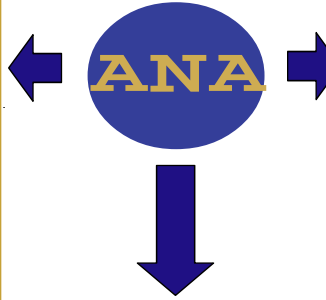


Suspected Systemic Rheumatic Disease

POSSIBLE PITFALLS IN THE INTERPRETATION OF ROUTINE ANA TEST RESULTS

NEGATIVE

- The (IFA) test may be negative in some cases of SLE and other rheumatic diseases that have antibodies restricted to cytoplasmic constituents.
- The standard (IFA) ANA test does not detect all known ANA: e.g., some patients with Sjogren's Syndrome, polymyositis or scleroderma will give negative results, despite high titers of antibodies.
- If the (IFA) ANA test is negative and the clinical picture suggests a rheumatic disease, cell culture substrates must be used that are known to contain unique antigens at higher concentrations. Alternatively, a more specific test method, such as ELISA, may be used.



POSITIVE

- The high sensitivity and low specificity of the standard IFA ANA test can lead to positive results in the absence of disease, e.g. in up to 20% of healthy relatives of patients with rheumatic disease, in as many as 75% of elderly individuals without apparent disease and in 2% of normal, non-elderly individuals.
- ANA's are also present in other diseases such as chronic pulmonary fibrosis, chronic infections and chronic hepatitis.
- In patients with rheumatic diseases whose sera are positive for ANA, there are certain nuclear staining patterns for the associated autoantibodies that may be observed.

Antibodies That Routine ANA Testing May Not Detect

ANTIBODY	PATTERN	DISEASE
Ma	?	SLE
Mu	Nucleolar, cytoplasmic	SLE
Jo-1	Cytoplasmic	Polymyositis
Ku	?	Polymyositis
PCNA	Variable-sized speckles	SLE
PM-1	Variable, Speckled	Polymyositis/Scleroderma overlap
Mi-1	?	Dermatomyositis
RANA	Negative	Present in RA and SS with RA

ANA Positive Rheumatic Disease

IMMUNOFLUORESCENT PATTERNS OBSERVED IN ROUTINE ANA TESTING

HOMOGENEOUS	SPECKLED	NUCLEOLAR	CENTROMERE
<p>DNP LE antibody in SLE. Its presence in the absence of anti-dsDNA indicates drug-induced SLE.</p> <p>dsDNA High levels in SLE; lower levels in other rheumatic diseases</p> <p>ssDNA Found in SLE; also found in rheumatic and non-rheumatic diseases</p> <p>Histones Present in drug-induced SLE; also found in SLE and RA</p>	<p>SSA High prevalence in Sjogren's Syndrome, subacute cutaneous lupus and neonatal lupus syndrome, and SLE; lower prevalence in other rheumatic diseases</p> <p>SSB High prevalence in Sjogren's Syndrome; lower prevalence in other rheumatic diseases</p> <p>Sm/RNP High levels RNP in MCTD and SLE; lower levels in other rheumatic diseases</p> <p>Sm Diagnostic for SLE</p>	<p>Scl-70 Highly diagnostic for scleroderma</p> <p>NUCLEOLAR High prevalence in scleroderma; and certain overlap connective tissue diseases.</p>	<p>CENTROMERE CREST variant in scleroderma; less frequently in Raynaud's Phenomenon and other rheumatic diseases.</p>

AUTOANTIBODIES ASSOCIATED WITH THESE PATTERNS AND THEIR SIGNIFICANCE IN RHEUMATIC DISEASES

APPROXIMATE FREQUENCIES (%) OF THESE AUTOANTIBODIES IN RHEUMATIC DISEASES

DISEASE	dsDNA	DNP	Sm	RNP	SSA	SSB	Scl-70	Centromere
SLE	60	30	40	40	40	15	0	2
Drug SLE	0	95-100	0	-	0	-	0	-
MCTD	7	-	0	100	0	0	0	7
Sjogren's Syndrome	6	-	0	3	70	60	0	-
Rheumatoid Arthritis	3	15	0	5	0	0	0	0
Scleroderma	4	0	0	20	0	0	20	10
CREST	-	0	-	-	-	-	-	90