CYREX® Laboratories

CLINICAL SPECIFICATIONS

PORPHYROMONAS GINGIVALIS

Pathogen Type:

A gram-negative anaerobic bacterium, *Porphyromonas gingivalis* is a known periodontal pathogen.

Associated With:

Periodontitis[1,2]
Rheumatoid Arthritis[3-5]
Cardiovascular disorders[6-8]
Respiratory disease[1]
Chronic Obstructive Pulmonary disease[1]

Known Cross-Reactions: Human enolase;[9] fibrinogen, collagen, filagrin, vimentin[10]

Clinical Significance:

The detection of antibodies to *P. gingivalis* indicates the patient has increased risk of rheumatoid arthritis and cardiovascular autoimmunity. Periodontitis is a dysbiotic inflammatory disease induced by an oral pathogen and is associated with an adverse impact on systemic health. The dysbiotic microbial communities in the periodontium resist elimination by the host immune response, which creates permissive conditions for bacterial growth in a nutritionally favorable inflammatory environment.[1] *P. gingivalis* plays a role in upper gastrointestinal tract, respiratory tract, and in colon disorders and is commonly associated with periodontitis.[1,2] *P. gingivalis* may also contribute to extra-intestinal tissue disorders such as rheumatoid arthritis (RA), cardiovascular disease, respiratory disease, and chronic obstructive pulmonary disease.[2-10] Antibodies to *P. gingivalis* are detected in patients with RA and, in fact, appear in the blood before the symptoms of rheumatoid arthritis.[3,4] The authors state: "The existence of such an association in the absence of clinical apparent inflammatory arthritis would strongly support the hypothesis that infection precedes disease and is therefore not simply a consequence of established RA or its treatments."[4] In addition, invasive bacterial infection of *P. gingivalis* in heart endothelial cells can activate innate immune signaling pathways, which may lead to atherosclerosis.[1,8]

This array tests for IgG immune reactivity associated with *Porphyromonas gingivalis*. 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 *P. gingivalis* antigens at optimal dilution, 11% of these donors were IgG reactive.

References:

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