CYREX® Laboratories

CLINICAL SPECIFICATIONS

GLUTENIN-21-MER (saliva)

Function:
Glutenin or Glutenine is a wheat protein that together with gliadin produces gluten. Glutenin gives firmness to bread dough during the kneading process by increasing the stability through a 3-dimensional network.

Associated With:
Loss of oral tolerance

Known Cross-Reactions: Dermal elastin,[1] Rice globulin[3]

Clinical Significance:

The presence of salivary antibodies to Glutenin is an indication of loss of mucosal tolerance and the onset of food immune reactivity. 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. Glutenin makes up one of the T cell stimulatory gluten peptides found in wheat.[4] Wheat Glutenin (like rice globulin) is rich in glycine and glutamic acid or glutamine,[3] and like gluten and gliadin, Glutenin is soluble in alcohol, not water.[5] Serum antibodies IgG and IgA to Glutenin are found patients with Celiac disease[2, 4] and IgA antibodies are found in patients with Dermatitis Herpetiformis.[1] Studies indicate that there is a reduction in serum antibodies against Glutenin after implementation of a gluten-free diet.[1, 5]

Suggested Reading:

1. Bodvarsson, et al. Dermatitis herpetiformis – an autoimmune disease due to cross-reaction between dietary glutenin and dermal elastin? Scan Immunol, 1993; 38(6):546-550.
2. Howdle. Gliadin, glutenin or both? The search for the holy grail in coeliac disease. Eur Gastroenterol Hepatol, 2006; 18(5):483-491.
3. Kamatsu and Hirano. Rice seed globulin: a protein similar to wheat seed glutenin. Phytochemistry, 1992; 31(10):3455-3459.
4. Mitea, et al. Fine specificity of monoclonal antibodies against celiac disease-inducing peptides in the gluteome1-3. Am Clin Nutr, 2008; 88:1057-1066.
5. Stern, et al. Analysis and clinical effects of gluten in coeliac disease. Eur Gastroenterol Hepatol, 2001; 13:741-747.