CYREX® Laboratories

CLINICAL SPECIFICATIONS

ENTAMOEBA HISTOLYTICA

Pathogen Type:

Entamoeba histolytica is an anaerobic parasitic protozoan.

Associated With:

Amoebic colitis[1]
Amoebic liver abscess[1]

Known Cross-Reactions: Papaya, human skeletal muscle actin[2]

Clinical Significance:

The detection of antibodies to *E. histolytica* indicates the patient has increased risk of skeletal and neurological disorders. Innate immune responses clear most *E. histolytica* infections.[3] Upon extraintestinal invasion, *E. histolytica* triggers a robust pro-inflammatory response that destroys tissue and exacerbates disease.[4,5] A non-pathogenic strain of *E. histolytica* may become pathogenic when the expression of genes involved in the synthesis of surface carbohydrates is modified in response to environmental stimuli such as lectins.[3] Reports showed that infection was more common, severe and prolonged in children with serum anti-lectin IgG.[6,7] *E. histolytica* has high affinity for binding to enterocytes through their surface Gal-lectin adhesin, which kills the enterocytes by apoptosis.[8] The production of IgG antibodies against *E. histolytica* indicates that an inadequate mucosal innate immune response allowed for the invasion of the lamina propria, and followed the production of serum antibodies when *E. histolytica* crossed the epithelial barrier.[9]

This array tests for IgG immune reactivity associated with *Entamoeba histolytica*. 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 *Entamoeba histolytica* antigens at optimal dilution, 14% of these donors were IgG reactive.

References:

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4. Moonah, et al. Host immune response to intestinal amebiasis. PLoS Pathog, 2013; 9:e100349.
5. Mortimer, et al. The NLRP3 inflammasome is a pathogen sensor for invasive *Entamoeba histolytica* via activation of $\alpha 5\beta 1$ integrin at the macrophage-amebae intercellular junction. PLoS Pathog, 2015; 11:e1004887.
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