Detection of Enterotoxigenic Bacillus Cereus Based on Genes of Non-hemolytic Complex (NHE) in Dairy Samples of Zanjan

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Background & Objectives: *Bacillus cereus* is a Gram positive and spore-forming bacterium that is widely distributed in the environment. This bacterium is a human opportunistic pathogen and can cause diarrheal and emetic types of food poisoning. The diarrheal illnesses can be caused by hemolysin BL (HBL), non-hemolytic (NHE) and cytotoxin K. Dairy is commonly contaminated with *B. cereus*. In this research we have studied the NHE complex in dairy samples of Zanjan.

Methods: We have detected B. cereus in 20 of 70 different brands of dairy samples which have purchased from food stores in Zanjan. The samples were cultured in Polymixin-Pyruvate-egg yolk-mannitol-bromocresol purple agar (PEMPA). Following the biochemical tests, the PCR reaction has been done to identify the bacterial colonies. The bacterial colonies which have been positive for *B.cereus* have been checked for genes of NHE Complex using specific primers.

Results: The results of multiplex PCR have shown that nineteen samples have contaiend NHE complex.

Conclusion: Despite its common dietary role, dairy in Iran has rarely been investigated from a microbiological point of view. It seems that NHE complex is useful marker in detection of enterotoxigenic Bacillus cereus.We have been supposed to study NHE complex in other Iranian food samples to find general prevalence in them.

Keywords: *Bacillus cereus;* Dairy; NHE Complex; Multiplex PCR