Antinuclear antibody (ANA)

General information

'Antinuclear antibody' refers to an old test for IgG against nuclear components, detected by immunofluorescence (see below). This test has been superseded by faster, more reproducible parallel tests for each of the nuclear components, namely ENA (extractable nuclear antigens SS-A (SS-A52, SS-A60) (Ro), SS-B (La), Sm, Sm/RNP, RNP (RNPA, RNP 68), Ribo P, Chromatin, Jo-1 and Scl-70), DNA and centromere. Antibodies to extractable nuclear antigens are of use in the classification of clinical subsets of connective tissue diseases and in providing prognostic information.

When you request ANA we will perform the above tests; if any are positive this will be indicated as a positive ANA. Please see also DNA antibodies page.

Specimen transport: At room temperature

Repeat frequency: Not more than once a year, unless clinical picture has changed

Special precautions: None

Laboratory information

Normal reference range: ANA – Neg, ENAs <0-0.9AI, Scl-70 0-1.6

Volume and sample type: 4ml serum

Method: Multiplex flow immunoassay

Turnaround time (calendar days from sample receipt to authorised result): Median – 2

Participation in EQA Scheme: UK NEQAS for Nuclear and Related Antigens and UK NEQAS for Digital ANA (Image based)

Clinical information

Indications for the test: Suspected SLE, connective tissue disease, hepatitis or drug induced lupus. Some of the specific associations of positive results are described below:

- Anti-centromere – limited cutaneous systemic sclerosis, primary biliary cirrhosis
- Anti-Ro (SS-A) – SLE, Sjögren's syndrome, neonatal lupus, congenital heart block
- Anti-La (SS-B) – SLE, Sjögren's syndrome, neonatal lupus, congenital heart block
- Anti-Sm – SLE
- Anti-RNP 68 – SLE, Mixed connective tissue disease

- Anti-Scl 70 – Progressive systemic sclerosis (generalised scleroderma)
- Anti-Jo-1 – Polymyositis, Dermatomyositis
- Anti-Ribo P – SLE with psychiatric symptoms
- Anti-Chromatin – SLE with nephritis

Factors affecting the test: False positives may be seen during infection and are more common with increasing patient age. For these reasons positive results have a low predictive value in the absence of clinical signs of the diseases indicated above. ANA should not, therefore, be used as a 'screen' in patients with vague symptoms and signs.

Immunofluorescent antinuclear antibody (IFANA)

General information

This is the immunofluorescence assay for detecting IgG ANA antibodies. It is not performed routinely for ANA antibodies by the laboratory (see above) but is available upon specific request.

Specimen transport: At room temperature

Repeat frequency: Not more than once a year, unless clinical picture has changed

Special precautions: None

Laboratory information

Normal reference range: Negative

Volume and sample type: 4ml serum

Method: Indirect immunofluorescence

Turnaround time (calendar days from sample receipt to authorised result): Median – 5

Participation in EQA Scheme: UK NEQAS for Nuclear and Related Antigens

Clinical information

Indications for the test: Suspected SLE, connective tissue disease, hepatitis or drug induced lupus, where the routine ANA is negative. This test can also be useful particularly in the context of investigation of autoimmune hepatitis.
Some commonly seen staining patterns are highlighted below:

- Centromere pattern – limited cutaneous systemic sclerosis, primary biliary cirrhosis
- Homogeneous pattern – SLE, autoimmune hepatitis, Juvenile Idiopathic Arthritis, mixed connective tissue disease
- Speckled pattern – SLE, Sjögren's syndrome, autoimmune myopathy, systemic sclerosis, mixed connective tissue disease; note speckled ANA can be associated with antibodies to SS-A and SS-B which carry a risk of neonatal lupus and congenital heart block
- Nucleolar pattern – systemic sclerosis, systemic sclerosis-autoimmune myopathy overlap and can be seen in other connective tissue diseases
- Multiple nuclear dots patterns – primary biliary cirrhosis, autoimmune myopathy and other autoimmune/inflammatory conditions

Factors affecting the test: False positives may be seen during infection and are more common with increasing patient age. For these reasons positive results have a low predictive value in the absence of clinical signs of the diseases indicated above. ANA should not, therefore, be used as a 'screen' in patients with vague symptoms and signs.

(Last updated February 2024)