

Whatman CloneSaver™ and FTA®

Inactivate phage and
rescue infected clones.

Bacterial phage contamination of a lab can destroy entire strains of important clones and cost you valuable time and money. But fortunately there is a way to “bring back” clones and save your critical research. Whatman CloneSaver™ Cards, using patented FTA® technology, allow you to instantly inactivate phage and rescue infected clones with a fast and easy protocol. Apply infected bacteria to a card and cells are lysed, proteins are denatured and the DNA is safely preserved. Because CloneSaver Cards can be stored at room temperature for years, no freezer space is needed to protect important strains, helping to lower lab costs while increasing the safety of your clones.

Features and Benefits

- **Safe, secure storage of clones**
DNA can be stored for years at room temperature without sample degradation.
- **Inactivate phage instantly** Phage from infected bacteria are immediately inactivated when applied to card surface and allowed to dry.
- **Protect important strains and backup stock** Inactivated bacteria phage captured on cards is unable to contaminate new cells in your lab.
- **Rescue contaminated clone stock** Competent bacteria can be transformed from infected cultures and glycerol stock applied to CloneSaver Card.

Applications

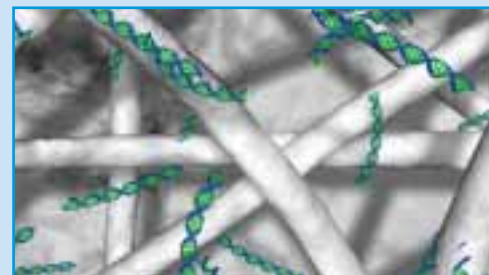
- Bacterial transformation
- PCR
- Genome amplification
- Restriction digestion



1. **FTA matrix prior to sample addition.** The crystalline structures show FTA reagent attached to the paper fibers.



2. **FTA after sample application.** FTA is impregnated with chemicals that lyse cell membranes on contact—including bacterial phage.



3. **FTA after washing with TE⁻¹ buffer.** After washing with buffer, the phage contamination is gone and the clone DNA is ready for downstream applications.

Whatman®

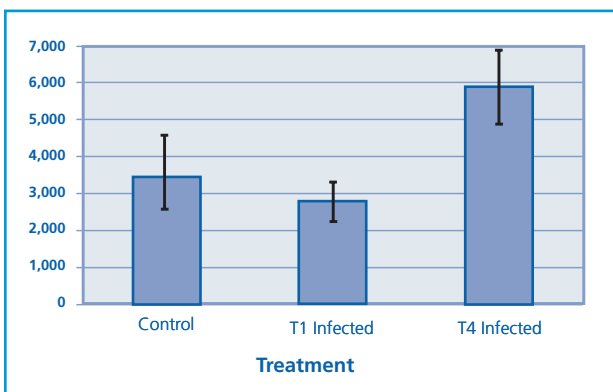
CLONE RESCUE FROM PHAGE INFECTION

Plasmids from phage-infected cultures and infected frozen glycerol stocks can be recovered by using CloneSaver. In this test, bacteriophage T1 and T4 were used to infect plasmid-containing cells in a 50% glycerol stock. Small volumes (5 µL) of the infected cultures were spotted onto CloneSaver and dried at room temperature according to normal protocol. The remainder of these infected cultures were continued and all of the cultures underwent complete lysis (yielding dead cultures).

Punches were taken from the spots of the infected cultures on CloneSaver, washed and then used to transform competent bacteria, according to standard protocols. These bacteria were cultured overnight to determine transformation efficiency and phage infectivity.

Transformation Efficiency

Transformation by plasmids from the 50% glycerol stocks on CloneSaver is shown below.



(Mean + standard deviation, n = 4.) The 10% glycerol stocks gave too many colonies to count.

Plasmids from uninfected, T1-infected and T4-infected glycerol stocks all gave comparable numbers of colonies after transformation from disks of plasmid stored on CloneSaver. Transformation efficiency was 1.2×10^9 cfu/µg DNA, thereby clearly demonstrating the ability to effectively transform plasmids from phage-infected stocks.

PHAGE INFECTIVITY

Control plates containing cells that were transformed then re-spiked with T1 phage before plating underwent complete lysis after incubation. This confirms their susceptibility to phage infection. An additional control plate showed healthy cells transformed with CloneSaver disks from healthy uninfected bacteria, demonstrating CloneSaver's suitability for transformation. The last set of plates contained cells transformed with CloneSaver disks from plasmids infected either with T1 or T4 infected glycerol stocks (glycerol concentration at 10% or 50%). After overnight incubation only healthy colonies of bacteria carrying the plasmid were seen and no trace of the original infection by the phage was detected. Thus demonstrating that phage had been inactivated by CloneSaver.

WHATMAN CATALOG ORDERING INFORMATION

Whatman Catalog Number	Description	Qty/Case
WB120028	CloneSaver Cards in 96 Well Format	5
WB120052	CloneSaver Starter Kit	1
WB100024	Resealable Multi-barrier Pouch	50
WB100003	Storage Desiccant Packet	1000
WB100007	Harris Micro Punch 2.0 mm with Cutting Mat	1
WB100034	SPOT Holder for Semi-Automated Spotting	1



Whatman Quality

Whatman is a global leader in separations technology and is known in the scientific community for providing innovative Life Science products and solutions. Our instinct for simplification accelerates the rate of discovery, reduces costs and saves time. In order to focus on the unique needs of customers, Whatman is organized into four business development units: LabSciences, BioScience, MedTech-Diagnostics and MedTech-Devices. For more information, visit www.whatman.com.

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