

## CLINICAL SPECIFICATIONS

### $\alpha$ -GLIADIN-17-MER

#### Function:

Gliadin is a glycoprotein. It is an alcohol-soluble protein present in wheat and occurring in various forms ( $\alpha$ -,  $\gamma$ -, and  $\omega$ -gliadins).  $\alpha$ -Gliadin-17-mer elicits a strong T-cell response.<sup>1,2</sup>

#### Antibodies Appear:

Autism<sup>5</sup>  
 Celiac disease<sup>1,2,3,4</sup>  
 Wheat allergy<sup>3</sup>

**Known Cross-Reactions:** Cerebellar<sup>5</sup>

#### Clinical Significance:

Gliadin contains the toxic peptides associated with Celiac disease (CD).<sup>1,2,3,4</sup> 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. In a study measuring T cell responses to an array of wheat antigens, 17-mer and 33-mer elicited the strongest and most consistent responses.<sup>2</sup>

#### References:

1. Anderson, et al. In vivo antigen challenge in celiac disease identifies a single transglutaminase-modified peptide as the dominant  $\alpha$ -gliadin T-cell epitope. *Nature Med*, 2000; 6(3):337-342.
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. Tye-Din and Anderson. Immunopathogenesis of celiac disease. *Curr Gastroenterol Reports*, 2008; 10:458-465.
5. Vojdani, et al. Immune response to dietary proteins, gliadin and cerebellar peptide in children with autism. *Nutr Neurosci*, 2004; 7(3):151-161.