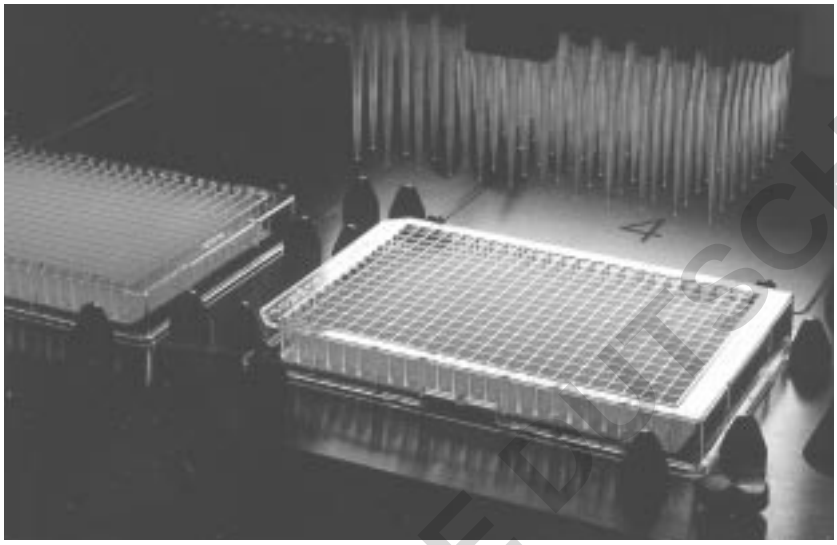
MultiScreen™-SEQ Filter Plate

Ready-to-use, automation-friendly, 384-well plate for dye terminator removal



The MultiScreen$_{384}$-SEQ filter plate recovers highly purified sequencing products for long, accurate sequencing reads. The plates are fully automatable and provide a cost- and time-efficient alternative to ethanol precipitation for dye-terminator removal. They are ideal for use before electrokinetic injection or loading onto a slab gel-type DNA sequencer.

Designed for Automated Operations

The MultiScreen$_{384}$-SEQ filter plate is suited for use with most liquid handling systems. The filter plate operates by vacuum filtration enabling top-loading and recovery of sample. Our plate is designed with the needs of the high throughput laboratory in mind, meets SBS standards and is ideally suited for "walk away" automation.

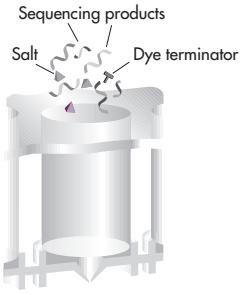
Quick and Easy Protocol

Use of the MultiScreen$_{384}$-SEQ filter plate minimizes the procedural complexity involved in traditional precipitation or bind-and-elute methods. These plates eliminate the need for centifugation, time consuming incubations, ethanol-drying steps and manifold disassembly routines. Resuspension in electrokinetic injection buffer or water facilitates integration with DNA sequencers.

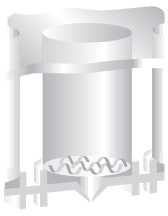
High Throughput Recovery of Even Miniaturized Sequencing Reactions

The MultiScreen$_{384}$-SEQ filter plate uses a size-selective membrane to separate sequencing products from contaminants. The plate retains sequencing products on the membrane surface, allowing salts and dye terminators to be filtered to waste. This time- and cost-effective method delivers highly purified sequencing products for long, accurate DNA sequencing reads.

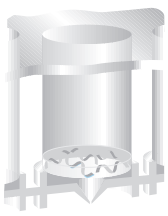
Simply Wash, Reconstitute, and Recover



1. *Introduce samples into wells*



2. *Filter using MultiScreen$_{384}$ vacuum manifold for 6 minutes or until wells are empty. DNA is retained on the surface of the membrane while smaller contaminants are filtered to waste.*



3. *Wash the sample once. Add resuspension buffer to each well (typically 10 – 25 µL) and recover purified DNA from the membrane surface by mixing or shaking. Retrieve purified samples by aspirition.*

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Features

- *Automation friendly:* Design and protocol saves time, money and improves reproducibility
- *Efficient dye terminator & salt removal:* Recovers highly purified sequencing products for long, accurate sequencing reads
- *Eliminates dry-down step:* Sequencing products may be resuspended in any aqueous electrokinetic injection buffer
- *Saves reagents:* plates suitable for use with 1/16 sequencing reactions

