CYREX® Laboratories

CLINICAL SPECIFICATIONS

γ-GLIADIN-15-MER (saliva)

Antigen Found In:

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.[3] This group of gliadins works with gluten proteins to determine the functional properties of wheat flour.[1]

Associated With:

Loss of oral tolerance

Known Cross-Reactions: Cerebellar[4]

Clinical Significance:

The presence of salivary antibodies to γ-Gliadin is an indication of loss of mucosal tolerance and the onset of food immune reactivity. Gliadin contains the toxic peptides associated with Celiac Disease (CD).[1] Multiple gliadins plus glutenin make up the gluten family of proteins that may trigger immune reactivity in patients. Assessing immune reactivity to a variety of wheat proteins increases the sensitivity for wheat/gluten reactivity. Detection of antibodies to gliadin may indicate abnormal mucosal immune response and intestinal barrier dysfunction. Coupled with Transglutaminase antibodies testing, Gliadin antibody assay results can assist with diagnosing potential CD and Gluten Reactivity (GR). If both are positive, the patient most likely developing CD. If Gliadin is positive and Transglutaminase negative the patient could be suffering from 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]

Suggested Reading:

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. Immunol, 2009; 182:4158-4166.
3. Qi, et al. The g-gliadin multigene family in common wheat (Triticum aestrivum) and its closely related species. BMC Genomics, 2009; 10:168-182.
4. Vojdani, et al. Immune response to dietary proteins, gliadin and cerebellar peptide in children with autism. Nutr Neurosci, 2004; 7(3):151-161.

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