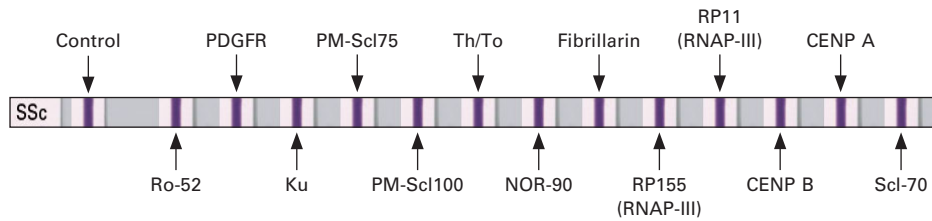




EUROLINE Systemic Sclerosis (Nucleoli) Profile (IgG)



Indication: Test system for the in vitro determination of antibodies against systemic sclerosis-associated antigens in human serum or plasma for the diagnosis of the following diseases: progressive systemic sclerosis (limited and diffuse form), overlapping syndromes.

Clinical significance: Systemic sclerosis (SSc) belongs to the collagenoses, a group of autoimmune connective tissue diseases. It affects the skin and internal organs. Around 2 to 50 out of 100,000 people suffer from SSc worldwide (USA: 25 out of 100,000). The incidence amounts to 12 new cases per 100,000 people per year. The disease occurs mainly in middle adulthood. Women are affected three to four times more often than men. Black people have a greater risk of acquiring the disease. A higher frequency among members of one family is rare. Early symptoms of SSc are shortening of the lingual frenum and Raynaud's syndrome (stage 1: ischemia of the hands and feet with numbness and pain, stage 2: local cyanosis caused by hypoxia, stage 3: reactive hyperaemia with redness, pricking and throbbing). In the following phase oedema of the hands and feet develops. The skin becomes stiff and in later stages atrophic, waxy and thin. Finally, deformation of the hands occurs. The fingers become fixed in a bent position (claw hand) and are highly tapered at the ends (Madonna fingers). Furthermore, the characteristic masklike face with rigid mimic develops, leading to microstomia (reduced capability of opening the mouth) and problems in closing the eyelids. Finally, callosity of the inner organs, particularly of the digestive tract, lungs, heart and kidneys occurs.

SSc is divided into limited and diffuse forms, depending on the cutaneous distribution. In the limited form, skin involvement is limited to the distal extremities. In the diffuse form (also proximal systemic sclerosis) the symptoms are diffusely distributed over the trunk, the proximal and distal extremities and the face. The so-called CREST syndrome with calcinosis, Raynaud's syndrome, oesophageal dysfunction, sclerodactyly (thin, pale, thickened and hairless skin on the fingers) and teleangiectasias (persisting pathological dilation of superficial skin vessels) is a special subform of SSc. The connective tissue of the lungs, kidneys, oesophagus and heart is particularly at risk. At present lung involvement is the most frequent cause of death from SSc. Manifest SSc is the collagenosis with the highest vital risk for the patient. Since SSc presents under various forms and on different body parts and may even come to a standstill, clinical diagnosis is difficult. Genetic factors and autoimmune processes, among others stimulating autoantibodies against the receptor for platelet derived growth factor (PDGFR), have been found to be definitely connected to the disease. Serological diagnosis is of particular importance due to the complexity of the disease.

Clinical data: 129 sera from patients with clinically characterised SSc (limited and diffuse forms), 142 sera from control patients (50 polymyositis/dermatomyositis (PM/DM), 50 systemic lupus erythematosus (SLE), 42 rheumatoid arthritis (RA)) and 60 sera from healthy blood donors were investigated using the EUROLINE Systemic Sclerosis (Nucleoli) Profile (IgG). The total hit rate in the systemic sclerosis panel was 85.3%.

Antibodies against	Sensitivity	Specificity
Scl-70	65%	99%
CENP A	11%	99%
CENP B	13%	99%
RP11	5%	100%
RP155	7%	100%
Fibrillarin	2%	100%
NOR-90	4%	99%
Th/To	6%	98%
PM-Scl100	7%	99%
PM-Scl75	12%	98%
Ku	6%	99%
PDGFR	1%	100%

Application of the EUROLINE Systemic Sclerosis (Nucleoli) Profile (IgG): The newly developed EUROLINE Systemic Sclerosis (Nucleoli) Profile (IgG) is the first membrane-based test system to provide such a wide range of 12 systemic sclerosis-associated antigens. The test thus allows differentiation of antibodies with nucleolar patterns obtained in indirect immunofluorescence. The assay surpasses all existing test methods with respect to sensitivity and specificity and provides an effective and accurate determination of autoantibodies in systemic sclerosis and overlapping syndrome. It supplements the wide range of EUROLINE products, for which user-friendly full automation solutions and evaluation software are available.

