PR3^S and MPO^S

EliA™
Excellence in Autoimmunity

Detect more patients with ANCA-associated vasculitis

EliA PR3^S and EliA MPO^S – the fully automated tests with outstanding sensitivity

Thermo SCIENTIFIC

EliA PR3^S and EliA MPO^S Outstanding performance f

New technique for highest sensitivity

EliA PR3^S and EliA MPO^S – the perfect combination to help identifying ANCA-associated vasculitis

ANCA-associated diseases are caused by vasculitis of the small vessels in which antineutrophil cytoplasmic antibodies (ANCA) can be detected in the patients' blood. A rapid diagnosis of ANCA-associated small-vessel vasculitis is critically important, because life-threatening injury to organs often develops quickly and is mitigated dramatically by immunosuppressive therapy.

EliA PR3^S and EliA MPO^S (s = sensitivity) show greatly enhanced sensitivity, while maintaining exceptional specificity – using an anchor technique that provides better access to the antigen. As completely automated standardized tests, EliA PR3^S and EliA MPO^S deliver results with outstanding analytical and diagnostic accuracy combined with utmost practicality:

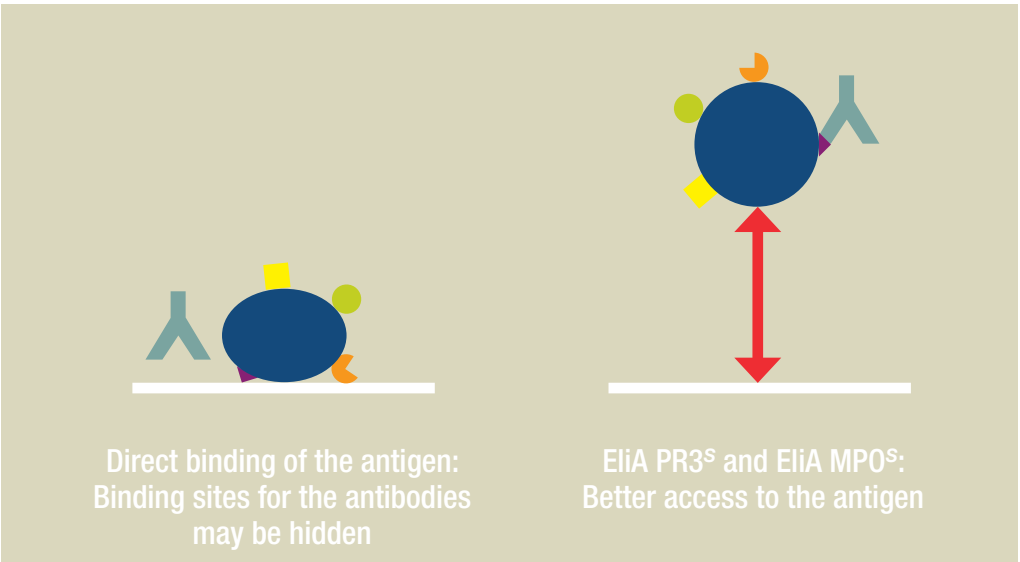


Figure 1: In both, EliA PR3^S and EliA MPO^S, the antigens are bound indirectly to the EliA Well using a spacer in between well and antigen (anchor technique). This increases the sensitivity of the assays substantially, while the specificity is still exceptional.

EliA PR3^S and EliA MPO^S – anchor technique leading to increased sensitivity and exceptional specificity.

or an even better clinical decision

EliA PR3^S and EliA MPO^S – significant higher clinical value than directly coated assays

Miss fewer ANCA-associated vasculitides: EliA PR3^S and EliA MPO^S show dramatically increased sensitivity while keeping or – in the case of PR3^S – even increasing specificity.

High clinical usefulness in ANCA-testing

		Tests with directly coated wells:	
	EliA PR3^S	**EliA PR3**	**Competitor assay**
Sensitivity	79.0 %	51.0 %	69.0 %
Specificity	98.0 %	95.3 %	76.3 %
Positive predictive value (PPV)	96.3	87.9	94.5
Negative predictive value (NPV)	87.5	74.5	82.5
Positive likelihood ratio (LR+)*	39.5	10.9	25.9
Negative likelihood ratio (LR-)*	0.21	0.51	0.32

	EliA MPO^S	**EliA MPO**	**Competitor assay**
Sensitivity	56.5 %	35.9 %	29.4 %
Specificity	99.3 %	99.3 %	99.3 %
Positive predictive value (PPV)	98.1	97.1	96.4
Negative predictive value (NPV)	78.8	71.6	9.6
Positive likelihood ratio (LR+)*	84.8	53.8	44.0
Negative likelihood ratio (LR-)*	0.44	0.64	0.71

Table 1: Performance data of EliA PR3^S / MPO^S and of PR3 / MPO tests with directly coated antigen (internal study – number of patients included: PR3^S – 100 GPA (glomerulonephritis with polyangiitis, Wegener's granulomatosis) and 150 disease controls; MPO^S – 80 MPA (microscopic polyangiitis), 12 NCGN (necrotizing crescentic glomerulonephritis) and 150 disease controls.)

