

# Bacterial DNA. STāBILIZED.

Preserve and Store Bacterial DNA with CloneStable™.

CloneStable™ enables the long-term storage of unpurified bacterial plasmid and genomic DNA at room temperature. DNA recovery is as simple as adding water.

## Protect the Integrity of Bacterial DNA at Room Temperature.

- Transformation of crude *E. coli* lysates stabilized in CloneStable at room temperature results in colony counts equivalent to freezer controls.
- Zero sample degradation means increased reproducibility.
- Room temperature storage decreases storage and transport costs.

## Streamline Clone Handling.

- Apply bacterial cultures directly to CloneStable; no prior purification needed.
- Glycerol stocks can be transferred to CloneStable for short-term storage and transport applications.
- Add water for rapid and complete sample recovery.
- Use hydrated samples directly in downstream applications such as transformation and PCR amplification.

Protect DNA sample integrity.

Store clones at room temperature.

Reduce storage and shipping costs.



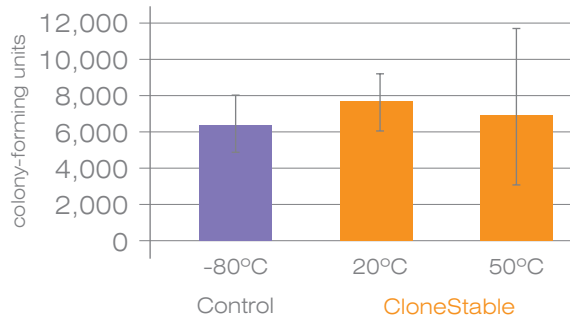
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### Long-term Clone Stability and Storage.

Room temperature-stored crude *E. coli* lysates protected by CloneStable resulted in colony counts equivalent to freezer controls. Additionally, plasmids can be recovered without reduced efficiency even when stored at 50°C in CloneStable.\*

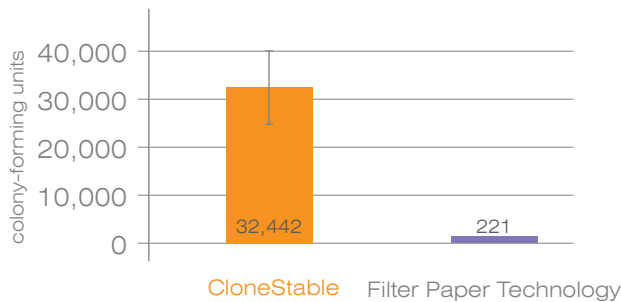


ABOVE 20µl of an *E. coli* overnight culture containing pUC19 plasmids were spotted and dried in CloneStable and stored at room temperature (20°C) or 50°C.\* A freezer control was stored at -80°C. After six months, the bacterial lysates and freezer control were recovered and transformed.

\*Six months at 50°C represents accelerated aging conditions and is equivalent to 3.5 years' storage at room temperature.

### Comparison of CloneStable to Filter Paper Technology.

Samples stabilized in CloneStable resulted in more than 100-fold higher plasmid recovery when compared to samples stored on a competitor's filter paper-based product.



ABOVE 5µl of an overnight *E. coli* culture was stored in CloneStable or a competitor's filter paper-based product. After storage for 20 months at room temperature, samples were recovered according to their respective protocols and transformed.

### From Nature to the Lab.

CloneStable is based on the natural principles of anhydrobiosis ("life without water"), a biological mechanism employed by organisms such as tardigrades and brine shrimp that enables their survival while dry for up to 120 years. Anhydrobiotic organisms protect their DNA, RNA, proteins, membranes and cellular systems, and can be revived by rehydration. By exploiting these unique characteristics, CloneStable preserves DNA dry at ambient temperatures. CloneStable works by forming a glass-like shell, securely "shrink-wrapping" DNA samples and protecting against degradation.

### CloneStable is available in the following formats:

PRODUCT	CATALOG NO.	CONTAINS
CloneStable Tubes	93121-007	25 tubes
CloneStable 96-well Plate Pack	90121-007	10 96-well plates



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# CloneStab™

## Store and ship live *E. coli* at ambient temperatures

- Protect live bacteria for up to 3 months at room temperature (15-25°C)
- Viable bacterial recovery even after exposure to extreme temperatures (-20°C to 37°C)
- Ideal for transporting live bacteria harboring plasmids

