

Outer Membrane Proteins (OMP), IgA

ASSISTS IN THE DIAGNOSIS OF INFLAMMATORY BOWEL

Test Highlights

- Semi-quantitative assay
- OMP purified from colonic isolates from patients with confirmed Crohn's disease (CD)

Clinical Background

- Crohn's disease (CD) and ulcerative colitis (UC) are the two major forms of inflammatory bowel disease (IBD). Both CD and UC are chronic, affecting children and adults (men and women almost equally), and are most common in northern Europe and North America.
- Tests for diagnosing IBD and differentiating CD from UC include anti-*Saccharomyces cerevisiae* antibody (ASCA; IgA and/or IgG) and anti-neutrophil cytoplasmic antibody (ANCA; IgG). ASCA is most strongly associated with CD, and atypical perinuclear staining of neutrophils (atypical pANCA) is most strongly associated with UC. Although clinically useful, these markers have only modest sensitivities for IBD.¹
- Some ASCA seronegative CD patients may have antibody to other colonic microbial antigens.² The presence and level of immune responses to microbial antigens have been associated with more aggressive disease phenotypes in children with CD.³ IgA antibodies against the *E. coli* outer membrane porin C (OmpC) are not specific for CD and can also be found in UC and healthy individuals.⁴ Our study suggests that OmpC IgA may be more prevalent in patients with UC.⁵
- In a comparison study performed at ARUP Laboratories using sera from patients suspected of having IBD, the OMP IgA assay showed an agreement of 93 percent when compared to results obtained from the OmpC IgA assay performed at another laboratory. The OMP IgA assay performed at ARUP Laboratories may be more specific for IBD since antibodies target OMP purified from colonic isolates (not *E. coli*) from patients with confirmed CD.

Indications for Ordering

This assay may be used to aid in the diagnosis of patients suspected of having IBD and may help in differentiating CD from UC, although there is clearly overlap.

Interpretation

Detection of IgA antibody against OMP may support a diagnosis of CD or even UC.

Limitations

- Test results alone are not diagnostic. Results should be used in conjunction with other clinical findings and biopsy to confirm a diagnosis of CD or UC.
- A negative OMP IgA result does not rule out the presence of CD or UC.
- A positive OMP IgA result may indicate the presence of antibody to OMP and is not confirmatory for CD or UC.

Methodology

Enzyme immunoassay (EIA) detecting IgA antibody against a proprietary blend of purified outer membrane proteins from two species of colonic bacteria isolated from patients with confirmed Crohn's disease.

Related Tests

Inflammatory Bowel Disease Differentiation Profile (0050567) includes ASCA IgG and IgA, as well as p-ANCA

References

1. Reese GE, et al. Diagnostic precision of *anti-Saccharomyces cerevisiae* antibodies and perinuclear antineutrophil cytoplasmic antibodies in inflammatory bowel disease. *Am J Gastroenterol* 2006;101:2410-2422.
2. Landers CJ, Cohavy O, Misra R, Yang H, Lin YC, Braun J, Targan SR. Selected loss of tolerance evidence by Crohn's disease-associated immune response to auto- and microbial antigens. *Gastroenterology* 2002;123:689-699.
3. Dubinsky MC, et al. Serum immune responses predict disease progression among children with Crohn's disease: immune responses predict disease progression. *Am J Gastroenterol* 2006;101:360-367.
4. Mei L, Targan SR, Landers CJ, et al. Familial expression of *anti-Escherichia coli* outer membrane porin C in relatives of patients with Crohn's disease. *Gastroenterology* 2006;130:1078-1085.
5. Jaskowski TD, Litwin CM, Hill HR. Analysis of serum antibodies in patients suspected of having inflammatory bowel disease. *Clin Vaccine Immunol* 2006;13:655-60.

Test Information

0051384 **Outer Membrane Protein (OMP), IgA**

For specific collection, transport, and testing information, refer to the ARUP Web site at www.aruplab.com.