Abstract

Gut bacteria play a remarkable role in supplementation of nutrients, absorption of dietary compounds, renewal and development of intestinal cell, production of molecules for inter and intra-specific communication of species and protection against pathogens. Scorpions are medically important species, but microbiota available in gut of scorpions had not been studied. The present study was conducted to isolate and characterize the gut bacterial diversity of two important species of Buthidae family, *Hottentotta tamulus* and *Androctonus finitimus*. For objective, five scorpions were dissected, and sixteen different bacterial colonies were isolated from their gut. The isolated bacteria were identified by morphology, biochemical and molecular characterization methods. The sequence analysis of the 16S rRNA gene of the bacterial isolates was performed through the Sanger sequencing method and Phylogeny to show the homology of the bacteria. Results based on these methods, *Bacillus subtilis, Serratia marcescens, Bacillus cereus, Bacillus paramycoide* and *Bacillus Velezensis* were detected in five isolates of gut. All bacteria belong to the genera Firmicutes and Proteobacteria. The gram-positive bacteria were found more dominant than the gram-negative bacteria. The optimum conditions for the growth of these bacteria were 37°C and pH 7. The phylogenetic analysis of 16S rRNA showed high levels of sequence similarity to other identified bacterial strains. The bacteria in the gut of scorpion are diverse, contains differential composition, and seems species-specific. Thus, this study may provides an insight for the future research about the role of these bacteria in determining the function and composition in scorpion`s health and biology.