Abstract: Background and Objectives: B. cereus is a gram-positive, spore forming bacteria which is frequently associated with emetic and diarrheal types of foodborne illness. The diarrhoeal illnesses can be caused by hemolysin BL (HBL), non-hemolytic (NHE) and cytotoxin K. Haemolysin BL is a unique and potent three component pore forming toxin composed of a binding component, B, and two lytic components, L1 and L2. Rice is commonly contaminated with B. cereus. By considering the fact that this bacterium is able to tolerate high temperature in the cooked rice, the spores are able to be germinated. The aim of this study is to detect enterotoxigenic B. cereus by hblC gene.

Materials & Methods: In this study, ten different samples of rice were analyzed for the presence of entrotoxigenic B. cereus. Isolation of B. cereus was done by selective plating on polymixin-pyruvate-egg yolk-mannitol-bromocresol purple agar (PEMPA). Following the biochemical tests, PCR method has been applied for confirming Bacillus cereus. DNA extraction has done by freeze and boiling method then by using specific Bacillus primers, PCR have done to confirm bacterial colonies. Then, PCR reaction for the presence of enterotoxigenic hblC gene have applied.

Results: The results have shown that all rice samples were contaminated with B. cereus but hblC gene was found in only 4 (40%) strains.

Conclusion: Despite its common dietary role, rice in Iran has rarely been investigated from a microbiological point of view. This was the first time that enterotoxigenic Bacillus cereus isolated from rice of Iran is differentiated by hblC gene. In future, we will study hblA and hblD genes of HBL complex in these samples. We can also offer our data to health organization by the aim of decreasing food borne illnesses.

Bacillus cereus, rice, hblC gene, PCR.

Presentation: Poster