Performance

MultiScreen$_{384}$-SEQ filter plate: BigDye™ sequencing reactions

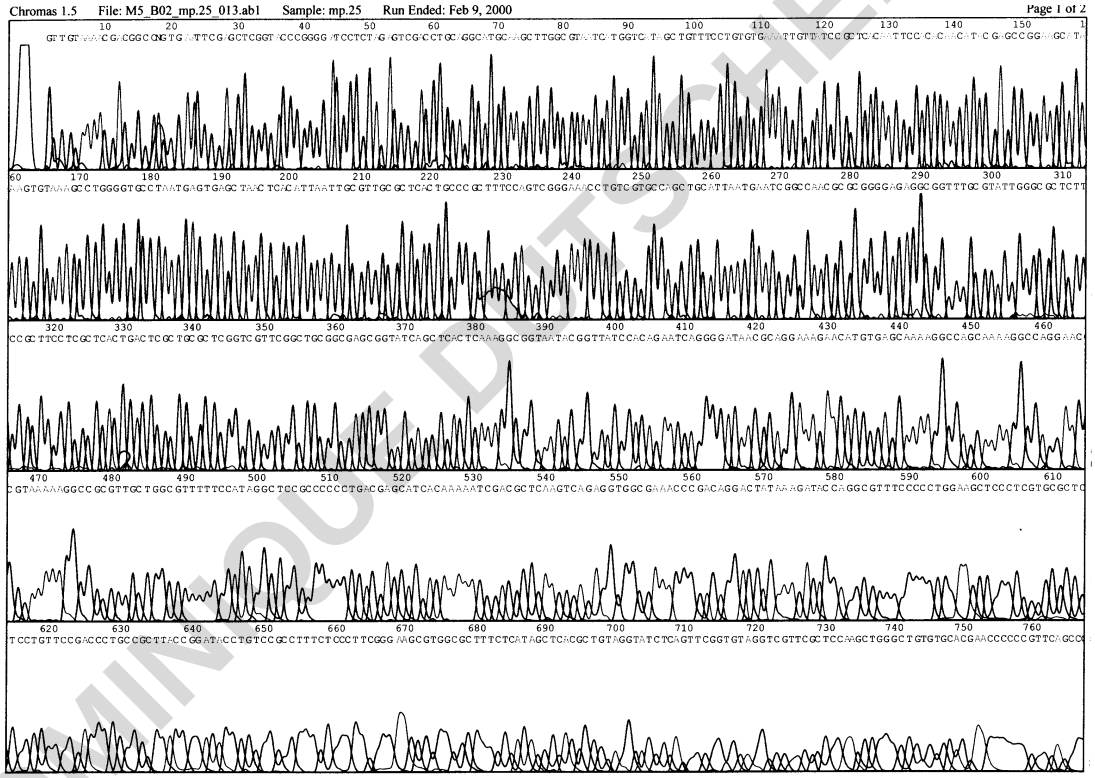


Figure 1. The MultiScreen$_{384}$-SEQ filter plate was used to purify BigDye sequencing reactions. Quarter reactions were cleaned up and injected onto the ABI Prism™ 3700. This example demonstrates the utility of the MultiScreen$_{384}$-SEQ filter plate for dye terminator removal, delivering long, high quality reads (Phred 20 ≥ 627). Data courtesy of Duane Bartley, Johns Hopkins University.

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MultiScreen$_{384}$-SEQ filter plate: ET Terminators