*** Likelihood Ratios – indicating diagnostic evidence**

Likelihood ratios use the sensitivity and specificity of a test to determine if the positive or negative result of a diagnostic test changes the probability of the patient actually being afflicted with the disease.

LR+ = Sensitivity / (1-Specificity) LR - = (1-Sensitivity) / Specificity

Diagnostic evidence:

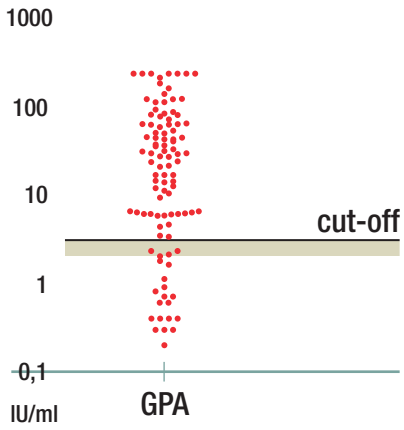
LR+ 0 - 2 none	LR- > 0.5 none
LR+ 2 - 5 weak	LR- 0.2 - 0.5 weak
LR+ 5 - 10 mod.	LR- 0.1 - 0.2 mod.
LR+ > 10 high	LR- < 0.1 high

EliA PR3^{S} and EliA MPO^{S} Outstanding results for val

Highly sensitive: Find more patients with ANCA-associated vasculitis

EliA PR3^{S}: Detect more patients with GPA

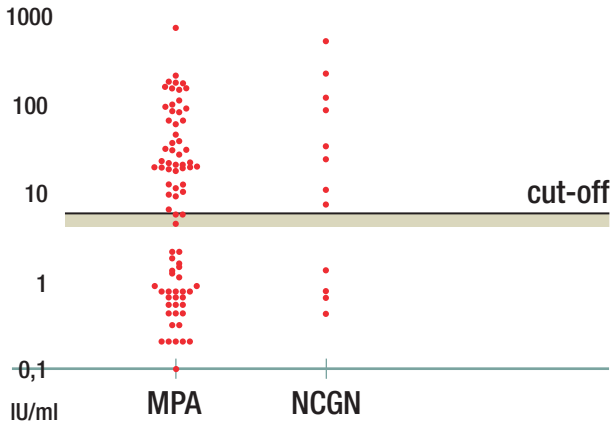
- 79 % of patients with GPA are clearly positive.*



GPA glomerulonephritis with polyangiitis, Wegener's granulomatosis
MPA microscopic polyangiitis
NCGN necrotizing crescentic glomerulonephritis
NAAV non-ANCA-associated vasculitis
CD Crohn's disease
UC ulcerative colitis
CTD connective tissue diseases

EliA MPO^{S}: Detect more patients with MPA and NCGN

- 55 % of patients with MPA and 66 % of patients with NCGN are clearly positive in EliA MPO^{S} (in total 56.5% positivity).*



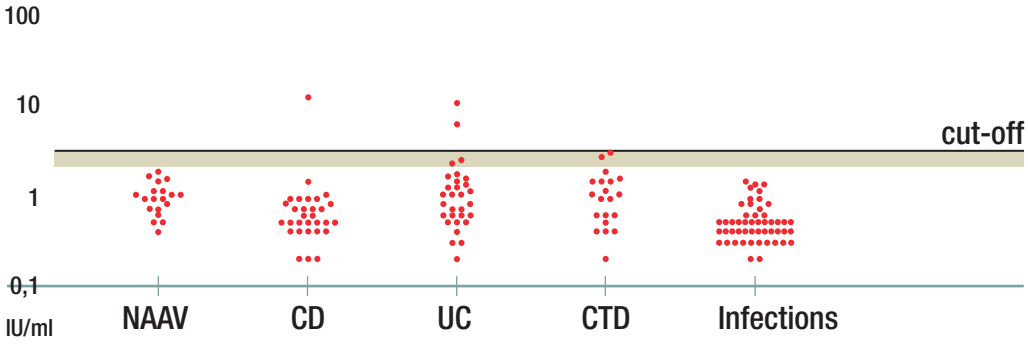
EliA PR3^{S} and EliA MPO^{S} offer excellent diagnostic support.