EUROIMMUN Immunoblots

Autoantibody determination:

EUROASSAY:

flexible profiles of up to 7 antigens from:
ENA and related antigens: nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, Jo-1, dsDNA, histones, nucleosomes, CENP B, PM-Scl, ribosomal P-proteins, AMA M2

liver antigens: LKM-1, LC-1, SLA/LP, AMA M2, M4, M9

ANCA antigens: MPO, PR3

thyroid antigens: TG, TPO

EUROLINE:

ANA Profile 1: nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, Jo-1, CENP B, dsDNA, nucleosomes, histones, ribosomal P-proteins

ANA Profile 3: nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, PM-Scl, Jo-1, CENP B, PCNA, dsDNA, nucleosomes, histones, ribosomal P-proteins, AMA M2

ANA Profile 5: nRNP/Sm, Sm, RN70, RNPA, RNPc, SS-A, Ro-52, SS-B, Scl-70, PM-Scl, Jo-1, CENP B, PCNA, dsDNA, nucleosomes, histones, ribosomal P-proteins, AMA M2

Anti-ENA Profile 1: nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, Jo-1

Systemic Sclerosis Profile: Scl-70, CENP A, CENP B, RP11, RP155, Fibrillarin, NOR90, Th/To, PM-Scl100, PM-Scl75, Ku, PDGFR, Ro-52

Myositis Profile 3: Mi-2, Ku, PM-Scl100, PM-Scl75, SRP, Jo-1, PL-7, PL-12, OJ, EJ, Ro-52

Liver Profiles: AMA M2, 3E (BPO), Sp100, PML, gp210, LKM-1, LC-1, SLA/LP, Ro-52

Neuronal Antigens Profile 2: amphiphysin, CV2.1** PNMA2 (Ma-2/ta), Ri, Yo, Hu

Anti-Ganglioside Profile 1: GM1, GD1b, GQ1b

Anti-Ganglioside Profile 2: GM1, GM2, GM3, GD1a, GD1b, GT1b, GQ1b

ANCA Profiles: MPO, PR3, GBM

EUROLINE-WB:

neuronal antigens (+ recomb. Hu, Yo, Ri)
HEp-2 cell antigens (+ SS-A and Ro-52, CENP B)

Infectious serology:

EUROLINE:

Bordetella pertussis (IgA, IgG)
Borrelia-RN-AT (p18, p19, p20, p21, p58, OspC, p39, p83, LBb, LBA, VisE Bg, VisE Bb, VisE Ba)
EBV Profile (IgG, IgM, VCA gp125, VCA p19 and EBNA-1, p22, EA-D)
Hanta virus (IgG, IgM)
TORCH Profile* (T. gond., rubella, CMV, HSV-1, -2)

Westem blot:

Borrelia burgdorferi (IgG, IgM)
Borrelia afzelii (IgG, IgM)
Borrelia garinii (IgG, IgM)
Epstein-Barr virus (IgG, IgM)
Rubella virus (IgG)
Treponema pallidum (IgG, IgM)
Yersinia enterocol. virulence fact. (IgA, IgG)

EUROLINE-WB:

Anti-Borrelia (B. afzelii + rec. VisE)
Anti-HSV (HSV-1, HSV-2 gG2)
Helicobacter pylori (IgA, IgG)
Treponema pallidum + cardiolipin

Allergology:

EUROASSAY:

Domestic Animal Profile (IgE)
Food Profile (IgE)
Inhalation Profile (IgE)
Insect Venom Profile (IgE)
Latex Profile (IgE)
Latex plus Profile (with ficus and fruit; IgE)

EUROLINE:

Atopy Profile (IgE)
Food Profile (IgE)
Inhalation Profile (IgE)
Paediatric Inhalation Profile
Pollen-Food Cross Reaction Profile (IgE)

Software/Automation:

EUROLINEscan
camera system EUROBlotCamera
scanner system EUROBlotScanner
incubation processor EUROBlotMaster

EUROIMMUN

Radioimmunoassays

Autoantibody determination:

thyroid peroxidase (TPO; IgG)
thyroglobulin (TG; IgG)
TSH receptor (IgG)
acetylcholine receptor (AChR; IgG)
glutamic acid decarboxylase (GAD; IgG)
insulin (IAA; IgG)
P/Q calcium channel* (VGCC; IgG)
tyrosine phosphatase (IA2; IgG)
dsDNA (IgA/IgG/IgM)

Antigen determination:

thyroglobulin (TG)

Hormone determination:

free triiodothyronine (FT3)
free thyroxine (FT4)
thyrotropin (TSH)
calcitonin

* Currently not available as IVD in the EU.
** CV2 partial protein, which only contains the N-terminally localised epitopes of the antigen.

