Apr 20th, 11:00 AM - 2:00 PM

Genetic Diversity in Concentration of a Protein Subcomponent in Selected Wheat Lines

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Determining Concentration of Alpha Gliadin Subcomponent in Wheat

Celiac Disease is a hypersensitive response to gluten caused by HLA-DQ2 or HLA-DQ8 T-cell presentation, initiating destruction of intestinal epithelial cells. Studies indicate that an indigestible fragment of the gluten molecule, alpha-gliadin subcomponent 33-mer, rich in proline and glutamine, is responsible for the hypersensitivity response. Determination of 33 mer concentration in wheat lines would be beneficial to future development of wheat lines with reduced 33 mer concentration. Protein from wheat flour was extracted and subjected to western blot in order to quantify the concentration of 33-mer. This will be a valuable tool for future research efforts focused on identification and development of wheat lines with reduced concentrations of 33-mer. Wheat with reduced 33-mer may be suitable for consumption by individuals with celiac disease.