CYREX® Laboratories

CLINICAL SPECIFICATIONS

TRANSGLUTAMINASE-2 (saliva)

Function:

Transglutaminases are a family of enzymes. They form protein polymers, like scaffolding, which are vital in the formation of barriers and stable structures. The Transglutaminase found in the gastrointestinal tract is responsible for the conversion of glutamine to glutamic acid.[5] Commercial food industry uses transglutaminase to bind proteins together in the making of processed meats, including fish and imitation meats.[7]

Antibodies Appear:

Celiac disease[2, 4]

Known Cross-Reactions: Fibrinogen,[8] Transglutaminase-3 and -6[3]

Clinical Significance:

The earliest indication of a breakdown of the body's first line of defense is found in oral fluid.[6] Salivary IgA against Tissue Transglutaminase-2 (tTG2) can represent enzyme deficiency or an early event in Gluten Reactivity. tTG2 is a calcium dependent enzyme that has been recognized as the target autoantigen of endomysial antibodies present in most persons with Celiac disease. Although early research on the sensitivity and specificity of SIgA tTG2 for Celiac disease yielded conclusions that saliva measurements were not appropriate for detecting the disorder,[1] more recent research has shown greater sensitivity and specificity of salivary tTG2 before the onset of gut damage and after there is total villous atrophy.[2] Therefore, salivary tTG2 antibodies can be used to identify the earliest stage of the pathogenesis toward intestinal barrier damage. This measurement coupled with the detection of gliadin antibodies can help identify the early stage of gluten-related disorders.[2]

References:

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4. Ocmant and Mascart. Effective detection of celiac disease using salivary anti-transglutaminase. Am Med, 2007; 120:e15.
5. Park, et al. Transglutaminase 2 mediates polymer formation of ikBa through C-terminal glutamine cluster. Biologic Chem, 2006; 281(46):34965-34972.
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