

Humoral Immune Status Testing

Test Name: Humoral Immune Status Testing

Description: These immunology tests are used by physicians to evaluate patients with recurrent and chronic infection⁽¹⁻⁵⁾. They may be ordered individually or as a panel.

Humoral Immune Status Tests Available:

Code	Test	CPT
000001	Serum IgE	82785
000002	Serum IgG	82784
000003	Serum IgA	82784
000004	Serum IgM	82784
000920	Tetanus Toxoid Antibody	86774
000922	Diphtheria Antibody	86648
001121	Haemophilus inf b Antibody	86684
401001	IgG Subclasses	82787
401720	Diphtheria/Tetanus Panel	Several
401721	Diphtheria/Tetanus Panel (Post)	"
401728	Pneumo Ab Panel	86609
401729	Pneumo Ab Panel (Post)	86609
401732	Prevna 7 Panel	86609
401733	Prevna 7 Panel (Post)	86609
401739	Humoral Vaccine Panel	Several
401740	Humoral Vaccine Panel (Post)	"
401743	Humoral Immune Status II	"
401744	Humoral Immune Status I	"

See Service Directory for complete list.

Reference Ranges: Per report (age adjusted values are provided when appropriate).

Specimen Requirement: See Service Directory. Ship at ambient temp. Indicate the age and the vaccine status of the patient.

Comment on Tests and Methods:

Functional Antibody Tests. Patients can be tested for their ability to respond to both protein antigens (i.e. diphtheria and tetanus) and polysaccharide antigens (i.e. pneumococcal serotypes and Haemophilus inf type b). These are important tests in assessing an individual's functional antibody-forming capacity.

Pneumococcal Antibody. All tests include a pre-treatment absorption step with cell wall polysaccharide (CWPS) and Type 22F. The test is performed by FIA using the Luminex multiplex microbead platform.

Haemophilus influenzae b (HIB). The EIA from the Binding Site is used to quantify the antibody to the type b capsular polysaccharide (polyribosylribitol phosphate, PRP).

Diphtheria Antibody. The toxin isolated from *Corynebacterium diphtheriae* is used as a solid phase antigen in a sensitive microtiter EIA. Although the minimum protective level is 0.10 IU/mL, values in excess of 1.0 IU/mL are expected in competent individuals post vaccine.

Tetanus Antibody. The toxoid, prepared from the *Clostridium tetani* toxin, is used in a microtiter EIA. The expected increase after vaccine is six-fold with a minimum of two-fold in healthy individuals.⁽³⁾

IgG Subclasses. Rate nephelometry with the Beckman IMMAGE[®] and Binding Site Reagents.

Other Tests for Recurrent Infection:

Test

Code _____ Name/Description _____

000033 Mannan Binding Lectin. MBL is a key component in the innate immune system and initiates the lectin complement pathway⁽⁶⁾.

401760 Immune Cell Function (T- cell proliferation or activation). IBT offers the only FDA cleared test for lymphocyte proliferation. This test quantifies the CD4 response to mitogen (PHA) stimulation.

402713 Toll-Like Receptor Panel. These signaling pathways are important in both innate and adaptive immunity⁽⁷⁾.

CONTRACT RESEARCH ONLY

References:

- (1) Smith TF *J Resp Dis* 1989;10: 12-29
- (2) Shapiro G. et al. *Pediatrics* 1991; 87: 311-316
- (3) Halsey, J. F. et al. *J Allergy and Clin Immunol (abstr)*, 1992; 89:272
- (4) Siber G, et al *Ped Infect. Dis. Journal* 1989; 8:S84-S91
- (5) Popa V, Kim K, Heiner D. *Annals of Allergy* 1993; 70: 418 - 424.
- (6) Kilpatrick DC. *Transfusion Medicine* 2002; 121: 335-351.
- (7) Akira S et al. *Nature Immunol* 2002; 2: 675-680.

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