

Anti-IgE

Test Name: Anti-IgE

Alternate Names: IgG Autoantibody to IgE
IgG anti-IgE

Test Code: 2105

CPT Code: 83516

Clinical Utility & Interpretative Comments: This ELISA measures IgG antibodies specific for IgE. These autoantibodies have been implicated as a causative agent in autoimmune chronic urticaria. In addition, these autoantibodies have also been implicated as significant in atopic dermatitis and hyper IgE syndrome.

Specimen Requirements: A minimum volume of 1.0mL of serum is required. Blood should be collected and allowed to clot prior to centrifugation. The specimen can be shipped via overnight courier at ambient temperature. If the specimen is to be held for more than two weeks, it should be stored frozen until shipped to the lab. Note that serum is the only acceptable specimen. Lipemic serum or serum with high levels of IgE may cause interference.

Please Note: Patients taking Xolair® should not be tested as they will have a false positive result on the Anti-IgE Test.

Background: Autoantibodies specific for IgE have been detected in multiple disease states. In chronic urticaria (CU) a subset of patients have an autoimmune etiology with auto-antibodies against IgE, FcεRI or FcεRII (CD23)²⁻⁶. IgE autoantibodies have also been described in atopic dermatitis⁷ and their presence correlates with disease severity. It has been suggested that these autoantibodies may have a role in regulation and modulation of the inflammatory cascade. In some cases these autoantibodies may be clinically significant if they bind to the surface of mast cells and basophils initiating a signal transduction cascade that results in the secretion of histamine and other mediators.

Units and Normal Reference Range: The result is reported in ng/mL. The reference range for a healthy population is less than 94 ng/mL.

Method: IgG antibodies specific for IgE are quantified with a solid phase indirect non-competitive ELISA. Human IgE is coated onto polystyrene micro-wells (solid-phase antigen). IgG antibodies in serum that bind to the IgE are detected with a labeled anti-human IgG antibody. The intensity of the color produced is proportional to the concentration of IgE-specific IgG in the sample.

Table 1. Percentage of CU patients positive with anti-IgE

Control sera* n=61	All CU Index sera^ n=100	CU Index+ Sera n=50	CU Index-Sera n=50
3.3%	8%	10%	6%

*= healthy volunteers

^= CU Index+ and CU Index- patients grouped together

Related Tests: The following may be appropriate for some patients:

Test Code	Test Name
403005	CU (Chronic Urticaria) Index™ Panel (includes all tests below)
2103	CU Index™
322	Anti-Thyroid Peroxidase IgG (Anti-TPO)
2004	Thyroid Stimulating Hormone (TSH)
2005	Anti-Thyroglobulin IgG (Anti-Tg)

Selected References:

- Greaves M. Chronic Urticaria. *J Allergy Clin Immunol.* 2000. 105(4):664-672.
- Tong LJ, Balakrishnan G, Kochan JP, Kinet JP, and Kaplan AP. Assessment of autoimmunity in patients with chronic urticaria. *J Allergy Clin Immunol.*1997. 99(4):461-465.
- Ferrer M, Kinet, JP, and Kaplan AP. Comparative studies of functional and binding assays for IgG anti-FcεRIα (α-subunit) in chronic urticaria. *J Allergy Clin Immunol.*1998. 101:672-676.
- Puccetti A, Bason C, Simeoni S, Millo E, Tinazzi E, Beri R, Peterlana D, Zaroni G, Senna G, Corrocher R, and Lunardi C. In chronic idiopathic urticaria autoantibodies against FcεRII/CD23 induce histamine release via eosinophil activation. *Clin Exp Allergy.* 2005. 35:1599-1607.
- Soundararajan S, Kikuchi Y, Joseph K, and Kaplan AP. Functional assessment of pathogenic IgG subclasses in chronic autoimmune urticaria. *J Allergy Clin Immunol.* 2005. 115:815-21
- Platzer MH, Grattan CEH, Poulsen LK, and Skov PS. Validation of basophil histamine release against the autologous serum skin test and outcome of serum-induced basophil histamine release studies in a large population of chronic urticaria patients. *Allergy.* 2005 60:1152-1156.
- Nawata Y, Koike T, Hosokawa H, Tomioka H, and Yoshida S. Anti-IgE autoantibody in patients with atopic dermatitis. *J Immunology.* 1985. 135(1):478-482.

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