

Wizard® SV Gel and PCR Clean-Up System

Description

The Wizard® SV Gel and PCR Clean-Up System is designed to extract and purify DNA fragments directly from PCR reactions or from agarose gels. Fragments of 100bp to 10kb can be recovered from standard or low-melt agarose gels in either Tris acetate (TAE) or Tris borate (TBE). Up to 95% recovery is achieved, depending upon the DNA fragment size. This membrane-based system, which can bind up to 40µg of DNA, allows recovery of isolated DNA fragments or PCR products in as little as 15 minutes, depending on the number of samples processed and the protocol used. Samples can be eluted in as little as 15µl of Nuclease-Free Water. The purified DNA can be used for automated fluorescent sequencing, cloning, labeling, restriction enzyme digestion or in vitro transcription/translation without further manipulation.

DNA Recovery from Agarose Gels

Using the Wizard® SV Gel and PCR Clean-Up System, DNA fragments ranging from 100bp to 10kb are purified with excellent recovery rates (Figure 1; Table 1). Recovery can be achieved with fragments as large as 23kb and with double-stranded DNA as small as 55bp. The Wizard® SV Gel and PCR Clean-Up System works with standard or low melting point agarose and is compatible with both TAE and TBE buffer systems. The high binding capacity of the SV membrane allows processing of multiple gel slices using a single column.

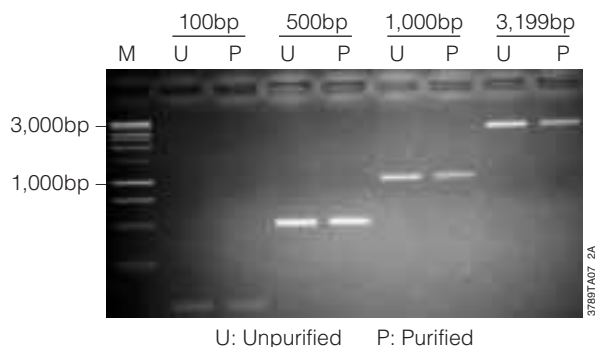


Figure 1. Gel analysis of 100bp, 500bp, 1,000bp, and 3,199bp DNA fragments before (U; Unpurified) and after (P; Purified) gel extraction using the Wizard® SV Gel and PCR Clean-Up System. The marker (M) used is the 1kb DNA Ladder (Cat.# PAG5711).

Table 1. Percent Recovery of DNA Fragments (100bp–9kb) From Agarose Gel Slices Using the Wizard® SV Gel and PCR Clean-Up System.

DNA Fragment Size	Percent Recovery
100bp	84%
500bp	89%
1,000bp	92%
3,199bp	95%
9,416bp	95%

350mg 1% agarose/TAE slices were applied per column. Percent recovery was determined by gel analysis.

Benefits

- **Flexible to Meet Your Needs:** A single system allows purification directly from PCR or from agarose gel slices.
- **Minimal Loss of DNA:** Up to 95% recovery of fragments.
- **Saves You Time:** Purify DNA fragments or PCR products in as little as 15 minutes.
- **Easy to Use:** You have a choice of spin or vacuum purification formats. No phenol extraction or ethanol precipitation required.
- **Performance You Can Rely On:** Purified DNA routinely achieves 700 bases with >98% accuracy in automated fluorescent sequencing.
- **Robust Chemistry:** Proven to be compatible with a variety of PCR additives (Table 3).
- **Applications Tested:** DNA is suitable for automated fluorescent sequencing, cloning, labeling, restriction enzyme digestion or in vitro transcription/translation without further manipulation.

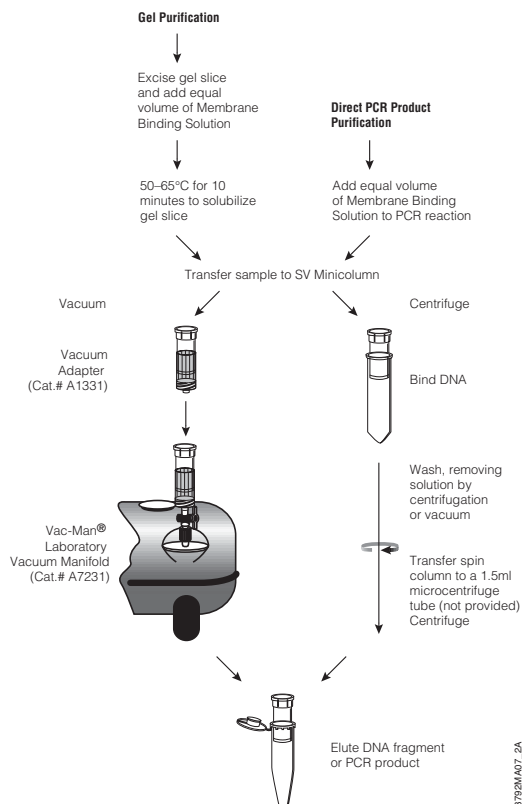


Figure 2. Flow chart of DNA fragment gel purification or direct PCR product purification using the Wizard® SV Gel and PCR Clean-Up System.

