CYREX® Laboratories

CLINICAL SPECIFICATIONS

HUMAN HSP-60 + CHLAMYDIA HSP-60

Pathogen Type:

Heat shock protein 60 (HSP60) is a mitochondrial chaperonin that plays a role in the transportation and refolding of proteins from the cytoplasm into the mitochondrial matrix. HSP60's amino acid sequence bears a similarity to its homolog in plants, bacteria, and humans. *Chlamydia* is an obligate intracellular bacterium. *Chlamydia* HSP60 (C.Hsp60) is associated with the outer membrane complexes of *Chlamydia* and appears to be responsible for proinflammatory pathologic manifestations.

Associated With:

Carotid atherosclerosis[1]
Coronary artery disease[2]
Atherosclerosis[3]
Trachomatous[4, 5]
Rheumatoid arthritis[6]
Systemic lupus erythematosus[6]
Mixed connective tissue disease[6]

Known Cross-Reactions: Anti-GroEL (HSP proteins from other organisms), anti-*Porphyromonas gingivalis*;[7] integrin, Cytomegalovirus, connexin;[8] thyroglobulin, thyroid peroxidase;[9] acetylcholine[10]

Clinical Significance:

The detection of antibodies to HSP60 + C.Hsp60 indicates the patient has increased risk of multiple autoimmunities including arthritis, lupus, gastrointestinal disorders, lung disorders, heart autoimmunity, and neuroautoimmunity. Collectively, HSPs are the most abundant proteins in cells and their liberation into the extracellular environment is the best indication of the loss of cellular integrity and a product of apoptosis, or non-conventional expression on the cell membrane. Complexing of antibodies to solid-phase HSP60 leads to significant complement activation and this HSP60 complement activation was seen in sera from healthy controls and patients with coronary heart disease.[5] C.Hsp60 can undergo biological, biochemical and physiologic changes in the course of its existence within the human host.[11] When in a persistent or developmental state, C.Hsp60 the stress-response kicks in and they are produced to elevated levels.[11] Heat shock proteins are elevated by responses to heat, iron deprivation, or exposure to gamma interferon,[12] and systemically trigger inflammatory cascades or exacerbate existing inflammation, which leads to the pathogenesis of autoimmune disorders.

This array tests for IgG immune reactivity associated with Human HSP-60 + *Chlamydia* HSP-60. This is not a measurement of acute infection. Equivocal or out-of-range results indicate IgG antibody reactivity to the tested antigen. We tested 288 blood donor sera against Human HSP-60 + *Chlamydia* HSP-60 antigens at optimal dilution, 10% of these donors were IgG reactive.

References:

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