

Detection of genes of bacillibactin, fengicin and polyglutamic acid synthesis in the genomes of *Bacillus velezensis* NUChC C1 and NUChC C2b

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Bacteria of *Bacillus* genera are known to be widespread in the environment, including soil, and are known to produce a variety of important natural substances. Such substances include cyclic lipopeptide fengicin, siderophore bacillibactin and polyglutamic acid. We previously isolated and identified strains of *Bacillus velezensis* NUChC C1 and NUChC C2b (the nucleotide sequences deposited in the GenBank with accession numbers MN508954.1 (NUChC C1), MN749356.1 and MN749357.1 (NUChC C2b). The aim of this study was to investigate the presence of genes of bacillibactin (*dhbF*), fengicin (*fenA*) and polyglutamic acid (*epsK*) synthesis in the genome of these strains. The 20 µl PCR reaction mixture contained 10 µl of 2x DreamTaq PCR Master Mix (ThermoScientific), 30 µmol of each primer, and 50 ng of DNA. PCR products were separated in a 1.7% agarose gel containing 0.01% ethidium bromide. The results were visualized in UV light. Nucleotide sequences of primers for amplification of fragments of *dhbF*, *epsK* and *fenA* genes were selected using MEGA 5.0 and Primer3 programs based on known sequences of these genes in representatives of *Bacillus*, listed in the databases GenBank and Kyoto Encyclopedia of Genes and Genomes. The research showed that the studied strains have only the gene for synthesis of bacillibactin. Thus, the strains are perspective for use in the medical and agricultural fields.