HLA-DR/DQ Risk Assessment for Mold Hypersensitivity

Patient Name:	Sally Health	**Date Sample Collected:**	06/01/18
Lab ID Number:	123123	**Date Sample Received:**	06/03/18
Ordering Physician:	Dr. KCL	**Date Reported:**	06/05/18
Ordering Facility:	Hospital		

PATIENT'S HLA-DQ GENOTYPE:
DRB1*07, DQB1*02, DR53
DRB1*04, DQB1*03, DR53

Patient's Result Interpretation:
Mold-associated DR/DQ Markers: PRESENT
Genetic Risk for Mold Hypersensitivity: HIGH

RESULT INTERPRETATION:

This patient's DR/DQ haplotype is consistent with mold sensitivity.

INDICATIONS:

Human Leukocyte Antigens (HLAs), are found on the surface of nearly every cell in the human body. They help the immune system tell the difference between body tissue and foreign substances. HLA genes have many possible variations, allowing each person's immune system to react to a wide range of foreign invaders. In addition, some HLA genes are known to be associated with an increased risk of developing inflammatory and autoimmune diseases. The diagnosis of dampness and mold hypersensitivity syndrome (DMHS) is clinical and is based on the patient's history and careful examination supplemented by risk assessment based on an HLA-DR test. A study has shown the following HLA gene combinations are implicated in mold hypersensitivity: HLA-DR7-DQ2-DR53; DR7-DQ3-DR53; DR13-DQ6-DR52; DR17-DQ2-DR52; and DR18-DQ4-DR52 (2,5).

BACKGROUND:

A number of non-specific symptoms may occur in patients living or working in moisture-damaged buildings infested by hazardous microbiota. In the beginning, these symptoms are usually reversible, mild, and present as irritation of the mucosa and increased morbidity due to respiratory tract infections and asthma-like symptoms. Later, the disease may become chronic and the assessment of dampness and mold hypersensitivity syndrome (DMHS) may be warranted. DMHS presents with signs of irritation in the eyes, nose, and respiratory tract. Subsequently, the patient may experience recurrent sinusitis or bronchitis, and neurological manifestations such as headaches, nausea, and unexplained fatigue. Some may develop rheumatic symptoms resembling fibromyalgia or neurological symptoms which may progress into pain and/or numbness in the legs and arms and the so-called "brain fog" (1–3). These patients have impaired cognition, inability to concentrate, and problems with both short- and long-term memories. Some patients develop new-onset asthma, or may present asthma-like conditions, such as dyspnea, burning sensation in the respiratory tract, and productive or nonproductive cough.

Successful cure can be achieved with early avoidance of problematic moisture. Empirically, the majority of DMHS patients are recommended to adhere to a low carbohydrate diet, however there are no studies on the effect of different diets on the clinical course of DMHS. In addition, DMHS patients consuming large amounts of l-cysteine amino acid or *N*-acetylcysteine (NAC) report that their "brain fog" symptoms are relieved to some extent (5).

HLA typing results are defined by amplification of genomic DNA using polymerase chain reaction (PCR) sequence specific oligonucleotide probes (SSOP) technique on the Luminex platform. DNA sequence based typing and/or sequence specific primers are used as supplemental methods. The test has been cleared by the U.S. Food and Drug Administration. Test systems and its performance characteristic is determined by the Kashi Clinical Laboratories and under the accreditation guidelines of the American Society for Histocompatibility and Immunogenetics (ASHI).

Disclaimer: It is important to understand that carrying the risk allele does not mean that a person will develop a disease. Genetic testing alone is not predictive of disease because there are significant health and environmental factors that overlay genetic disposition. Results should be interpreted in light of other considerations such as environmental factors, age, ethnicity and other health conditions.

Reported and Reviewed By:

Zahra Mehdizadeh Kashi, Ph.D., HCLD
CEO and Laboratory Director

REFERENCES:

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