

# RELATED ANTIBODY ARRAYS AVAILABLE

Cyrex Laboratories offers full spectrum clinical testing for immune function and dysregulation. Today, the Healthcare Practitioner sees many multi-faceted, chronic illnesses, stemming from an increasingly unhealthy world environment. Cyrex antibody arrays assist with the diagnosis of a variety of autoimmune and neurodegenerative disorders as well as identify the environmental trigger and the stage of the disease.

## ARRAY 1-ANTIBODY

### GLUTEN SENSITIVITY SCREEN

The mucosal layer of the gastrointestinal tract acts as a first line of defense against food antigens and other environmental factors. The analysis of oral fluid, therefore, can identify Celiac disease at its earliest stage, where intervention can prevent villous atrophy and additional gut dysfunction. This non-invasive assessment should be implemented regularly for patients with a family history of Celiac disease, autoimmunity or neurodegenerative disorders.

## ARRAY 2-ANTIBODY

### INTESTINAL BARRIER INTEGRITY SCREEN

Intestinal barrier integrity plays a vital role in the overall health and well-being of patients. Those with a family history of autoimmunity or neurodegeneration should be assessed regularly. In addition, patients who present with multiple symptom complaints or complain of food allergy or intolerance may have increased intestinal barrier permeability. Intestinal Permeability Identification (IPI), through the measurement of antibodies to occludin/zonulin, actomyosin and lipopolysaccharide, provides an excellent method for any Healthcare Practitioner.

## ARRAY 3-ANTIBODY

### GLUTEN SENSITIVITY 12-PEP PANEL

Patients with Celiac disease or gluten sensitivity can produce antibodies against an array of protein, enzyme and peptide antigens. The measurement of IgG and IgA antibodies against 12 potentially pathogenic molecules involved in Celiac disease and gluten sensitivity enhances the clinical sensitivity and specificity for the detection of these disorders.

## ARRAY 5-ANTIBODY

### NEUROAUTOIMMUNITY PANEL

A panel of 24 tissue and receptor antigens, such as heart, liver, skin, joints, thyroid, sex organs, bone, brain and pancreas, can be used to detect a variety of autoimmune diseases and their possible association with Celiac disease. Tests that detect these molecules can identify the root cause of autoimmune disorders as well as warn about the need for preventive action. Antibody testing against the repertoire of these antigens not only addresses Celiac disease beyond the gut, but also may assist in the early detection, prevention and design of treatment for these disorders.



ARRAY 1  
GLUTEN SENSITIVITY  
SCREEN

ARRAY 2  
INTESTINAL BARRIER  
INTEGRITY SCREEN

ARRAY 3  
GLUTEN SENSITIVITY  
12-PEP PANEL

GLUTEN-ASSOCIATED  
CROSS-REACTIVE FOODS

ARRAY 5  
NEUROAUTOIMMUNITY  
PANEL

# ARRAY 4

BLOOD SERUM

## ARRAY 4 – Antibody

# GLUTEN-ASSOCIATED CROSS-REACTIVE FOODS

- Identify additional dietary proteins to which the Gluten-Sensitive or Celiac patient is sensitized
- Detect cross-reactions in the non-responsive patient
- Categorize the 1 in 2 GS or CD patient who is also sensitive to dairy
- Isolate triggers of gut inflammation
- Design an effective diet plan



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Laboratories

# GLUTEN-ASSOCIATED CROSS-REACTIVE FOODS

► IgG + IgA

Serum Specimen

<b>Cow's Milk</b>	
<b>α-Casein</b>	
<b>+ β-Casein</b>	
<b>Casomorphin</b>	
<b>Milk Butyrophilin</b>	
<b>American Cheese</b>	
<b>Chocolate</b>	
<b>Sesame</b>	
<b>Hemp</b>	
<b>Rye</b>	
<b>Barley</b>	
<b>Polish Wheat</b>	
<b>Buckwheat</b>	
<b>Sorghum</b>	
<b>Millet</b>	
<b>Spelt</b>	
<b>Amaranth</b>	
<b>Quinoa</b>	
<b>Yeast</b>	
<b>Tapioca</b>	
<b>Oats</b>	
<b>Coffee</b>	
<b>Corn</b>	
<b>Rice</b>	
<b>Potato</b>	

Cross-reactivity is an immune reaction between an antibody and an antigen (casein), in which the antibody was generated against a different, but similar, antigen (gliadin). The classical definition of molecular mimicry, or antigenic similarity, predicts that autoreactive Th1 lymphocytes are activated by epitopes derived from dietary proteins or microbial infections. After resolution of the infection or elimination of dietary protein, the activated autoreactive T-cells turn against self-tissue or self-organ, causing autoimmune disease.

