

GLUTEN SENSITIVITY GENETIC TEST (buccal swab)

Recent research indicates that immune sensitivity to gluten is exceedingly common. Although these reactions can cause malnutrition, growth failure in children, osteoporosis, many autoimmune diseases (including colitis, diabetes, arthritis, and many others), most of the affected individuals are unaware they have it because there have been no sensitive tests capable of diagnosis.

HLA molecular typing for coeliac disease is a genetic test and important tool able to discriminate individuals genetically susceptible to coeliac disease, especially in at-risk groups such as first-degree relatives (parents, siblings and offspring) of patients and in presence of autoimmune conditions (type 1 diabetes, thyroiditis, multiple sclerosis).

The *HLA-DQB1* gene provides instructions for making a protein that plays a critical role in the immune system. The *HLA-DQB1* gene is part of a family of genes called the human leukocyte antigen (HLA) complex.

The HLA complex is the human version of the major histocompatibility complex (MHC). The *HLA-DQB1* gene belongs to a group of MHC genes called MHC class II. MHC class II genes provide instructions for making proteins that are present on the surface of certain immune system cells. These proteins attach to protein peptides outside the cell. MHC class II proteins display these peptides to the immune system. If the immune system recognizes the peptides as foreign (such as viral or bacterial peptides), it triggers an immune response.

Researchers have identified hundreds of different alleles of the *HLA-DQB1* gene, each of which is given a particular number (such as *HLA-DQB1*06:02*).

At least two specific combinations of HLA gene variants (HLA haplotypes) have been found to increase the risk of developing coeliac disease.

One of these haplotypes, known as DQ2, is composed of the protein produced from *HLA-DQB1* gene variants known as *HLA-DQB1*02:01* or *HLA-DQB1*02:02*.

The other haplotype, known as DQ8, is composed of the protein produced from the *HLA-DQB1* gene variant known as *HLA-DQB1*03:02*.

In the genetic assessment for the predisposition to coeliac disease (a disease defined as villous atrophy and inflammation of the small intestine resulting from gluten sensitivity - the immune response to dietary gluten), the heterodimer HLA-DQA1*0501 and HLA-DQB1*0201 are some of the main genes required to develop the tissue lesion of coeliac disease.

However, it appears from research studies that HLA-DQ1, HLA-DQ2 and HLA-DQ3 can all lead to immune reactions to gluten (i.e. gluten sensitivity) even in the absence of intestinal villous atrophy.

The DQ2 and DQ8 haplotypes, which may occur separately or together, seem to increase the risk of an inappropriate immune response to the protein gluten. However, the DQ2 and DQ8 haplotypes are also found in 30% of the general population, and only 3% of individuals with the gene variants develop coeliac disease. Therefore, please note this test cannot diagnose coeliac disease.

The treatment for gluten sensitivity and coeliac disease is the same - complete-strict removal of gluten from the diet. The presence of any gene predisposing to immune reactivity to gluten (especially when accompanied by symptoms or an associated clinical syndrome) provides necessary information to the client to make an informed decision about whether or not to adopt a gluten-free diet.

ADVANTAGES OF TESTING

No need to re-introduce gluten into diet

Simple non-invasive collection method

No needles or blood draw required

Easy for children and adults

Can be performed in clinic or at home

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- ❖ HLA-DQB1 molecular analysis

Other gluten or other substance sensitivity tests available:

- **Zonulin (blood) [2023]:** Zonulin
- **Zonulin & Gluten Sensitivity Genetic Test (blood & buccal swab) [2024]:** Zonulin; HLA-DQB1 molecular analysis
- **Transglutaminase IgA (stool) [2016]:** Faecal Transglutaminase IgA
- **Gluten/Antigenic Food Sensitivity (stool) [2021]:** Faecal IgA antibody against Gluten (gliadin), Milk (casein), Egg (ovalbumin) and Soy (soy protein)
- **Anti-Tissue Transglutaminase IgA (stool):** Faecal anti-tissue transglutaminase IgA antibody
- **Gluten Sensitivity (stool):** Faecal antigliadin IgA antibody
- **Yeast Sensitivity (stool):** Faecal Anti-*Sacharomyces cerevisiae* IgA

How to order a test kit:

To order a test kit simply request the test name and/or test code on a NutriPATH request form and have the patient phone NutriPATH Customer Service on 1300 688 522.



Phone **1300 688 522** for further details
www.nutripath.com.au