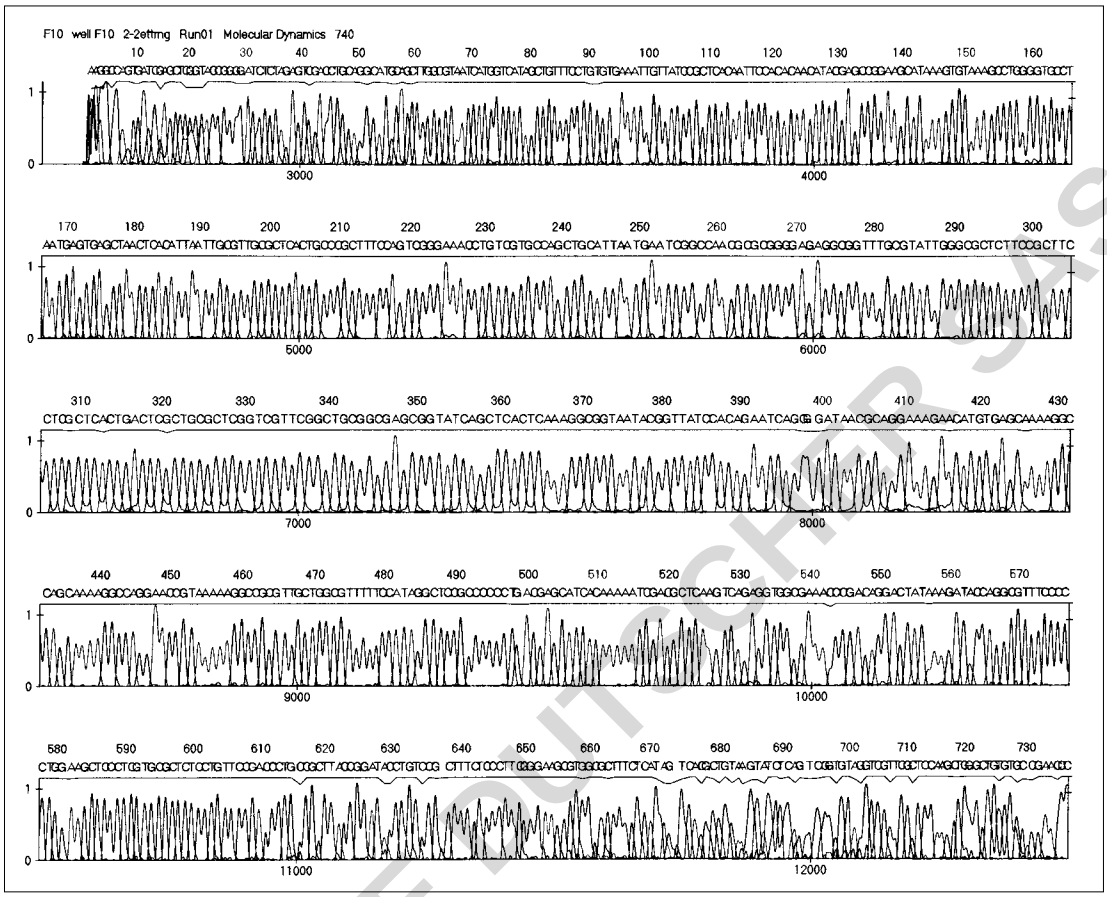


Figure 2. The MultiScreen$_{384}$-SEQ filter plate was used to purify ET terminator sequencing reactions. Quarter reactions were cleaned up and injected onto the APB MegaBACE® 1000 sequencer. Electrokinetic injection was performed out of water at 2 Kv for 10 seconds. Samples were run at 9 Kv for 120 minutes. This example further demonstrates the utility of the MultiScreen$_{384}$-SEQ filter plate for dye terminator removal, delivering long, high quality reads (Phred 20 ≥ 607).

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MultiScreen$_{384}$-SEQ filter plate

Phred 20 bases for 96 samples, MegaBACE 1000 sequencer, 1/8 reaction, plasmid template 54,445 Phred 20 bases for these 96 samples

