EliA™

Symphony ANA Screening

EliA™

Excellence in Autoimmunity

EliA™ Symphony – Surer Screening for Connective Tissue Diseases

High clinical relevance

- high sensitivity supports diagnosis
- high specificity avoids inappropriate follow-up

High technical performance

- low variances and high reproducibility for consistent results
- high lot-to-lot consistency due to validated production procedures
- semi-quantitative results expressed as a ratio relative to a defined calibrator

State-of-the-art antigens

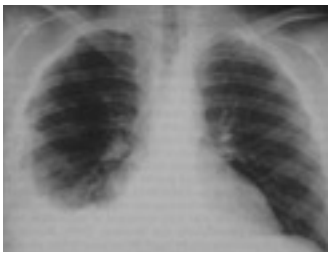
- human recombinant U1RNP (mixture of recombinant RNP70, A, C)
- highly purified SmD protein
- human recombinant Ro (52, 60kDa)
- human recombinant La
- human recombinant Scl-70
- human recombinant CENP-B
- human recombinant Jo-1

Automation

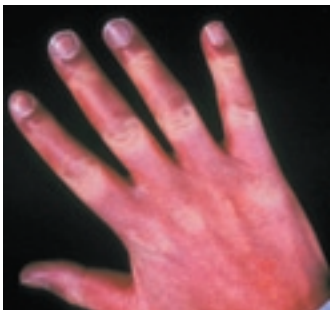
- screen and individual specificity testing available in one run
- choice of ImmunoCAP™ instruments available for low to high throughput
- stored standard curve to be used with all EliA™ IgG analytes
- urgent samples can be run cost-efficiently
- reflex testing from screen to single-specificity assays

Easy handling

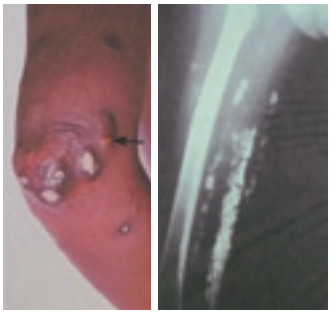
- serum as well as plasma can be used
- automated sample dilution



Picture 1: *SLE, pleural effusions in lung x-ray*



Picture 2: *Raynaud's phenomenon*



Picture 3: *Dermatomyositis, calcification*

Connective Tissue Diseases

Connective Tissue diseases (CTDs) represent classical models of systemic autoimmune diseases. They are a heterogeneous group of diseases characterised by abnormal structure or function of one or more of the elements of connective tissue, i.e. collagen, elastin or the mucopolysaccharides. Differential diagnosis of CTDs is mainly based on clinical findings but is complicated by the similarity of their symptoms. Therefore, autoantibodies are useful markers to support the diagnosis or exclusion of CTDs. The most prominent CTDs are systemic lupus erythematosus (SLE; potentially affecting all organs), Sjögren's syndrome (SS; characterised by diminished lacrimal and salivary gland secretions), scleroderma (systemic sclerosis, SSc; a chronic, progressive dermatosis), limited systemic sclerosis (a scleroderma formerly known as CREST syndrome, with a more benign disease course), poly-/dermatomyositis (PM/DM; an acute or chronic inflammatory disease of muscle and skin), and mixed connective tissue disease (MCTD; a syndrome with features of scleroderma, rheumatoid arthritis, SLE and PM/DM).

Disease Markers

The presence and specificity of certain autoantibodies give a strong indication as to the likely CTD involved. The prevalence of marker autoantibodies in particular CTDs are summarised in Table 1.

Marker Autoantibody	Associated CTD	Autoantibody Prevalence
U1RNP	MCTD, SLE	100%, 30–70%
Sm	SLE	20–30%
SS-A/Ro	Sjögren's syndrome, SLE	60–90%, 25–30%
SS-B/La	Sjögren's syndrome, SLE	40–95%, 6–15%
Scl-70	Systemic sclerosis	20–70%
CENP	Limited systemic sclerosis (CREST)	70–80%
Jo-1	Poly-/dermatomyositis	25–35%

Table 1: *Prevalence of autoantibodies in connective tissue diseases.*

EliA™ Symphony Antigens

- **Recombinant antigens from a eukaryotic system for best quality, consistency and performance**

EliA™ Symphony was developed "clinically" in order to maximise the assay's usefulness in a diagnostic setting. All antigens included have been selected on the basis of the related antibody's significance in one or more of the connective tissue diseases. The result is a clinically relevant, sensitive and highly specific screening assay.

As an intact three-dimensional structure of the antigens (conformation) is crucial for recognition by antibodies, our human recombinant antigens are produced in the eukaryotic baculovirus/insect cells system which, in contrast to bacterial systems, is capable of expressing the antigens in the correct conformation and performing the complex post-translational modifications necessary to ensure the protein is antigenically identical to the human native form. Using recombinant antigens wherever possible allows us to minimise contaminants, avoid harsh, protein-altering purification processes and guarantee a high lot-to-lot consistency of the antigens.

High Clinical Relevance

Sensitive screening with high specificity

	EliA™ Symphony Pos	EliA™ Symphony Neg
SLE	21	13 (incl 7 patients with inactive disease)
Other CTD	13	7
Other AI Disease	2	24
Non AI Disease	8	82
Totals	44	126

Table 2: *Clinical performance of EliA™ Symphony (Gonzalez et al 2005; Clin Chim Acta 359:109-114)*

The results described in this paper demonstrate that EliA™ Symphony has an extremely good clinical performance with a PPV of 77% and NPV of 84%. The Positive Likelihood Ratio of 7.3 for EliA™ Symphony compared favourably with that of the less specific HEp-2 IIF at 6.5 (IIF cut-off at 1:160).

