

19th World Congress on

BIOTECHNOLOGY

November 13-14, 2017 Osaka, Japan

Cloning and sequence analysis of *bZIP* and *WRKY* transcription factor genes in Einkorn Wheat (Siyez)

Pinar Baloglu and Mehmet Cengiz Baloglu
Kastamonu University, Turkey

Wheat is an annual herbaceous plant whose breeding is done all over the world. Siyez wheat (*Triticum monococcum*) with 2n chromosomes is the first wheat variety which is known the oldest and taken culture. *bZIP* transcription factors have DNA binding motifs and form the leucine zipper dimerization. Most of *WRKY* type transcription factors control regulation of important functions for the development of plants. In this study, transcription factor genes were firstly cloned from Einkorn wheat. For this, genes were amplified in PCR using gene specific primers with *Pfu* Taq Polymerase enzyme. PCR products were transferred to pENTR™/D-TOPO® input vector. Plasmids containing genes were sent to sequencing. Finally, the sequences of the genes were aligned using CLC Genomics Workbench bioinformatics program. *bZIP* gene with 450 bp in length and *WRKY* gene with 672 bp in length were successfully cloned in a Gateway-compatible input vector. DNA sequence of genes was translated to protein sequence. A total of 150 amino acids in length for *bZIP* proteins and a total of 224 amino acids in length for *WRKY* proteins were determined. 3-D structure of proteins was modeled using Phyre2 program. The structural differences of these proteins in Siyez were identified. With this study, the sequence of *bZIP* and *WRKY* type transcription factors genes were firstly determined in ancestral wheat cultivar, Siyez and tried to obtain information about the function of these genes. Obtained results from this study may be used for development of abiotic stress resistance plants.

Biography

Pinar Baloglu is a Biologist at Kastamonu University in Research and Application Center. She has received her MSc at Department of Genetic and Bioengineering from Kastamonu University. In her thesis, she has identified 79 *LEA* (Late Embryogenesis Abundant) genes in cucumber genome. She has published 2 manuscripts on topics concerning with gene families identification in different plants. She has also attended many congress related with Molecular Biology and Bioinformatics. Presently, she is a PhD candidate in same department.

pbaloglu@kastamonu.edu.tr