

# **Differentiation of Pathogenic *Entamoeba histolytica* Infections from Nonpathogenic Infections by Detection of Galactose-Inhibitable Adherence Protein Antigen in Sera and Feces**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC266142/>

PMCID: PMC266142 PMID: 8263165

## **Cited In**

J Clin Microbiol. 1993 Nov; V. 31(11): 2845–2850.

### **Differentiation of pathogenic *Entamoeba histolytica* infections from nonpathogenic infections by detection of galactose-inhibitable adherence protein antigen in sera and feces.**

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## **Abstract**

We determined whether epitope-specific monoclonal antibodies to the galactose-inhibitable adherence protein (GIAP) of *Entamoeba histolytica* could be used in an enzyme-linked immunosorbent assay (ELISA) to detect antigen in serum and feces and differentiate between nonpathogenic zymodemes and the potentially invasive pathogenic organisms that require treatment. Overall, 57% of subjects from Cairo, Egypt, with symptomatic intestinal amebiasis and 42% with asymptomatic infection possessed GIAP antigen in their sera, whereas 4% of uninfected controls or subjects with other parasitic infections possessed GIAP antigen in their sera ( $P < 0.001$ ). In subjects from Durban, South Africa, only 6% of uninfected controls or those with nonpathogenic *E. histolytica* infection were positive for GIAP in serum, whereas 3 of 4 with asymptomatic pathogenic intestinal infection and 75% with amebic liver abscess were positive for GIAP in serum. Fifteen stool samples from patients with intestinal amebiasis were available for study; all had a positive ELISA result for fecal GIAP antigen. Epitope-specific monoclonal antibodies identified 8 of 15 subjects with fecal antigen from pathogenic strains. Seven of those eight subjects had adherence protein antigen in their sera, whereas none of seven with apparent nonpathogenic *E. histolytica* infection had adherence protein antigen in their sera. In summary, we were able to detect *E. histolytica* adherence protein antigen directly in serum and fecal samples by ELISA. The presence of amebic antigen in serum demonstrated 94% specificity for pathogenic *E. histolytica* infection, and amebic antigen is present during asymptomatic intestinal infection. In conjunction with antibody detection, this method should be very useful in the diagnosis and management of intestinal amebiasis.

## References

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