Made in Germany



EUROIMMUN Microplate ELISA

Autoantibody determination:

AMA M2-3E (IgG)
ANCA Profile (IgG)
ANA Screen (IgG)
ANA Screen 9 or 11 (IgG)
ANA VarioProfile (IgG)
BP180-NC16A-4X (IgG)
BP230-CF (IgG)
C1q (IgG)
cardiolipin (IgA, IgG, IgM, IgAGM)
circulating immune complexes (CIC)
cyclic citrullinated peptide (CCP; IgG)
centromere protein B (IgG)
desmoglein 1 (IgG)
desmoglein 3 (IgG)
double-stranded DNA (dsDNA, nDNA; IgG)
dsDNA-NcX (IgG)
ENA Pool (IgG)
ENA PoolPlus (IgG)
ENA ProfilePlus 1 or 2 (IgG)
ENA SLE Profile 1 or 2 (IgG)
GAD
GAD/IA-2 Pool
glomerular basement membrane (GBM; IgG)
β2-glycoprotein 1 (IgA, IgG, IgM, IgAGM)
histones (IgG)
IA-2
intrinsic factor (IgG)
Jo-1 (IgG)
liver cytosolic antigen type 1 (LC-1; IgG)
liver-kidney microsomes (LKM-1; IgG)
myeloperoxidase (MPO; IgG)
nRNP/Sm (IgG)
nucleosomes (IgG)
ovary (IgAGM, Ig typing)
p53 (IgG)
parietal cells (PCA; IgG)
PM-Scl (PM-1; IgG)
phosphatidylserine (IgA, IgG, IgM, IgAGM)
proteinase 3 (IgG)
PR3 hn-hr (IgG)
PR3 capture (IgG)
rheumatoid factor (IgA, IgG, IgM)
ribosomal P-proteins (IgG)
Sa (IgG)
Scl-70 (IgG)
single-stranded DNA (ssDNA; IgG)
SLA/LP (IgG)
Sm (IgG)
spermatzoa (IgAGM, Ig typing)
SS-A (Ro; IgG)
SS-B (La; IgG)
thyroglobulin (TG; IgG)
thyroid peroxidase (TPO; IgG)
tissue transglutaminase (endomy.; IgA, IgG)
TSH receptor (TbII; IgG)
TRAK Fast (IgG)
zona pellucida (IgAGM, Ig typing)

Latex agglutination tests:

spermatzoa
ovary
zona pellucida

Further autoimmune diagnostics:

gliadin (GAF-3X; IgA, IgG)
Saccharomyces cerevisiae (IgA, IgG)

Infectious serology:

Adenovirus (IgA, IgG, IgM)
Borrelia (IgG, IgM)
Borrelia VisE (IgG)
Chlamydia pneumoniae (IgA, IgG, IgM)
Chlamydia trachomatis (IgA, IgG, IgM)
Cytomegalovirus (IgG, IgM)
Diphtheria toxoid (IgG)
Epstein-Barr virus capsid ag (IgA, IgG, IgM)
Epstein-Barr virus early ag (IgA, IgG, IgM)
Epstein-Barr virus nuclear ag, EBNA-1 (IgG)
Helicobacter pylori (IgA, IgG)
Helicobacter pylori CagA (IgA, IgG)
HSV-1 (glycoprotein C1; IgA, IgG, IgM)
HSV-2 (glycoprotein G2; IgA, IgG, IgM)
HSV-1/2 Pool (IgA, IgG, IgM)
Influenza virus type A (IgA, IgG, IgM)
Influenza virus type B (IgA, IgG, IgM)
Legionella pneumophila (IgA, IgG, IgM)
Measles virus (IgG, IgM)
Mumps virus (IgG, IgM)
Mycoplasma pneumoniae (IgA, IgG, IgM)
Parainfluenza virus Pool (IgA, IgG, IgM)
Parvovirus B19 (IgG, IgM)
RSV (IgA, IgG, IgM)
Rubella virus (IgG, IgM)
SARS-CoV (IgG)
TBE virus (IgG, IgM)
Tetanus toxoid (IgG)
Toxoplasma gondii (IgG, IgM)
Treponema pallidum (IgG, IgM)
Varicella zoster virus (IgG, IgM)
Yersinia enterocol. virulence fact. (IgA, IgG)

Allergology:

total IgE
Allercoast™ 6-ELISA (600 different allergens and allergen mixtures)

Serum proteins and tumour markers:
anti-p53

* Currently not available as IVD in the EU.

