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GENOTYPING OF SALMONELLA BACTERIA ISOLATES ISOLATED FROM CLINICAL MATERIAL AND FOODSTUFFS

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Abstract

S. enterica is currently the most common foodborne bacterial pathogen causing severe illness. Of the more than 2,500 identified S. enterica, only a few serovars are of public health importance. In the available literature, there is evidence that S. enterica Typhimurium and S. enterica Enteritidis are the most common causes of human salmonellosis, including Kazakhstan.

The aim of the study is genotyping of Salmonella bacterial isolates isolated from clinical material and food in 2018-2019 in Almaty.

Using RAPD PCR, a study of 25 S. enterica isolates isolated from foodstuffs and 65 S. enterica isolates isolated from clinical material, previously identified using biochemical tests, was carried out. Of 25 S. enterica isolates isolated from foods, 14 (56%) isolates were identified as S. enterica Typhimurium, 8 (32%) - S. enterica Enteritidis, 3 (12%) - S. enterica Virchow. In the study of 65 S. enterica isolates from clinical samples, 29 (44.6%) isolates have been identified as S. enterica Typhimurium, 13 (20%) - S. enterica Enteritidis, 23 (35.4%) -Salmonella enterica Virchow.

For three types of bacteria, S. enterica, a specific set

of DNA fragments was identified that distinguish them from each other in RAPD PCR. Using RAPD PCR, two genetically different groups with different sets of DNA fragments of S. enterica Typhimurium isolates and three genetically heterogeneous isolates of S. enterica Virchow were found. With the accumulation of a sufficient number of mutations in genes, genotyping methods begin to distinguish isolates. In some cases, the isolates do not differ in the distribution of DNA fragments, which indicates the genetic similarity of these isolates. A genetic relationship was found in S. enterica Enteritidis isolates.

The discovery of various genotypes of S. enterica Typhimurium and S. enterica Virchow strains circulating in Kazakhstan indicates the need for more in-depth genetic studies.

Biography

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