### Key benefits:

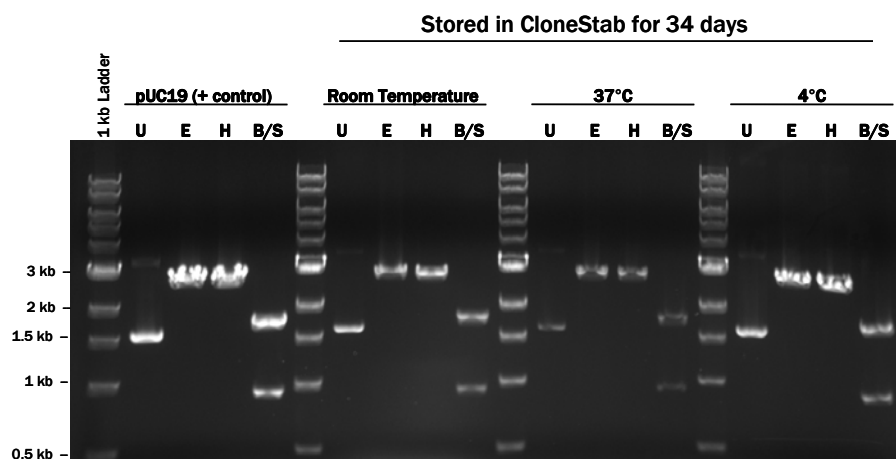
- Storage and shipment of *E. coli* stabilized under restricted bacterial growth conditions
- Room temperature storage ensures viability and genetic integrity
- Easy sample preparation and recovery of viable bacteria
- Eliminate dry-ice shipments
- Protects against plasmid loss and rearrangements

### Product Features:

- Format: Individual 1.7 ml snap-cap tubes
- Sample source: Stationary phase *E. coli* cultures grown in selective media
- Sample type: Intended for storage of *E. coli* strains only. Not recommended for use with other bacterial species.
- Initial sample volume: 10 µl of stationary phase sample per tube

CloneStab is designed to protect live *E. coli* strains harboring plasmids during storage and shipment at ambient temperatures. The stabilization medium allows for recovery of viable cells and intact plasmids following storage for up to 3 months at room temperature. Genetic integrity and viability are even protected during exposure to extreme temperature fluctuations (-20°C to +37°C), conditions that are typically experienced during sample shipment. CloneStab has been evaluated for use with multiple strains of *E. coli* harboring plasmids of various sizes. It is easy to use – bacterial samples are applied into the CloneStab tube and are ready for storage or shipment. Recovered bacteria can be used directly in downstream applications such as plasmid purification or propagation on solid growth media (*i.e.* plates).

## Protection of bacterial viability and plasmid integrity

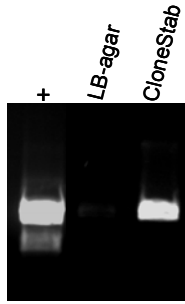


The integrity of recovered plasmids following storage of bacteria in CloneStab at various temperatures for 34 days was assessed by restriction enzyme analysis and compared to purified pUC19 (2686 bp) stored frozen (+ control). Digestion with EcoRI (E) and HindIII (H) linearized the plasmid, while BamHI and ScaI results in fragments of 938 bp and 1748 bp. Results indicate that the integrity of plasmids recovered from bacteria stored in CloneStab is preserved and intact as compared to control pUC19 plasmid. Bacteria viability and plasmid integrity are also protected during storage in CloneStab even after exposure to extreme temperature for prolonged time periods.

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Bacteria strain DH10 $\beta$  harboring pUC19 plasmids are viable after 3 months storage at 37°C when protected in CloneStab. Bacteria were stored in LB-agar (control) for the identical time period. Selective growth media was added directly to tubes and incubated overnight at 37°C to assess viable cell recovery. Plasmids were recovered from the overnight bacterial cultures using standard methods and digested with EcoRI restriction enzyme to assess plasmid integrity. Results indicate improved recovery of viable bacteria and appropriate plasmids from CloneStab as compared to LB-agar (compare lanes). (+): pUC19 plasmid stock.

**Procedure:**

Stationary phase bacterial cultures grown in selective media are deposited directly into tubes containing CloneStab. CloneStab is designed to minimize bacterial growth and cells can be conveniently stored at room temperature and are even protected at extreme temperatures for intermediate time periods (up to 3 months at 37°C). Viable bacteria can be recovered by the addition of selective growth media and incubating overnight at the appropriate temperature. The resultant bacteria culture is ready for immediate use in downstream applications.

**Applications:**

Bacteria recovered from CloneStab can be used for the following applications:

- Shipping bacterial samples
- Propagation on solid growth media (i.e. agar plates)
- Long-term storage on solid media (i.e. agar stabs)
- Preparation of glycerol stocks
- Plasmid purification

**CloneStab is available in the following format:**

93121-018: CloneStab Tube Kit (25 tubes)

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