UDC 575.17:575.113.2:633.34

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BIOINFORMATIC ANALYSIS OF NUCLEOTIDE SEQUENCES OF *GLI-1* LOCI OF *TRITICUM AESTIVUM* L.

The wheat seed storage protein, gliadin, has immense and well studied polymorphism based on the multiple allelism at each of the six main *Gli* loci. Therefore, gliadin alleles provide a set of suitable genetic markers for the identification and comparison of wheat genotypes.

Gliadin genes are highly polymorphic. There are two classifications of gliadins developed on the base of acid PAGE method: by Sozinov and Poperelya [1] (often used in Ukraine) and by Metakovsky et al. [4] (international). Moreover, there are

PCR primers, that could be used for identification some allelic variants of gliadins and polymorphism studying [2, 6]. Recently most scientific works are devoted to sequencing of gliadin genes. Thereby, the aim of the study was to analyze *Gli-1* loci and microsatellite locus *Taglgap* (that were studied by PCR in the previous investigations [3, 5]) in the nucleotide sequences from Genebank using bioinformatic tools.

A set of 121 nucleotide sequences from Genebank was found and analyzed for apparentness of *Gli-A1* sequence that could be detected using PCR primers developed by Zhang et al [2]. *Gli-A1.1* allele was found in 70,1% of *Triticum aestivum* sequences, when *Gli-A1.2* allele in 29,9%. We have found large sequences MG560140 and EF426565 that have two copies of *Gli-A1.1* allele and both alleles *Gli-A1.1* and *Gli-A1.2,* respectively. Similar to *Gli-A1,* 101 nucleotide sequences of *Gli-D1* locus were analyzed. *Gli-D1.1* and *Gli-D1.2* alleles were found in 97% and 3% of *Triticum aestivum* sequences respectively.

The frequency of *Gli-A1.1* and *Gli-A1.2* alleles have the same tendency both in sample of sequences from NCBI, in worldwide wheat collection and in Ukrainian wheat collection analyzed by PCR previously. The frequency of *Gli-A1.1* is higher than *Gli-A1.2* allele. The frequency of *Gli-D1.1* allele is very high in the sample from NCBI, *Gli-D1.2* allele also prevails in worldwide wheat collection, whereas in Ukrainian wheat collection *Gli-D1.2* is dominant.

Only 17 nucleotide sequences from Genebank containing microsatellite locus *Taglgap* were found. Six different alleles: 219 bp, 237 bp, 249 bp, 252 bp, 270 bp, 285 bp were detected for *T. aestivum*. Five of them, were detected also by PCR in the previous study.

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