CYREX® Laboratories

CLINICAL SPECIFICATIONS

γ-GLIADIN-15-MER

Function:

Gliadin is a glycoprotein. It is an alcohol-soluble protein present in wheat and occurring in various forms (α-, γ-, and ω-gliadins). γ-Gliadins-15-mer are considered to be the most ancient of the gluten family.[4] This group of gliadins works with gluten proteins to determine the functional properties of wheat flour.[1]

Antibodies Appear:

Celiac disease[2]
Wheat allergy[3]

Known Cross-Reactions: Cerebellar,[5] *Candida albicans*[6]

Clinical Significance:

Gliadin contains the toxic peptides associated with Celiac disease (CD).[1] Detection of antibodies to gliadin may indicate abnormal mucosal immune response and intestinal barrier dysfunction. Coupled with Transglutaminase-2 antibodies testing, Gliadin antibody assay results can assist with differentiating CD and non-celiac gluten-sensitivity (NCGS). If both are IgA positive, the patient most likely has CD, which must be confirmed by biopsy. If Gliadin is positive and Transglutaminase negative the patient could be suffering from gluten-reactivity (GR) without enteropathy. If Transglutaminase is positive and Gliadin is negative the patient could be suffering from autoimmunity other than CD and GR. γ-gliadins have unusually high levels of glutamine and proline.[1] In Camarca's T-cell study, a great majority of subjects responded to γ-gliadin, leading the scientists to suggest that γ-gliadin plays a significant role in the pathogenesis of Celiac disease.[2]

References:

1. Altenbach, et al. Analysis of expressed sequence tags from a single wheat cultivar facilitates interpretation of tandem mass spectrometry date and discrimination of gamma gliadin proteins that may play different functional roles in flour. BMC Plant Biol, 2010; 10:7-21.
2. Camarca, et al. Intestinal T-cell responses to gluten peptides are largely heterogeneous: implications for a peptide-based therapy in celiac disease. J Immunol, 2009; 182:4158-4166.
3. Palosuo. Update on wheat hypersensitivity. Curr Opin Allergy Clin Immunol, 2003; 3:205-209.
4. Qi, et al. The γ-gliadin multigene family in common wheat (Triticum aestrivum) and its closely related species. BMC Genomics, 2009; 10:168-182.
5. Vojdani, et al. Immune response to dietary proteins, gliadin and cerebellar peptide in children with autism. Nutr Neurosci, 2004; 7(3):151-161.
6. Corouge, et al. Humoral immunity links *Candida albicans* infection and celiac disease. PLoS One, 2015; 10(3):e0121776.