

Technical Tip #18

ZEUS ELISA™/AtheNA Multi-Lyte® Test Systems

Subject: Sm/RNP Antigen

Anti-Smith and Anti-Ribonucleoprotein Antibodies: Sm and RNP molecules are biochemically associated with each other in their natural state. It is not possible to separate the naturally occurring RNP molecule from the Sm molecule without losing antigenic activity of RNP. It is possible, however, to separate Sm from the Sm/RNP complex and preserve Sm immunoreactivity. Because of this biochemical association between Sm and RNP, the following reactions may be anticipated in our ZEUS ELISA™ Test Systems:

- Samples that are anti-RNP positive will only be reactive in the Sm/RNP ELISA. Such samples will be negative in the Sm ELISA Test System.
- Samples, which have a moderate or high anti-Sm titer, will be reactive in the Sm/RNP and Sm ELISA Test Systems. Reactivity to RNP cannot be ruled out.
- Low anti-Sm titer sample may be reactive only in the Sm ELISA Test System. This may occur because the concentration of Sm antigen in the combined Sm/RNP test well cannot be optimized for Sm detection. It (the Sm/RNP antigen) is optimized primarily for RNP detection.
- Samples that are both anti-RNP and anti-Sm positive will be reactive in both the Sm/RNP and Sm ELISA tests.

To determine if the patient sample has anti-Sm or anti-RNP requires that the sample be tested on BOTH the Sm and the Sm/RNP ELISA Test Systems. Even so, it may be sometimes difficult to determine if a patient has only one or both autoantibodies.

ZEUS ELISA Sm/RNP Test System (Product Code 2Z2841G) uses natural, affinity purified Sm/RNP antigen from rabbit thymus. ZEUS ELISA Sm Test System (Product Code 2Z2831G) uses natural Sm antigen and detects anti-Sm reactivity specifically.

AtheNA Multi-Lyte® ANA II Plus Test System (Product Code A21101) utilizes a combination of recombinant RNP A, RNP C and RNP 68 antigens. Therefore, if a patient is reactive on the AtheNA Multi-Lyte RNP assay (bead), it can only be due to anti-RNP antibody. By design, the AtheNA Multi-Lyte Test System, detects and reports Sm and RNP separately rather than in conjunction such as with the ZEUS ELISA Sm/RNP Test System.

References:

<http://www.clevelandclinicmeded.com/medicalpubs/diseasemanagement/rheumatology/laboratory-evaluation-rheumatic-diseases/>