

## Milk Bacterial DNA Isolation Kit

Norgen's Milk Bacterial DNA Isolation Kit is designed for the rapid preparation 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 found in milk samples. The genomic DNA is preferentially purified from other cellular proteinaceous components. Typical yields of genomic DNA will vary depending on the bacterial density of the milk sample, as well as the bacterial species present. The purified genomic DNA is fully digestible with all restriction enzymes tested, and is completely compatible with PCR, quantitative



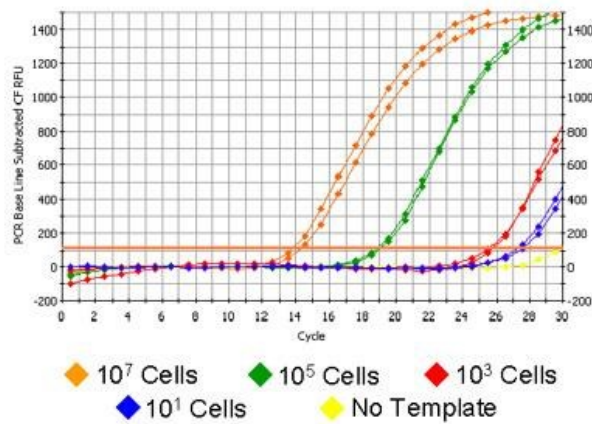
PCR and Southern Blot analysis. Purification is based on spin column chromatography using Norgen's proprietary resin as the separation matrix. Norgen's resin binds DNA under high salt concentrations and releases the bound DNA under low salt and slightly alkali conditions.

Kit Specifications - Spin Columns			
Maximum Milk Input	1 mL	Minimum Detection Limit	10 bacteria in 1 mL of milk
Bacteria Species Processed	Gram positive and Gram negative	Time to Complete 10 Purifications	1 hour

### 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
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

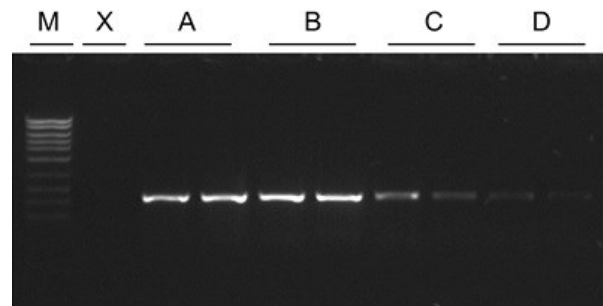
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**Figure 1. Isolation and Detection of DNA from as Little as 10 Bacterial Cells in 1 mL of Milk.** Increasing amounts of *E. coli* ( $10^1$ ,  $10^3$ ,  $10^5$ ,  $10^7$ ) were added to 1 mL pasteurized milk samples, and the bacterial DNA was subsequently isolated using Norgen's Milk Bacteria DNA Isolation Kit with a 200  $\mu$ L elution volume. One microliter of the isolated genomic DNA was then detected in a 20  $\mu$ L real-time PCR reaction using primers specific to *E. coli*. 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. Resuspension Solution A
2. Lysis Buffer H
3. Solution BX
4. Buffer SK
5. Wash Solution A
6. Elution Buffer B
7. Proteinase K-12mg
8. Lysozyme (powder)
9. Mini Spin Columns
10. Collection Tubes
11. Elution tubes (1.7 mL)
12. Product Insert



**Figure 2. End-Point PCR of Milk Bacterial DNA samples.** One milliliter of milk was spiked with various amount of *E. coli*. Bacterial DNA was isolated in duplicate using Norgen's Milk Bacterial DNA Isolation Kit, and 1  $\mu$ L of each 200  $\mu$ L lution was used for conventional PCR. For analysis 10  $\mu$ L of each PCR was loaded on an agarose gel. The amount of bacteria in each milk sample is as follows: A =  $10^7$ , B =  $10^5$ , C =  $10^3$ , D =  $10^1$ . Lane X is a negative control (no template) and Lane M is Norgen's PCRSizer 100bp DNA Ladder.

### Customer-Supplied Reagents and Equipment

- Microcentrifuge tubes
- Benchtop microcentrifuge
- Micropipettors
- 55°C incubator
- 37°C incubator (for Gram positive strains only)
- Lysostaphin (Optional for Gram positive strains only)
- 96 – 100% ethanol
- Cotton swab

### Storage Conditions

All solutions should be kept tightly sealed and stored at room temperature. The Lysozyme should be stored at -20°C upon arrival, and the Resuspension Solution A should be stored at -20°C after addition of the lysozyme. The lyophilized Proteinase K should be stored at -20°C upon arrival and after reconstitution. These reagents should remain stable for at least 1 year in their unopened containers.

Cat #	Description	Quantity
21550	Milk Bacterial DNA Isolation Kit	50 samples