Made in Germany

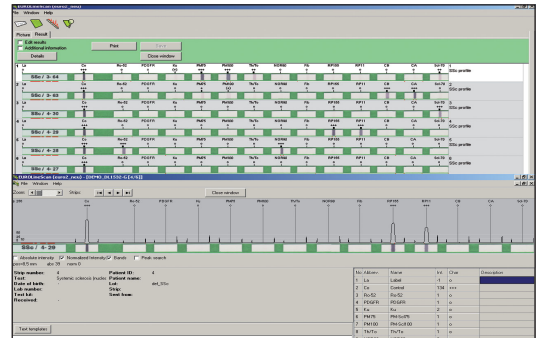
Version: 05/10
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Test Characteristics

EUROLINE Systemic Sclerosis (Nucleoli) Profile (IgG)

Test principle: The EUROLINE is a qualitative in vitro immunoassay, in which membrane strips printed with lines of purified, biochemically characterised antigens are used as solid phase. Each antigen is coated onto a separate membrane fragment, enabling the production process and thereby the efficiency of antibody detection to be optimized for each protein. Since antigen bands are located at defined positions, results can be evaluated visually without the need for additional equipment. Correct performance of all test steps is confirmed by staining of the control band.

Computer-based evaluation: The EUROLine-Scan programme from EUROIMMUN provides automated evaluation of EUROLINE analyses and detailed documentation of results. The incubated membrane strips are either scanned onto a protocol sheet using a flatbed scanner (EUROBlotScanner) or photographed directly in the incubation tray using a camera system (EUROBlotCamera). EUROLineScan recognises the position of the strips, even if they have been laid in exactly. It then identifies the bands and measures their intensity. The EUROLine-Scan programme facilitates data management and eliminates the need to archive potentially infectious material. A separate results sheet can be produced for each patient. Online connection to other programmes is possible, e.g. laboratory management systems (LIMS).



Correlation with indirect immunofluorescence: 129 sera from patients with clinically characterised SSc (limited and diffuse forms) and 142 sera from control patients (50 PM/DM, 50 SLE, 42 RA) had been tested using the indirect immunofluorescence test (IIFT) based on HEp-2 cells (EUROIMMUN AG). 92.8% (90/97) of the SSc sera with a nucleolar pattern reacted positively in the EUROLINE Systemic Sclerosis (Nucleoli) Profile (IgG). But only 17.7% (3/17) of the nucleolar pattern sera from the control panels showed a positive reaction. This shows that identification and differentiation of a high number of SSc-specific and -associated antibodies is possible.

Antibodies against	Indirect immunofluorescence pattern SSc patients (n = 129)					Control panels (n = 142)
	Nucleolar (n = 97)	Centromere (n = 12)	Nucleo./Centro. (n = 2)	Other (n = 17)	Negative (n = 1)	Nucleolar (n = 17)
Scl-70	80	-	1	2	-	-
CENP A	1	12	1	-	-	-
CENP B	1	12	1	-	-	-
RP11	6	-	-	-	-	-
RP155	7	1	-	-	-	-
Fibrillarlin	1	-	-	-	-	-
NOR-90	4	-	-	-	-	-
Th/To	8	-	-	-	-	1
PM-Scl100	5	-	-	3	-	2
PM-Scl75	12	1	-	4	-	1
Ku	4	-	-	-	-	-
PDGFR	0	-	1	-	-	-
at least one SSc-associated antigen	90	12	1	7	0	3*

*Sera were from the dermato-/polymyositis panel

Technical data:

Antigens

Native: Scl-70: Scl-70 antigen purified by affinity chromatography; **Recombinant: CENP A:** centromere protein A; **CENP B:** centromere protein B; **RP11:** subunit POLR3K of human RNA polymerase III; **RP155:** subunit POLR3A of human RNA polymerase III; **fibrillarlin;** **NOR-90;** **Th/To;** **PM-Scl100:** PM-Scl protein (100 kDa); **PM-Scl75:** PM-Scl protein (75 kDa); **Ku:** Ku protein; **PDGFR:** PDGF receptor; **Ro-52:** Ro-52 protein (52 kDa).

Sample dilution

Serum or plasma; 1:101 in sample buffer.

Test procedure

30 min / 30 min / 10 min. Room temperature.

Test kit format

16 membrane strips.
Kit includes all necessary reagents.

Automation

Compatible with all commercial blot processing systems, e.g. the EUROBlotMaster from EUROIMMUN.

Order number

DL 1532-1601 G