

Urticaria-Inducing Activity

Indications for Ordering

Detect basophil-activating factors in individuals with suspected chronic urticaria

Test Description

- Serum from individuals with chronic urticaria used to activate donor basophils, inducing histamine release and CD203c upregulation
- ELISA – detects histamine releasing factors
 - IgE, Fc epsilon R1 alpha-specific
- Flow cytometry – detects upregulation of CD203c on activated donor basophils
 - Geometric mean fluorescence intensity (gMFI) ratio determined – ratio of individual to donor basophils

Tests to Consider

Typical testing strategy

Initial testing should rule out more common etiologies for urticaria

- Complete blood count with eosinophil count
- Examination of stool for ova and parasites if appropriate travel history is present
- Vasculitis evaluation
 - ANA, RA
 - ESR or CRP
 - Skin biopsy may be necessary
- Cryoglobulinemia evaluation
 - Hepatitis B and C testing
 - Serum cryoglobulin
 - Complement assays – C3, C4, C1-esterase

If above evaluation is negative

- Chronic urticaria index testing
- TSH with autoimmune thyroid testing

Primary tests

[Urticaria-Inducing Activity 2005413](#)

- Determine histamine release in suspected chronic urticaria if urticaria may be due to autoimmune antibodies to the basophil IgE receptor or to IgE

[Urticaria-Induced Basophil Activation 2005416](#)

- Determine whether CD203c is upregulated in suspected chronic urticaria if urticaria may be due to autoimmune antibodies to the basophil IgE receptor or to IgE

Related test

[Urticaria-Inducing Activity with Thyroid Antibodies and Stimulating Hormone 2005415](#)

- Screen for possible thyroid autoimmunity in individuals with suspected chronic urticaria

Disease Overview

Prevalence – 20% in general population

- Common and complex dermatological condition

Symptoms

- Defined as hives lasting for >6 weeks
 - Wheal usually lasts for <24 hours
 - Pruritus may be intense
- Pigmentary changes if lesions last longer
- Associated with autoimmune thyroid disease (particularly Hashimoto thyroiditis)

Pathophysiology

- Basophil activation results in
 - Release of histamine
 - Upregulation of CD203c, a human basophil-specific lineage marker
- Pathogenesis of the disease is poorly understood
 - No evidence for exogenous allergen as cause
 - IgG autoantibodies directed against basophil- or mast cell-associated autoantibodies cause disease in many individuals
 - High-affinity IgE-Fc receptor1 – ~40%
 - IgE – ~5%
 - Unknown etiology in remaining

Test Interpretation

Results

- Positive – possible presence of basophil stimulating autoantibodies (or other serum factors)
 - Suggests autoimmune basis for urticaria
- Negative – no basophil stimulating autoantibodies detected
- Indeterminate – borderline basophil activation detected
 - May have autoimmune basis for urticaria

Limitations

- Validated for serum only
- Does not identify specific basophil-stimulating serum factors
 - Factors are most likely antibodies that target the high-affinity IgE-Fc receptor or IgE