DEVELOPMENT OF A PCR PRIMER SET FOR THE HMW GLUTENIN GENES EXPRESSED IN CHINESE SPRING WHEAT

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ABSTRACT

The high-molecular-weight (HMW) glutenin genes, located on the group 1L chromosome arms, are a major determinant for baking quality in wheat (*Triticum aestivum* L.). We previously identified chromosome regions influencing the expression of the HMW glutenins at the protein level (Wanous et al., 2003, Theor. Appl. Genet. 106: 213-220). Now we are extending this analysis to expression of these genes at the transcriptional level using real time reverse transcription polymerase chain reaction (RT-PCR). Primers and protocols for RT-PCR amplification of the HMW glutenin genes were designed. The amplified products range in size from 175 to 409 bp and target transcribed segments of the genes, making them well suited to gene expression studies utilizing RT-PCR. For *Glu-B1-1*, *Glu-B1-2*, and *Glu-D1-2*, primers were designed from sequences in Genbank, available on the NCBI website, using Lasergene MegAlign software (DNASTAR) to find sequence differences between the HMW glutenin genes, and Lasergene PrimerSelect software to design the primers. The *Glu-D1-1* primer sequences were obtained from D’Ovidio et al. (1995, Theor. Appl. Genet. 91: 189-194). Because the primers and PCR protocols are specific for each HMW glutenin gene, they can also be used for identification of the genes from genomic DNA samples.