Targeted antigen selection for maximum clinical relevance

In a further study, using samples previously determined to contain specific ENA antibodies, EliA™ Symphony showed outstanding sensitivity in detecting the antibodies. Of particular note are the results for SS-A/Ro and Jo-1 antibodies which are typically difficult to detect using IIF methods.

No. of Samples	Target Specificity	No. Correctly Identified by EliA™ Symphony
51	SS-A/Ro	51
45	SS-B/La	45
44	RNP	44
5	Sm	5
17	Jo-1	17
13	Scl-70	12

Table 3: *Performance of EliA™ Symphony in 175 sera with predefined specificities (Oris et al 2002; Poster presented at the 6th Dresden Symposium on Autoantibodies)*

IgG levels calibrated against International Reference Preparation (IRP) 67/86 from World Health Organization

CDC Serum	Target	EliA™ Symphony Result (Neg <0.7 Pos >1.0)
CDC1	Homogeneous/Rim	1.1
CDC2	Speckled La	21.8
CDC3	Speckled	37.6
CDC4	U1-RNP	12.9
CDC5	Sm	12.0
CDC6	Nucleolar	0.2
CDC7	SS-A/Ro	13.4
CDC8	Centromere	8.6
CDC9	Scl-70	5.9
CDC10	Jo-1	16.4

AMLI Panel Member	Target	EliA™ Symphony Result (Neg <0.7 Pos >1.0)
A	CENP	2.7
B	Scl-70	4.6
D	RNP	6.6
E	SS-A/Ro	2.0
F	Jo-1	4.3
G	SS-B/La	31.3
I	Sm	30.9
J	dsDNA	2.7
K	Neg	0.0
L	Neg	0.0

Table 4: *Performance of EliA™ Symphony with reference preparations*

All CDC sera are found positive with the exception of CDC6. This serum contains antibody specificities directed to antigens which are not included in the test. EliA™ Symphony finds all AMLI panel sera correctly positive or negative as defined in the targets. The positive response for Member J is due to the documented presence of Ro and RNP antibodies in this sample as antibodies to dsDNA are not detected by this system.

The EliA™ System

Time for the Essentials

- completely automated (true walk-away, overnight runs)
- easy instrument management by custom-made software
- barcode-reader (optional for ImmunoCAP™ 100€)
- protocols, QC and raw data easily accessible
- optional host link
- detailed QC management
- integrated stock management system on the ImmunoCAP™ 250

Cost efficient and flexible

- autoimmunity and allergy on the same instrument
- different autoimmune tests in the same run (puzzle-kit-approach)
- no batching of samples necessary – small runs can be handled cost-effectively
- once-monthly calibration – curve control each run
- several ImmunoCAP™ instruments can be linked

A boost in service for your laboratory and your clinicians

- sample – result turnaround the same day
- STAT function on ImmunoCAP™ 250 for immediate testing of emergency samples
- overnight runs possible
- detailed documentation of results (patient or requester specific)
- ImmunoCAP™ 100€ – up to 46 determinations in less than 2.5 hours
- ImmunoCAP™ 250 – fully automated random access – up to 350 determinations per shift
- multiple methods in one run
- positive identification and traceability of samples and reagents on ImmunoCAP™ 250

EliA™

Technical Data

Product	EliA™ Symphony
Antigens	human recombinant U1RNP (70kDa, A, C), Ro (60kDa, 52kDa), La, Centromere B, Scl-70 and Jo-1 proteins, native purified Sm proteins
Cut-off	neg. < 0.7; equiv. 0.7 – 1.0; pos>1.0 (Ratio)
Measuring Range	0.03 – (at least) 32 (Ratio)
Dilution	1:100 (automated)
Sample Material	Serum, Plasma (EDTA, citrate, heparin)
Normal Distribution	Mean 0.2, 95th percentile 0.4 (Ratio)
Reproducibility	Intra-run CV* 3.7–8.8 % Inter-run CV* 0.0–4.8 %

*for details see Directions For Use

Ordering Information

	Package size	*Article No.*
EliA™ Symphony Well	4 x 12	14-5508-01
EliA™ ANA Control (neg + pos)	2 x 3	83-1004-01
EliA™ IgG Calibrator Well	4 x 12	14-5509-01
EliA™ 100 Reagents		
EliA™ IgG Conjugate	6 x 48	83-1002-01
EliA™ IgG Conjugate	2 x 48	83-1005-01
EliA™ IgG Calibrator	6 vials	83-1000-01
EliA™ IgG Curve Control	6 vials	83-1001-01
EliA™ 250 Reagents		
EliA™ IgG Conjugate 50	6 x 50	83-1017-01
EliA™ IgG Conjugate 200	6 x 200	83-1018-01
EliA™ IgG Calibrator Strips	5 strips	83-1015-01
EliA™ IgG Curve Control Strips	5 strips	83-1016-01
General Reagents – ImmunoCAP™ 100		
ImmunoCAP™ Development Kit		10-9263-01
ImmunoCAP™ Washing Solution	6 x 1 l	10-9422-01
General Reagents ImmunoCAP™ 250		
ImmunoCAP™ Development Solution	6 x 180	10-9440-01
ImmunoCAP™ Stop Solution	6 x 590	10-9442-01
ImmunoCAP™ Washing Solution	2 x 5 l	10-9202-01

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