CYREX® Laboratories

CLINICAL SPECIFICATIONS

RYE

Antigen Made From:

Whole Rye kernel

Associated With:

Allergy[1]
Baker's asthma[1,2]
Celiac disease[3,4]
Chronic fatigue syndrome[4]
Fibromyalgia[4]
Gluten sensitivity[3,4]
Irritable bowel syndrome[4]

Known Cross-Reactions: Sesame seed,[5] ω-gliadin;[6,7] Wheat, Barley, Soya flours,[1] Triiodothyronine (T3)[8]

Clinical Significance:

The presence of antibodies to Rye is an indication of food immune reactivity. The offending food and its known cross-reactive foods should be eliminated from the diet. The antigenic properties of Rye produce inflammatory injury in the absorptive surface of the small intestine.[3,4] Thus, it is associated with gastrointestinal disorders. Special consideration for patients who work in the baking industry must be taken, as flour hypersensitivity and baker's asthma associated with Rye have been reported.[1,2] Due to the cross-reactive nature of Rye and ω-gliadin, patients who test positive should be educated on exercise-induced anaphylaxis triggered by ω-gliadin.[6,7]

References:

1. Sandiford et al. Identification of crossreacting wheat, rye, barley and soya flour allergens using sera from individuals with wheat-induced asthma. Clin Exp Allergy, 1995; 25(4):340-349.
2. García-Casado et al. A major baker's asthma allergen from rye flour is considerably more active than its barley counterpart. FEBS Lett, 1995; 364:36-40.
3. Ciclitiera and Ellis. Relation of antigenic structure of cereal proteins to their toxicity in coeliac patients. Brit J Nutr, 1985; 53:39-45.
4. Weber et al. Emerging analytical methods to determine gluten markers in processed foods – method development in support of standard setting. Anal Bioanal Chem, 2009; 395:111-117.
5. Vocks et al. Common allergenic structures in hazelnut, rye grain, sesame seeds, kiwi, and poppy seeds. Allergy, 1993; 48(3):168-172.
6. Palosuo et al. Rye γ-70 and γ-35 secalins and barley γ-3 hordein cross-react with ω-5 gliadin, a major allergen in wheat-dependent, exercised-induced anaphylaxis. Clin Exp Allergy, 2001; 31:466-473.
7. Snégarogg et al. Study of IgE antigenic relationships in hypersensitivity to hydrolyzed wheat proteins and wheat-dependent exercise-induced anaphylaxis. Int Arch Allergy Immunol, 2006; 139:201-208.
8. Kharrazian, et al. Immunological reactivity using monoclonal and polyclonal antibodies of autoimmune thyroid target sites with dietary proteins. J Thyroid Res, 2017; 2017:4354723.

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CLINICAL SPECIFICATIONS

BARLEY

Antigen Made From:

Whole Barley kernel

Associated With:

Allergy[1,2]
Baker's asthma[1,2,3]
Celiac disease[4,5]
Chronic fatigue syndrome[5]
Fibromyalgia[5]
Gluten reactivity[4,5]
Irritable bowel syndrome[5]

Known Cross-Reactions: ω-gliadin;[1,6,7] Wheat, Rye, Soya flours;[1] Triiodothyronine (T3)[8]

Clinical Significance:

The presence of antibodies to Barley is an indication of food immune reactivity. The offending food and its known cross-reactive foods should be eliminated from the diet. The antigenic properties of Barley produce inflammatory injury in the absorptive surface of the small intestine.[4,5] Thus, it is associated with gastrointestinal disorders. Special consideration for patients who work in the baking industry must be taken, as flour hypersensitivity and baker's asthma associated with Barley have been reported.[1,2,3] Due to the cross-reactive nature of Barley and ω-gliadin, patients who test positive should be educated on exercise-induced anaphylaxis triggered by ω-gliadin.[1,6]

References:

