CYREX® Laboratories

CLINICAL SPECIFICATIONS

NON-GLUTEN PROTEINS-A

Function:

Wheat proteins/peptides are commonly categorized as gluten and non-gluten. Non-gluten proteins alpha-amylase and serpin are a very small portion of wheat (2-4% and ~1.6% respectively). Non-gluten proteins are generally soluble in water or aqueous salt solutions and function as storage or enzyme proteins.

Associated With:

Baker's asthma[1,2,3]
Wheat allergy[3,4]
Chronic urticaria[5]
Eczema[6]
Wheat-dependent exercise-induced anaphylaxis[7]
IgA in Celiac disease[8,9]
IgG in Dermatitis herpetiformis[8]
Crohn's disease[9]

Known Cross-Reactions: Alpha-amylase with gamma-gliadin and glutenin, serpin with glutamine rich gluten proteins[10]

Clinical Significance:

Alpha-amylase and serpin can escape digestion and activate toll-like receptor-4 (TLR4).[11] Immune reactivity and clinical manifestations of non-gluten proteins are most often associated with hypersensitivities/allergies.[1-7] IgG and IgA antibodies to non-gluten proteins may be present due to cross-reactivity between non-gluten and gluten proteins.[8,9] Homology between γ-gliadin and non-gluten proteins has been shown.[8] Furthermore, wheat, barley, rye and corn belong to the same family of α-amylase inhibitors.[12]

References:

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