

Case study - Wastewater

Quantitative PCR for Genetic Markers of Human Fecal Pollution.

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Overview

- **Keywords:** Waterborne disease, environmental waters, microbial community, DNA extraction
- **Aim of the study:** Development of a method to assess microbial community present in waste water sample
- **Application:** Quantitative PCR
- **Sample name:** Wastewater
- **Material:** FastPrep-24™ instrument, FastDNA™ Spin Kit for Soil containing Lysing Matrix E
- **Buffer:** Sodium Phosphate Buffer and MT Buffer supplied with the FastDNA™ Spin Kit for Soil

Protocol and Parameters

500ml of primary effluent was collected and immediately stored on ice. 25 ml of each sample was filtered through a 0.2-µm-pore size supor-200 filters and each filter was placed in a sterile 1.5 ml microtube and stored at -80 °C. For DNA extraction.

1. Cut the frozen filters with a sterile cutter.
2. Add the cutted filters to a Lysing Matrix E tubes.
3. Add 978 µl of Sodium Phosphate Buffer and 122 µl of MT buffer, provided with the FastDNA™ spin kit for Soil.
4. Homogenize in the FastPrep-24™ instrument for 120 seconds at a speed setting of 6.0
5. Centrifuge at 14,000 x g for 5-10 minutes to pellet debris.
6. Proceed with the FastDNA™ Spin Kit for Soil extraction protocol.

Conclusion

- The FastPrep-24™ and associated matrices have demonstrated **successful lysis and DNA extraction** from 20 samples of wastewater in only 120 seconds.
- This method saves hours of work during sample preparation, ensures **high purified DNA** and an **effective PCR amplification**.

Successful sample preparation using the MP Biomedicals FastPrep® product line has been highlighted in thousands of scientific articles. To access articles and other materials, visit www.mpbio.com/FastPrepLibrary.

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