1. Sandiford et al. Identification of crossreacting wheat, rye, barley and soya flour allergens using sera from individuals with wheat-induced asthma. Clin Exp Allergy, 1995; 25(4):340-349.
2. Savolainen. Flour protein antigens in occupational flour hypersensitivity. Occup Med, 1997; 47(6):341-343.
3. García-Casado et al. A major baker's asthma allergen from rye flour is considerably more active than its barley counterpart. FEBS Lett, 1995; 364:36-40.
4. Ciclitiera and Ellis. Relation of antigenic structure of cereal proteins to their toxicity in coeliac patients. Brit J Nutr, 1985; 53:39-45.
5. Weber et al. Emerging analytical methods to determine gluten markers in processed foods – method development in support of standard setting. Anal Bioanal Chem, 2009; 395:111-117.
6. Snégarogg et al. Study of IgE antigenic relationships in hypersensitivity to hydrolyzed wheat proteins and wheat-dependent exercise-induced anaphylaxis. Int Arch Allergy Immunol, 2006; 139:201-208.
7. Palosuo, et al. Rye gamma-70 and gamma-35 secalins and barley gamma-3 hordein cross-react with omega-5 gliadin, a major allergen in wheat-dependent, exercise-induced anaphylaxis. Clin Exp Allergy, 2014; 69:1316-1323.
8. Kharrazian, et al. Immunological reactivity using monoclonal and polyclonal antibodies of autoimmune thyroid target sites with dietary proteins. J Thyroid Res, 2017; 2017:4354723.

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CLINICAL SPECIFICATIONS

SPELT

Antigen Made From:

Whole Spelt kernel

Associated With:

Allergy[1,2]
Inflammatory bowel disease[3]
Intestinal lesions[3]

Known Cross-Reactions: Wheat, Barley, Rice, Maize (Corn), Peach;[6] Triiodothyronine (T3)[7]

Clinical Significance:

The presence of antibodies to Spelt is an indication of food immune reactivity. The offending food and its known cross-reactive foods should be eliminated from the diet. Although Spelt contains gluten proteins,[4] it is still recommended as a substitute grain for non-celiac gluten-sensitive or celiac patients.[5] Patients with inflammatory bowel disease, who present with intestinal lesions, exhibit elevated antibodies against Spelt.[3]

References:

1. Gall et al. Exercise-induced anaphylaxis to wheat flour allergy. Allergy, 2000; 55:1096-1097.
2. Pastorello et al. A lipid transfer protein involved in occupational sensitization to spelt. J Allergy Clin Immunol, 2001; 108(1):145-146.
3. Bartel et al. Ingested matter affects intestinal lesions in Crohn's disease. Inflamm Bowel Dis, 2008; 14:374-382.
4. Schober et al. Gluten proteins from spelt (Triticum aestivum ssp. spelta) cultivars: a rheological and size-exclusion high-performance liquid chromatography study. J Cereal Sci, 2006; 44:161-173.
5. Wüthrich. Unproven techniques in allergy diagnosis. J Invest Allergol Clin Immunol, 2005; 15(2):86-90.
6. Pastorello, et al. A lipid transfer protein involved in occupational sensitization to spelt. J Allergy Clin Immunol, 2001; 108(1):145-146.
7. Kharrazian, et al. Immunological reactivity using monoclonal and polyclonal antibodies of autoimmune thyroid target sites with dietary proteins. J Thyroid Res, 2017; 2017:4354723.

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CLINICAL SPECIFICATIONS

POLISH WHEAT

Antigen Made From:

Whole Polish Wheat kernel

Associated With:

Allergy[1,2,3]
Autoimmune disorders[1]
Celiac disease[1,3]
Non-Celiac gluten sensitivity[1,2,3]

Known Cross-Reactions: Triiodothyronine (T3)[4]

Clinical Significance:

The presence of antibodies to Polish Wheat is an indication of food immune reactivity. The offending food and its known cross-reactive foods should be eliminated from the diet. Triiodothyronine (T3) is a known cross reaction to Polish Wheat. To date, no cross-reaction studies on Polish Wheat could be found, however, due to its close relationship to durum wheat, patients with antibodies against Polish Wheat should abstain from all wheat products.

Note: Polish Wheat is also known as Camel's Wheat, Egyptian Wheat, Khorasan wheat and Kamut®

References:

1. Kasarda. Grains in relation to celiac disease. Cereal Foods World, 2001; 46:209-210.
2. Simonato et al. Allergenic potential of Kamut® wheat. Allergy, 2002; 57:653-654.
3. Weber et al. Emerging analytical methods to determine gluten markers in processed foods – method development in support of standard setting. Anal Bioanal Chem, 2009; 395:111-117.
4. Kharrazian, et al. Immunological reactivity using monoclonal and polyclonal antibodies of autoimmune thyroid target sites with dietary proteins. J Thyroid Res, 2017; 2017:4354723.

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