

Celiac Disease

A complete panel
of tests for
a reliable diagnosis

BlueDot

BlueWell

Dtek



Celiac disease (CD) is a permanent gluten-sensitive enteropathy characterised by an abnormal flattening of the intestinal mucosa, resulting in abnormal intestinal absorption.

Etiology and Pathology

CD is triggered in predisposed patients by the ingestion of gliadin, a component of wheat gluten. CD is HLA-associated (>95% of patients display DQ2 encoded by DQA1*0501 and DQB1*0201). Though the peak onset is seen in early childhood, even in neonatals, it has been shown that the vast majority of patients are adult, being latent or silent Celiacs. Incidence rates of up to 1 in 300 have been reported in European countries. Therapy is life-time gluten-free diet.

Relevance of tTg and Gliadin antibodies

Anti-endomysium and anti-gliadin antibodies are a hallmark of Celiac Disease (CD). Although gliadin was very soon recognised to be the environmental etiologic factor of CD, it was till 1996 that tissue Transglutaminase (tTG), an enzyme already supposed to play a key role in the pathogenesis of CD, was confirmed as the preferred endomysial target for autoantibodies in CD patients. A body of evidence strongly suggests that the digested gliadin acts as a substrate for tTG and causes, in genetically predisposed patients, its immunological recognition through the expression of cryptic epitopes which are otherwise hidden in the passive molecule. These neo-epitopes are considered responsible for self-recognition impairing and play a central role in the auto-aggressive immune mechanisms of CD ; they initiate first the production of pathogenic autoantibodies against the activated tTG and finally drive as well the autoimmune response to the triggering element, gliadin, by means of an epitope spreading process. In this context, anti-gliadin antibodies appear as an epiphenomenon with only marginal role in the pathogenic events leading to CD. Nevertheless, as continuing gliadin ingestion is responsible for the maintenance of the disease and the trigger-specific antibodies disappear shortly after an appropriate diet is set up, screening for anti-gliadin antibodies is very useful for following the treatment up and for checking the effective elimination of gluten from feeding. On the other hand autoantibodies against tTG appear as earlier and more specific markers of CD. Further to the diagnosis confirmation in patients with a declared enteropathy, they allow the detection of latent or subclinical forms of the disease. Moreover, as anti-tTG antibodies are directly responsible for the intestinal damage in CD, they represent an acute tracer for monitoring the disease severity and confirming the recovery of a normal intestinal mucosa upon treatment.

BlueWELL transglutaminase

BlueWELL Transglutaminase ensures highest performance by using a human recombinant, full length sequence tTG antigen. The antigen is coated under optimum conditions for structural refolding and stabilisation of the enzyme. No BSA is used as a blocking agent on the plate in order to avoid possible interference (false positive reaction) with anti-BSA antibodies, known to occur frequently in patients presenting for digestive problems.

BlueWELL and BlueDot Celiac kits performance

BlueWELL Transglutaminase IgA

SENSITIVITY = 99.9.0% - SPECIFICITY = 99.9%

BlueWELL Transglutaminase IgG

SENSITIVITY = 99.9% - SPECIFICITY = 94.1%

BlueWELL Gliadin IgA

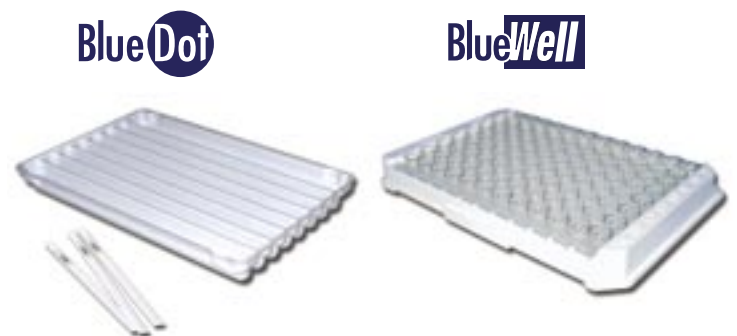
SENSITIVITY = 96.0% - SPECIFICITY = 97.1%

BlueWELL Gliadin IgG

SENSITIVITY = 97.3% - SPECIFICITY = 96.0%

BlueDOT Celiac (Gliadin and transglutaminase)

figures of the IgA or IgG subclass of tTg and Gliadin apply.



Available products and codes

Code	product	interpretation	number of tests
TTA02-96	Transglutaminase IgA (ELISA)	Quantitative	96 tests
TTG02-96	Transglutaminase IgG (ELISA)	Quantitative	96 tests
TTC02-96	Transglutaminase IgA/IgG Screen (ELISA)	Quantitative	96 tests
GLA02-96	Gliadin IgA (ELISA)	Quantitative	96 tests
GLG02-96	Gliadin IgG (ELISA)	Quantitative	96 tests
ENDA-24	BlueDOT Celiac IgA	Qualitative	24 tests
ENDG-24	BlueDOT Celiac IgG	Qualitative	24 tests

Bibliography

- Carroccio A. et al: Predictive value of serological tests in the diagnosis of celiac disease; Ann Ital Med Int 2002 Apr-Jun;17(2):102-7
- Ghedira, I. et al, Anti-endomysium, anti-reticulin and anti-gliadin antibodies, value in the diagnosis of celiac disease in the child, Pathol Biol (Paris) 2001 Feb;49(1):47-52
- Cataldo F, Prevalence and clinical features of selective immunoglobulin A deficiency in coeliac disease: an Italian multicentre study...., Gut 1998 Mar;42(3):362-5
- Volta U, Frequency and significance of anti-gliadin and anti-endomysial antibodies in autoimmune hepatitis, Dig Dis Sci 1998 Oct;43(10):2190-5
- Ditrich W.; SCHUPPAN, D.: Identification of tissue transglutaminase as the autoantigen of celiac disease [see comments] . In: Nat Med. 3 (1997), Nr. 7, S. 797-801