility for molecular biology applications:

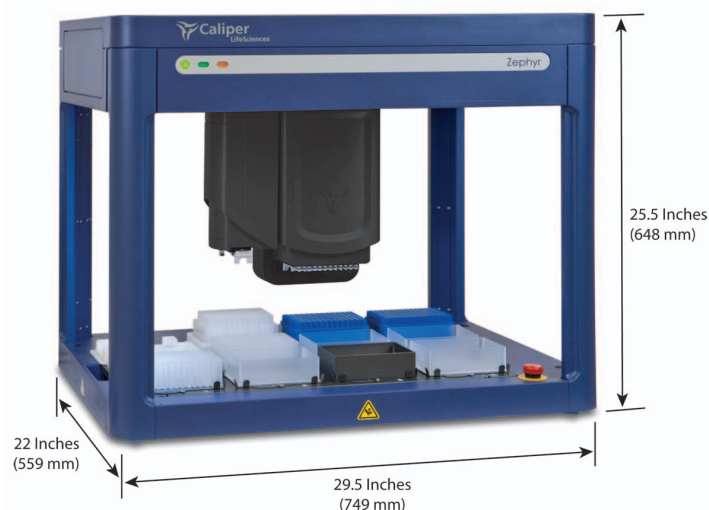
- DNA extraction
- RNA extraction
- Plasmid isolation
- PCR purification
- Sequencing reaction clean-up
- PCR setup
- Sequencing reaction setup
- DNA and RNA normalization

Additional applications which can be automated on the Zephyr Genomics Workstation:

- LabChipGX sample preparation for RNA quality assessment or DNA fragment analysis

What's included with your Zephyr Genomics Workstation

- PC controller and monitor
- Vacuum filtration station and pump
- Waste bottle
- Plate/lid gripper
- Ultrasonic detector
- Genomics Workstation GUI and Maestro software
- Startup Kit



Performance

Volume range:

High Volume Head (HVH) 1 - 200 µL

Precision:

High Volume Head (HVH) 1 - 5 µL: CV <5%
 5 - 200 µL: CV <2%
 2 - 25 µL or 50 µL: CV 5%

Weight:

75 kg (185 lbs) Base Unit

Operating Temperature:

15 - 35 °C (59 - 95 °F)

Operating Humidity:

0 - 85% RH, non condensing

Air Supply:

Regulated 35 - 65 psi

Power Input:

115 VAC, 50/60 Hz, 1000 VA max. or
 230 VAC, 50/60 Hz, 1000 VA max.

Caliper's Other Genomic Solutions



LabChip GX



TurboVap 96

Caliper Life Sciences

Part No.	Description
125282	Zephyr Genomics Workstation with HV Head - 110V
125283	Zephyr Genomics Workstation with HV Head - 220V
119728	Optional Zephyr Environmental Enclosure
103263	TurboVap 96 Concentration Workstation
122000	LabChip GX Analyzer

Edge Bio

Product No.	Consumable Kit Name	Qty.
39614	ExcelaPure 96 Well UF PCR Purification Kit	1 Plate
84900	ExcelaPure 96 Well UF PCR Purification Kit	10 Plate
95674	ExcelaPure 96 Well UF PCR Purification Kit	50 Plate



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