

**Molecular Biotechnology Programme** 

Uppsala University School of Engineering

# UPTEC X 06 029 Date of issue 2006-06

Author

## Sara Ehrs

Title (English)

# Evaluation of automated sample preparation for detection of *Bacillus cereus* DNA in animal samples, animal feed and food

Abstract

The automated purification of bacterial DNA from different samples using the ABI Prism 6700 Automated Nucleic Acid Workstation was often hindered by clogging of the purification membrane by particles in the samples. The introduction of a centrifugation step facilitated the possibility to purify *Bacillus cereus* DNA from 26 different animal-, animal feed- and food samples. The centrifugation can be done at high speed in order to make the pellet hard. When centrifugation was done at 9000 rpm for 5 min (Ct 30.2) as much DNA was recovered as when centrifugation was performed at 2100 rpm for 2 min. (Ct 30.8). It could be seen that free DNA in complex matrices was protected when proteinase K was used as lysis method (Ct 27.9). DNA was degraded in matrices treated by boiling (Ct 38.4), at room temperature (Ct 33.9) as well as by treatment with a commercial lysis buffer; powerlyse (Ct 30.1). The use of a centrifugation step has to be tested also with viable cells.

#### Keywords

*B. anthracis*, *B. cereus*, Automated sample preparation, ABI Prism 6700 Automated Nucleic Acid Workstation

#### Supervisors

## **Rickard Knutsson** Swedish National Veterinary Institute (SVA)

Scientific reviewer

## **Björn Herrmann** Department of Medical Sciences, Uppsala University

Project name		Sponsors	
Language English		Security	
ISSN 1401-2138		Classification	
Supplementary bibliographical information		Pages	30
<b>Biology Education Centre</b> Box 592 S-75124 Uppsala	Biomedical Center Tel +46 (0)18 4710000		Husargatan 3 Uppsala Fax +46 (0)18 555217