DNA Recovery Directly from PCR Reactions

The Wizard® SV Gel and PCR Clean-Up System effectively purifies a wide range of DNA fragment sizes from PCR (Figure 3; Table 2). The system removes unincorporated primers from the amplification reaction. Mineral oil does not interfere with purification. In addition, Wizard® SV chemistry has been shown to be compatible with a variety of PCR additives (Table 3).

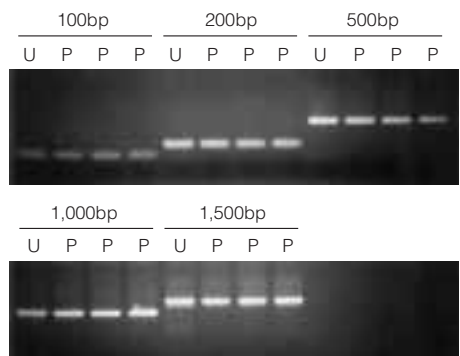


Figure 3. Gel analysis of PCR products before and after direct purification using the Wizard® SV Gel and PCR Clean-Up System. DNA fragments of the sizes indicated were analyzed before (U; Unpurified) and after (P; Purified) purification.

Table 2. Recovery of PCR Products from Amplification Reactions Using the Wizard® SV Gel and PCR Clean-Up System.

DNA Product Size	Percent Recovery
100bp	85%
200bp	87%
500bp	91%
1,000bp	92%
1,500bp	92%
3,199bp	87%

Percent recovery was determined by gel analysis. PCR products were generated using PCR Master Mix (Cat.# PAM7501, PAM7502, PAM7505).

Table 3. Effect of Various PCR Additives on Percent Recovery of a 1,000bp PCR Product Using the Direct Purification Method and the Wizard® SV Gel and PCR Clean-Up System.

PCR Additive	Percent Recovery Relative to "No Additive"
No Additive	100%
1M Betaine	94%
1M Q-Solution	97%
0.1% Triton® X-100	92%
0.1% Tween®-20	87%
0.1% NP-40	82%
5% Glycerol	87%
5% Formamide	90%
5% DMSO	87%
0.5M Tetramethylene Sulfoxide	94%
0.4M Sulfolane	94%
0.4M 2-Pyrrolidone	95%
1mM Tartrazine	100%
1% Ficoll®-400	100%

The percent recovery for the no-additive sample was arbitrarily set to 100%.

High Quality DNA for Automated Fluorescent Sequencing

DNA purified using the Wizard® SV Gel and PCR Clean-Up System is suitable for fluorescent sequencing (Figure 4). Routinely 700 bases can be clearly sequenced using DNA purified by this system (>98% accuracy).

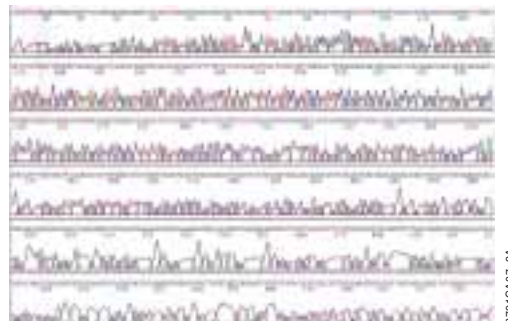


Figure 4. Sequence of a 1,000bp PCR product purified from a 350mg 1% agarose/TAE gel slice using the Wizard® SV Gel and PCR Clean-Up System. Sequencing was performed using ABI BigDye® terminator chemistry.

Ordering Information

Product	Size	Cat.#
Wizard® SV Gel and PCR Clean-Up System*	50 preps	PAA9281
	250 preps	PAA9282

*For Laboratory Use.

Related Products

Product	Size	Cat.#
Miniprep Vacuum Adapters	20 each	PAA1331
Wizard® SV 96 PCR Clean-Up System*	1 × 96 preps	PAA9340
	4 × 96 preps	PAA9341
	8 × 96 preps	PAA9342
Wizard® MagneSil® PCR Clean-Up System*	100 × 96 preps	PAA9345
	4 × 96 preps	PAA1930
	8 × 96 preps	PAA1931
Wizard® PCR Preps DNA Purification System*	100 × 96 preps	PAA1935
	50 preps	PAA7170
	250 preps	PAA2180

* For Laboratory Use.

For additional technical information please visit:

www.promega.com/tbs/tb308/tb308.html

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