

## Milk Bacterial DNA Isolation Kit

Norgen's Milk Bacterial DNA Isolation Kit provides a rapid method for the isolation and purification of genomic DNA from the various bacterial species found within milk. The kit allows for the isolation of genomic DNA from both gram negative and gram positive bacteria in milk samples.

Purification is based on spin column chromatography using Norgen's proprietary resin as the separation matrix. The genomic DNA is preferentially purified from other cellular proteinaceous components. The purified genomic DNA is fully digestible with all restriction enzymes tested, and is completely compatible with PCR, quantitative PCR and Southern Blot analysis.

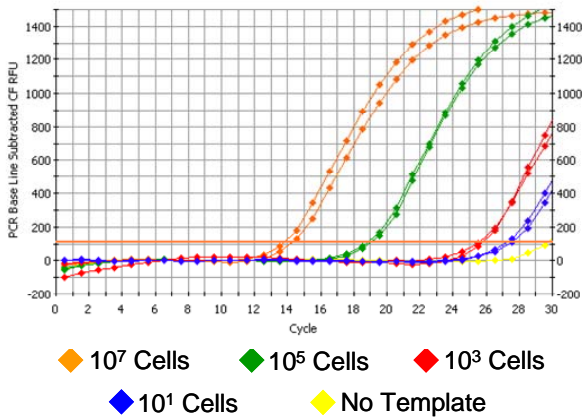


Kit Specifications			
Maximum Milk Input	1 mL	Minimum Detection Limit	10 bacteria in 1 mL
Time to Complete 10 Purifications	45 minutes	Bacteria Species Processed	Gram positive and gram negative

### Milk Bacterial DNA Isolation Kit Benefits

Isolate genomic DNA from all types of bacteria found in milk	Bacterial genomic DNA can be isolated from both gram negative and gram positive bacteria using the kit.
Fast and easy processing	Rapid spin-column format allows for the processing of 10 samples in 45 minutes.
Isolate high quality DNA	No degradation of the genomic DNA isolated with the Milk Bacterial Genomic DNA Isolation Kit is observed.
Isolate genomic DNA from milk samples with very low bacterial densities	Genomic DNA can be isolated and detected from milk samples with bacterial concentrations as low as 10 bacterial cells in 1 mL of milk (Figure 1).
Recovered genomic DNA is suitable for downstream applications	Purified genomic DNA can be used in a number of downstream applications including restriction enzyme digestions, PCR amplifications, quantitative PCR and Southern Blot analysis.

## Milk Bacterial DNA Isolation Kit



**Figure 1. Isolation and Detection of DNA from as Little as 10 Bacterial Cells in 1 mL of Milk**

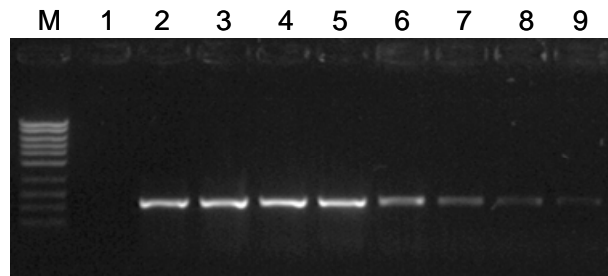
Increasing amounts of bacteria ( $10^1$ ,  $10^3$ ,  $10^5$ ,  $10^7$ ) were added to pasteurized milk samples, and the bacterial DNA was subsequently isolated using Norgen's Milk Bacterial DNA Isolation Kit. The isolated genomic DNA was then detected using real-time PCR. Bacterial genomic DNA could be isolated and detected from all the 1 mL milk samples, including the sample that contained only 10 bacterial cells (blue line).

### Milk Bacterial DNA Isolation Kit Contents

1. Digestion Buffer
2. Lysis Solution
3. Binding Solution
4. Wash Solution I
5. Wash Solution II
6. Elution Buffer
7. Proteinase K (lyophilized)
8. Lysozyme (powder)
9. Micro Spin Columns
10. Elution Tubes
11. Product Insert

### Shipping Conditions

The Milk Bacterial DNA Isolation Kit is shipped at room temperature.



**Figure 2. PCR Detection of Bacterial DNA Isolated from Milk Samples**

Bacterial genomic DNA isolated from contaminated milk samples using Norgen's kit were used as the template in PCR reactions. Lanes 2 and 3 contain the PCR product when DNA was isolated from milk samples containing  $10^7$  bacterial cells, Lanes 4 and 5 correspond to  $10^5$  cells, Lanes 6 and 7 contained  $10^3$  cells, and Lanes 8 and 9 contained 10 bacterial cells. Norgen's kit was able to isolate and detect bacterial DNA from as little as 10 bacterial cells in 1 mL of milk (Lanes 8 and 9). Lane 1 is a negative control (no template) and Lane M is Norgen's PCRSizer 100bp DNA Ladder.

### Customer-Supplied Reagents and Equipment

- Benchtop microcentrifuge
- 96 - 100% ethanol
- Microcentrifuge tubes
- Micropipettors
- 55°C incubator
- 37°C incubator (gram positive strains only)
- Cotton swabs

### Storage Conditions

All solution should be kept tightly sealed and stored at room temperature. These reagents should remain stable for at least 1 year in their unopened containers. The Lysozyme should be stored at  $-20^{\circ}\text{C}$  upon arrival, and the Digestion Buffer should be stored at  $-20^{\circ}\text{C}$  after addition of the Lysozyme. The lyophilized Proteinase K should be stored at  $-20^{\circ}\text{C}$  upon arrival and after reconstitution.

Cat #	Description	Quantity
21500	Milk Bacterial DNA Isolation Kit	25 samples