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PRACTITIONER

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TEST	RESULT			
Array 3X - Wheat/Gluten Proteome Reactivity & Autoimmunity	**IN RANGE (Normal)**	**EQUIVOCAL***	**OUT OF RANGE**	**REFERENCE** (ELISA Index)
Wheat IgG	0.47			0.0-1.8
Wheat IgA			3.03	0.3-2.3
Wheat Germ Agglutinin IgG	0.40			0.0-1.0
Wheat Germ Agglutinin IgA			2.83	0.4-2.3
Non-Gluten Proteins A IgG	0.59			0.0-1.3
Non-Gluten Proteins A IgA		2.25		0.4-2.4
Non-Gluten Proteins B IgG			1.40	0.0-1.3
Non-Gluten Proteins B IgA			2.95	0.4-2.9
Gliadin Toxic Peptides IgG	0.91			0.1-1.7
Gliadin Toxic Peptides IgA			3.82	0.6-2.6
Native & Deamidated Gliadin 33 IgG	0.84			0.0-1.4
Native & Deamidated Gliadin 33 IgA			2.74	0.4-2.0
Alpha Gliadin 17-mer IgG	0.71			0.2-1.2
Alpha Gliadin 17-mer IgA	0.94			0.2-1.5
Gamma Gliadin 15-mer IgG	0.65			0.0-1.2
Gamma Gliadin 15-mer IgA			3.51	0.6-3.0
Omega Gliadin 17-mer IgG	0.72			0.0-1.4
Omega Gliadin 17-mer IgA			3.55	0.5-2.4
Glutenin 21-mer IgG	0.70			0.0-1.2
Glutenin 21-mer IgA			4.79	0.4-2.9
Gluteomorphin + Prodynorphin IgG		0.98		0.0-1.2
Gluteomorphin + Prodynorphin IgA	0.90			0.3-2.4
Gliadin-Transglutaminase Complex IgG		1.15		0.0-1.3
Gliadin-Transglutaminase Complex IgA			2.70	0.1-2.1
Microbial Transglutaminase IgG	1.33			0.1-2.0
Microbial Transglutaminase IgA	1.63			0.5-2.1
Transglutaminase-2 IgG	0.70			0.0-1.4
Transglutaminase-2 IgA		2.08		0.3-2.1
Transglutaminase-3 IgG	0.95			0.0-1.4
Transglutaminase-3 IgA	1.60			0.4-2.4
Transglutaminase-6 IgG			1.88	0.0-1.2
Transglutaminase-6 IgA			3.40	0.4-2.0

* Reference ranges are calculated based on the mean ±2 standard deviations (SD). Results > 1 SD, and <2 SDs above the mean are considered to be equivocal. An equivocal result represents the range between negative and suspicious low positive results. Results >2 SDs are considered out of range, and positive.

Mark G. Kartub, M.D., Medical Director

CYREX® Laboratories

Array 3X
Patient Education Supplement

Cyrex Array 3X looks at several critical components of wheat which may cause immune reactions and over time may precipitate autoimmune reactions and autoimmune conditions. These reactions may cause obvious symptoms in many body organs and systems. A few symptoms can be gastrointestinal distress such as irritable bowel syndrome, diarrhea, bloating etc. A few other symptoms are foggy brain, thyroid problems, bone, joint and muscle problems. Always consult with your health care provider.

Wheat Positive Results – What does this mean?

The wheat tested is the full kernel containing the protein constituents of wheat. This includes what may be on or in the wheat kernel. These are gluten proteins, and non-gluten proteins (non-gluten proteins A and B and Wheat Germ Agglutinins). A positive result to wheat means that your digestive system is not absorbing these proteins well, therefore your immune system starts producing antibodies to gluten or non-gluten part(s) of wheat.

Gluten Family Reactivity

Gluten is a very long protein and very difficult for us to completely digest. Like a long curled string, our gut cuts the string into smaller and smaller pieces. The most common cut up, in other words, digested gluten pieces, have been identified. These gluten family pieces (antigens) tested by Array 3X are: Alpha Gliadin 17 Mer, Alpha Gliadin 33 Mer, Gamma-Gliadin, Omega Gliadin, Glutenin, Gliadin Toxic Peptide and Gluteomorphin/Prodynorphin. If any of these markers are positive (reactive), i.e. higher than normal levels of antibodies, please discuss going off gluten-containing foods with your practitioner.

Wheat Germ Agglutinin – What is it?

Wheat Germ Agglutinin is a protein which is part of a family called Agglutinins and Lectins. They basically are sticky substances that either stick onto other substances or make separate things stick together. Many plants have lectins or agglutinins and the accepted explanation is that they protect the plant from predators. If Wheat Germ Agglutinin crosses the intestinal barrier and gets into the immune system, we frequently see it as foreign and make antibodies against it. Since Wheat Germ Agglutinin is sticky, it may adhere to our own tissue and the antibodies may cause an attack on the agglutinin and the tissue onto which it is stuck. This is one of the ways autoimmune reaction and disease occur. In summary, Wheat Germ Agglutinin is not gluten, but is found in whole grain wheat. If your test results are positive (higher than normal levels of antibodies) the most logical suggestion is to not eat whole grain wheat and to be certain other wheat derived foods are not Wheat Germ Agglutinin contaminated.

Gliadin Transglutaminase Complex

The wheat tested is the full kernel containing the protein constituents of wheat. This includes what may be on or in the wheat kernel. These are gluten proteins, and non-gluten proteins (non-gluten proteins A and B and Wheat Germ Agglutinins). A positive result to wheat means that your digestive system is not absorbing these proteins well, therefore your immune system starts producing antibodies to gluten or non-gluten part(s) of wheat.

Transglutaminase Testing

As stated above, transglutaminase enzymes cause proteins to fold in specific ways to accomplish their given functions. Cyrex tests for antibodies to four transglutaminases.

Microbial Transglutaminase — Microbial Transglutaminase is not made by the human body, it is made by bacteria and is used in the food and drug industry. It is capable of cross reacting with the Gliadin-Transglutaminase complex. Those antibodies may trigger autoimmune reactivity.

Tissue Transglutaminase-2 (tTG2) — Transglutaminases are enzymes with multiple functions. One of the key functions is to build tissue structures. tTG2 is found throughout the body, but is the predominant enzyme in the intestinal villi. This makes it a preferred biomarker for possible Celiac disease.

Tissue Transglutaminase-3 (tTG3) — The transglutaminase found in skin and hair shaft follicles is tTG3. In some individuals, the ingestion of gluten causes eruptions on the skin known as dermatitis herpetiformis. Adherence to the gluten-free diet can clear the skin of these eruptions.

Tissue Transglutaminase-6 (tTG6) — The transglutaminase found in the brain and nervous system is tTG6. In some individuals, the ingestion of gluten causes neurological manifestations, such as gluten ataxia (walking or balance disorder) or peripheral neuropathy (tingling in the legs or feet). Adherence to the gluten-free diet can improve these neurological conditions.

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