Normal immune response is specific to each single antigen. B-cells make antibodies targeted to recognize each unique antigen encountered. However, some antigens are a mixture of macromolecules (proteins, bacteria, toxins, etc.), which contain several epitopes. Immune contact with a complex antigen can stimulate multiple immune responses to the individual macromolecules that make up the antigen as well as the individual epitopes of each macromolecule.

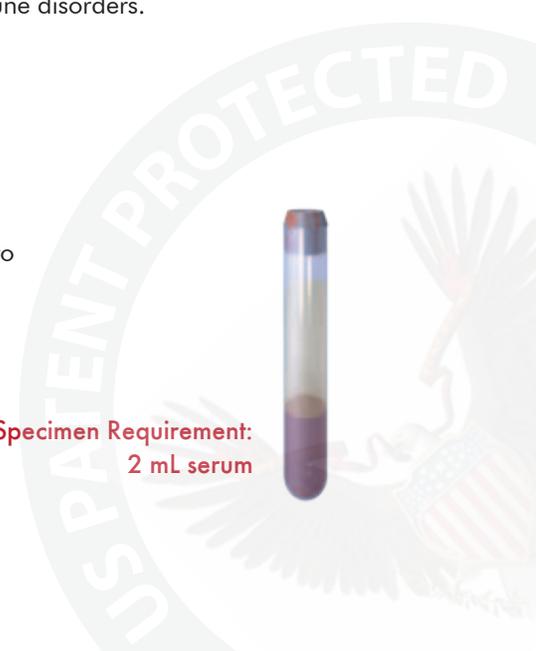
Patients with Gluten Sensitivity and Celiac disease are sensitized to a broad range of dietary proteins due to enzyme dysfunction, villi damage, or other disorders. A common problem is the digestion of dairy products; the casein protein, in particular. Consuming these food products will cause persistent symptoms and clinical complaints similar to the initial discomforts of the gluten sensitivity, which may result in neuroautoimmune disorders.

Complete normalization of gut lesions is very rare in adult patients with Celiac disease (8%), despite gluten-free diet compliance. Although a majority (65%) feels better, the ensuing inflammation in the gastrointestinal tract, due to cross-reactions with—and sensitization to—an array of food antigens, remains a cause for clinical concern. When the patient, despite adamant adherence to the gluten-free diet, is non-responsive, continues to exhibit clinical complaints or has therapy-resistant gut dysbiosis, an assessment of IgG + IgA antibodies to an array of food antigens associated with gluten, or known to cross-react with gluten, can guide the Healthcare Practitioner in tailoring a recovery diet plan and preventing devastating autoimmune disorders.

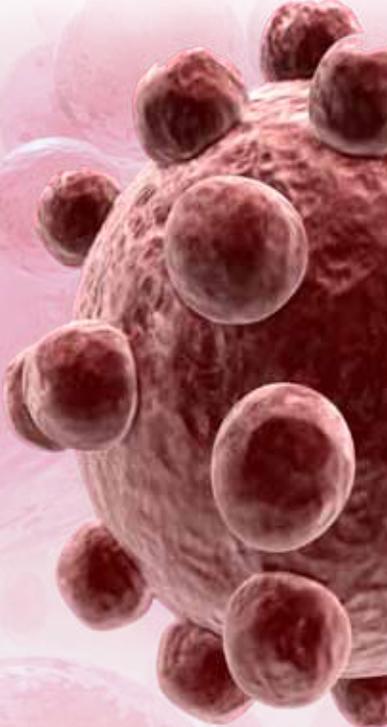
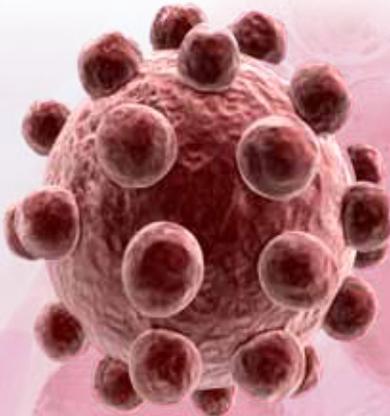
## Recommended for patients who:

- Have Gluten Sensitivity or Celiac disease
- Are non-responsive on a gluten-free diet
- Have gut dysbiosis, which appears to be resistant to standard therapy
- Have an autoimmune disorder

Specimen Requirement:  
2 mL serum



# ANTIBODY-ANTIGEN CROSS-REACTIVITY



**Reactive**

**Cross-Reactive**

**Non-reactive**



**GLIADIN ANTIGEN**

**CASEIN ANTIGEN**

**RICE ANTIGEN**

Complete binding of antigen to antibody

Partial binding of antigenic determinants

Insufficient binding of antigenic determinants