

WHEAT/GLUTEN  
PROTEOME REACTIVITY  
& AUTOIMMUNITY

ARRAY 1  
MUCOSAL GLUTEN  
REACTIVITY SCREEN

ARRAY 2  
INTESTINAL ANTIGENIC  
PERMEABILITY SCREEN

ARRAY 4  
GLUTEN-ASSOCIATED  
CROSS-REACTIVE FOODS  
AND FOODS SENSITIVITY

ARRAY 5  
NEUROAUTOIMMUNITY  
PANEL

# ARRAY 3

BLOOD SERUM

## ARRAY 3 – Antibody WHEAT/GLUTEN PROTEOME REACTIVITY & AUTOIMMUNITY™

- ▶ Accurately identify Gluten Sensitivity
- ▶ Assess immune responses to wheat-associated proteins, enzymes, and peptides
- ▶ Measure antibody production against an array of wheat polypeptides
- ▶ Evaluate both alcohol- and water-soluble fractions of wheat
- ▶ Design effective treatment protocols for the Gluten-Sensitive or Celiac patient



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# WHEAT/GLUTEN PROTEOME REACTIVITY & AUTOIMMUNITY™

## Serum Specimen

Wheat IgG  
Wheat IgA

Wheat Germ Agglutinin IgG  
Wheat Germ Agglutinin IgA

Alpha Gliadin 17 MER IgG  
Alpha Gliadin 17 MER IgA

Alpha Gliadin 33 MER IgG  
Alpha Gliadin 33 MER IgA

Gamma Gliadin 15 MER IgG  
Gamma Gliadin 15 MER IgA

Omega Gliadin IgG  
Omega Gliadin IgA

Glutenin IgG  
Glutenin IgA

Gluteomorphin IgG  
Gluteomorphin IgA

Prodynorphin IgG  
Prodynorphin IgA

Gliadin-Transglutaminase IgG  
Gliadin-Transglutaminase IgA

Transglutaminase IgG  
Transglutaminase IgA

Glutamic Acid Decarboxylase  
(GAD65) IgG  
Glutamic Acid Decarboxylase  
(GAD65) IgA

Current laboratory tests to aid in the diagnosis of Celiac disease (CD) include tissue transglutaminase (tTG) and gliadin. However, more than one enzyme has been associated with the pathogenesis of CD, and the wheat kernel is composed of hundreds of potentially antigenic protein components, of which gliadin makes up a small portion. To broaden the view of CD and Gluten Sensitivity (GS), the Healthcare Practitioner can better diagnose the disorder by assessing antibody production against an array of protein, enzyme, and peptide antigens.

First to be analyzed are the glutes. The gluten proteins are either alcohol-soluble (glutenin) or water-soluble (gliadin, agglutinin). These peptides can stimulate both innate and adaptive immune mechanisms. A continuous immune response up-regulates the inflammatory cascade.

The second category of antigens includes the opioids. Such peptides are called exorphins because of their exogenous origin and morphine-like characteristics. In some individuals, dietary exorphins are resistant to intestinal and enterobacterial proteinases; thus, gluteomorphins and dynorphins may be absorbed from the gut lumen into the bloodstream. Consequently, an immune response against the opioid peptides can result in peptide antibody production and interfere with opioid receptor-binding capability.

Thirdly, lectins are incorporated into this array. Wheat germ agglutinins are lectins, or carbohydrate-binding proteins, with a capacity to bind to many cells and tissue antigens. Lectins, bound to cells involved in the immune system, are known to induce toxic damage, inflammation, and autoimmunity.

Finally, enzymes round out this panel. Glutamic Acid Decarboxylase is a major enzyme that catalyzes the conversion of L-glutamate to  $\gamma$ -aminobutyric acid (GABA), the principal inhibitory neurotransmitter in the brain, and a putative paracrine signal molecule in pancreatic islets. The calcium-dependent tTG catalyzes the formation of  $\epsilon$ -( $\gamma$ -glutamyl) lysine bonds between protein-bound glutamine and lysine residues.

Array 3, with its measurement of IgG and IgA antibodies against a repertoire of proteins, enzymes, and peptides, originated not only from  $\alpha$ -gliadin but also from  $\gamma$ -,  $\omega$ -gliadin, glutenins, agglutinins, exorphins, and specific enzymes involved in the pathogenesis of CD and GS, enhances the clinical sensitivity and specificity for the detection of Celiac disease and Gluten Sensitivity.

### Recommended for patients who:

- Have gut dysbiosis, which appears to be resistant to standard therapy
- Are suspected of having intestinal mucosal damage
- Complain of food allergy and intolerance
- Complain of chemical hypersensitivity
- Present multiple-symptom complaints (including Chronic Fatigue Syndrome and Fibromyalgia)
- Suffer from abnormal immune cell count and function
- May suffer from blood-brain barrier permeability, depression, or neuroautoimmunity
- Neuroautoimmune patients to consider:
  - Thyroid
  - Arthritis
  - Myocarditis
  - Dermatitis
  - Endocrinopathy
  - Polyendocrinopathy
  - Osteoarthritis
  - Pernicious Anemia

For the Clinical Application Guide, please visit [www.CyrexLabs.com](http://www.CyrexLabs.com)

Specimen Requirement:  
2 mL serum