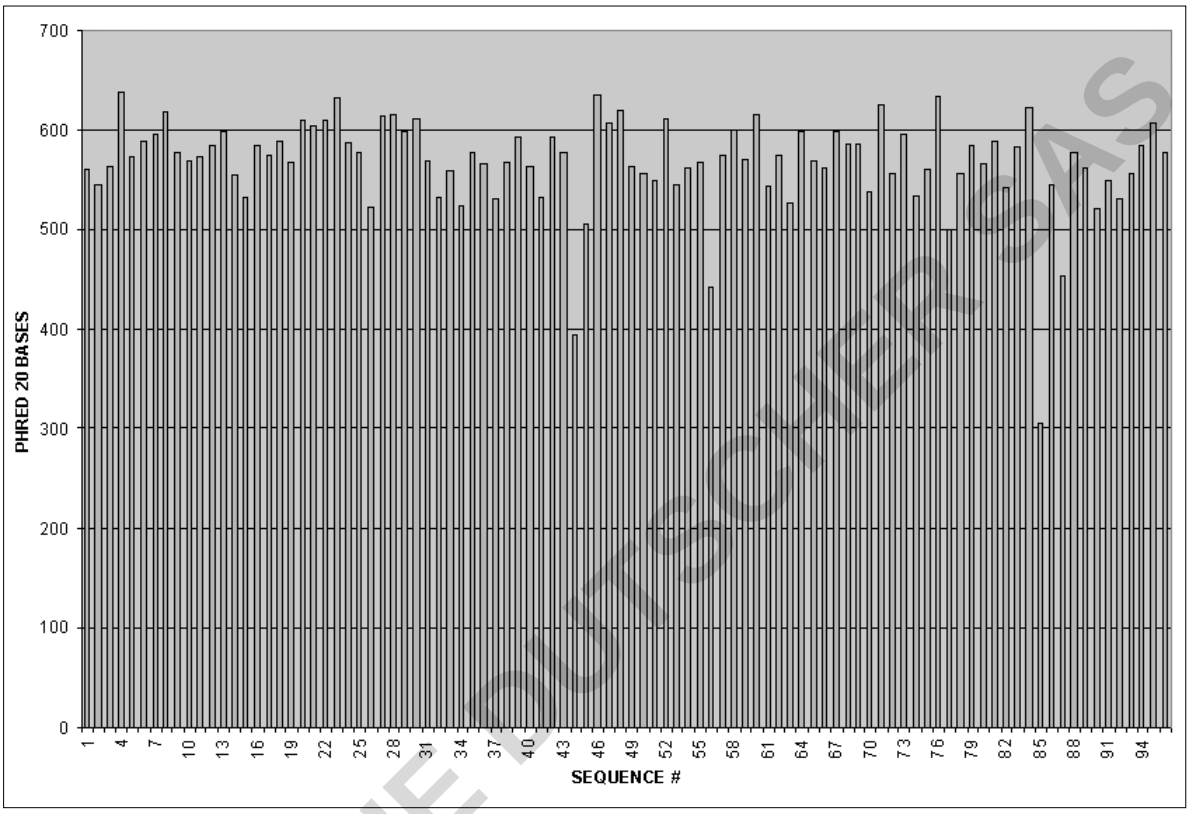


Figure 3. The MultiScreen$_{384}$-SEQ filter plate was evaluated for intra-plate reproducibility. Plasmid template was sequenced with ET Terminators (1/8 reactions) and MultiScreen$_{384}$-SEQ filter plates were used for dye terminator removal. The data show the reproducibility of read lengths from one quadrant of a 384 well plate. For these 96 samples, 54,445 Phred 20 bases were determined for an average read length of 567 bases. Similar experiments with BigDye sequencing chemistry yielded average Phred 20 read lengths of 630 bases (data not shown).

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Specifications

Maximum well volume: 130 µL
Working well volume: 100 µL
Non-recoverable volume: < 2 µL
Distance from bottom of plate to membrane surface: 3 mm

Materials of construction

Plastic housing: Clear Polystyrene
Membrane: Proprietary

Automation Platform Recommendations

The MultiScreen$_{384}$-SEQ filter plate performs best with 96- or 384-tip liquid handlers capable of pipetting ≥ 25 µL/second or with plate shakers with 0.12 inch orbit at 1100 rpm. Other liquid handlers or shakers operating at slower speeds are equally effective, but resuspension times are longer.

Contact Millipore Technical Services or consult with one of the Millipore Application Scientists for help with your automation needs.

Chemical Compatibility

Chemical		Chemical	
EDTA	E	Ethanol 100%	Q
Formamide 70%	X	Ethanol 70%	E
Formamide 20%	E	Ethanol 20%	E
DMSO 100%	X	Sodium Citrate	E
DMSO 50%	X	2-Pyrrolidinone 20%	Q
DMSO 20%	Q		

E= Excellcent Q= Questionable X= Not Recommended

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Ordering Information

Description	Pack Size	Catalogue No.
MultiScreen$_{384}$-SEQ filter plate	10	S384 SEQ 10
	50	S384 SEQ 50
MultiScreen$_{384}$ Manifold	1	SAVM 384 01

Also available: Fully-automatable MultiScreen$_{384}$-PCR filter plate for one-step cleanup of PCR products. Request publication number PF1546EN00. Call the nearest Millipore office for information.

MultiScreen$_{384}$-PCR filter plate	10	S384PCR10
	50	S384PCR50

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