



Marshfield Laboratories provides ANA testing with more specific test results than the traditional ANA by IFA.

Marshfield Laboratories has added the BioPlex 2200, bringing new technology to our Immunodiagnosics department. This method utilizes color-coded fluorescent microsphere beads, coated with antigens or antibodies, particular to a specific assay. When test serum is incubated with the bead mixture, antihuman IgG antibody joined to a second fluorophore, detects antibodies bound to the beads. Beads then pass through a flow cytometer that analyzes and quantifies the signal.

ANA testing on the BioPlex provides more specific results than those seen in ANA by IFA. A negative ANA result by BioPlex rules out reactivity to the most commonly occurring specific autoantibodies and eliminates most of the false positive results that occur by IFA, or those occasionally seen in EIA.

The ANA screen on the BioPlex detects autoantibodies to double stranded DNA, chromatin, ribosomal P, SSA, SSB, Sm, nRNP, SmRNP, Scl-70, Jo-1 and centromere B. A negative result means the patient's serum shows no reactivity for the most common clinically-relevant antibodies associated with connective tissue diseases.

In 1975, Motman, Kurata, and Tan first characterized the specific autoantibodies occurring in connective tissue disorders. Patients with SLE, Sjogren's syndrome, polymyositis, mixed connective tissue disease, and rheumatoid arthritis were tested against specific antigens. These included: double stranded DNA, chromatin, Smith and ribonucleoprotein. In the following decade, other association began to emerge. These include: SSA and SSB with Sjogren's syndrome, Jo-1 with polymyositis and Scl-70 and centromere with systemic sclerosis.

Historically the IFA test for ANA using the HEp-2 substrate had been the primary screening test for antinuclear antibodies. In most cases, a negative ANA will rule out the diagnosis of systemic lupus erythematosus (SLE). When there was a positive result, laboratories reported a titer and a pattern. The various patterns have associations with specific autoantibodies.

The biggest limitation of ANA-IFA is that the pattern of naturally-occurring autoantibodies may mimic disease-associated autoantibodies. Our data demonstrated that the majority of low titer ANA-IFA lacked reactivity for the most common specific antinuclear antibodies.

Another problem with ANA-IFA is the lack of standardization leading to variation in test methods between laboratories. These include subjective interpretation, a high false positive rate, and a lack of uniformity with respect to substrate, optic, and screening dilutions.

EIA has also been a primary method for subclassifying disease-associated autoantibodies. Similar to ANA by IFA, there are limitations. Differences in sensitivity and specificity are seen between laboratories due to variations in the composition of the antigen and the cutoff for positive reactivity. The potential for false positive reactions due to heterophile antibodies that is common to all EIA tests is also greatly reduced.

Please contact us at 800-222-5835 for more information.