uable diagnostic guidance

Highly specific: Reduce false positives to the max

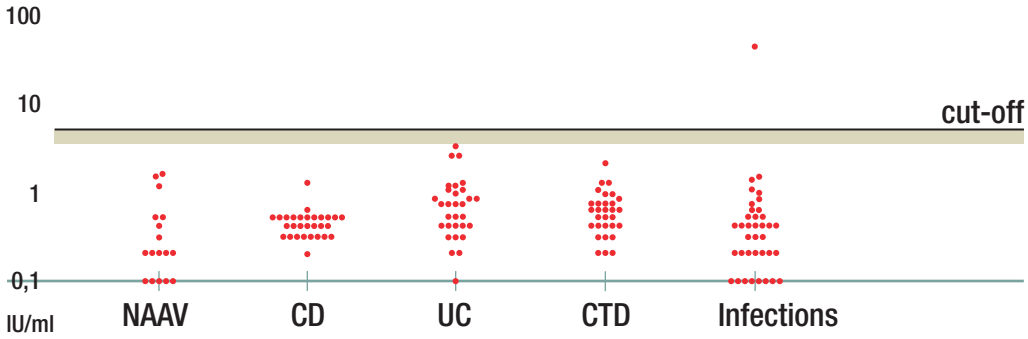
EliA PR3^S: Less false positives in control panels

- 98 % of control patients are correctly negative.*
- EliA PR3^S showed only three false positives in inflammatory bowel diseases, which are known to be anti-PR3-positive in some cases.



EliA MPO^S: Exceptional specificity

- > 99 % of controls are correctly negative.*
- EliA MPO^S was positive in only one control, a patient with Epstein-Barr virus. This serum was also positive in other anti-MPO tests and showed a typical p-ANCA pattern on granulocytes.



Standardized tests:
EliA PR3^S and EliA MPO^S fulfill international standardization requirements:
- Calibrated against CDC reference sera #16 and #15
- Quantitative results are given in International Units

* Internal study – for number of patients included, see Table 1

EliA PR3^{S} and EliA MPO^{S} Outstanding efficiency for i

Ensure operational excellence – every day

Increase efficiency and optimize workflow through fully automated Phadia® Laboratory Systems

Serum and plasma samples are processed automatically by the Phadia Laboratory Systems (Phadia 100 / 250 / 2500 / 5000) leading to a reduced workload for the lab personnel. Minimize your operational costs, simplify your planning and optimize the workflow in your lab.

Improve the service for your customers through fast delivery of results

Even small sample series can be run cost-efficiently because of the monthly stored IgG standard curve. Results of urgent samples can be run with the STAT function in short time.

Consolidate different tests through a comprehensive panel of automated allergy and autoimmunity tests

EliA PR3^{S} and EliA MPO^{S} can easily be performed from the same sample in one run and even simultaneously with other markers of interest such as GBM antibodies or antinuclear antibodies.

EliA PR3^{S} and EliA MPO^{S} – fully automated, fast and cost-efficient testing.

mproved lab procedures

Your advantages in routine testing with EliA PR3^{S} and EliA MPO^{S}:

For the laboratory Improved efficiency with more reliable results – benefitting both clinicians and patients.

For the doctor Increased confidence in management of patients with ANCA-associated vasculitis. Greater ease of differentiation between life-threatening ANCA-associated vasculitis and other renal diseases or other ANCA-positive non-vasculitic diseases.

For the patient Improved quality of life due to quicker diagnosis and therefore faster treatment.

For the healthcare system Clear results first time which reduces the need for re-testing, enabling earlier diagnosis and cost-effective treatment for patients.

Literature: 1. Wiik AS. Autoantibodies in ANCA-associated Vasculitis. *Rheum Dis Clin North Am 2010;36:479.* **2.** Csernok E, Lamprecht P, Gross WL. Diagnostic significance of ANCA in Vasculitis. *Nature Clin Pract Rheumatol 2006;2(4):174-175.* **3.** Westman KW, Selga D, Isberg PE, et al. High proteinase 3-anti-neutrophil cytoplasmic antibody (ANCA) level measured by the capture enzyme-linked immunosorbent assay method is associated with decreased patient survival in ANCA-associated vasculitis with renal involvement. *J Am Soc Nephrol 2003;14:2926-2933.*

EliA PR3^{S} and EliA MPO^{S} – leave routine to the instrument and ensure outstanding efficiency!

EliA PR3^S and EliA MPO^S: technical data

EliA PR3^S and EliA MPO^S on one instrument in the same run from one sample tube.

Antigens	proteinase 3 and myeloperoxidase, both purified from human granulocytes
Dilution	EliA PR3^S: 1:100 (automated)
	EliA MPO^S: 1:50 (automated)
Sample material	Serum, Plasma (EDTA, citrate, heparin)
Standardization	Six point standard curve for IgG. IgG Calibrators are traceable to the International Reference Preparation 67/86 of Human Serum IgA, IgG and IgM from WHO.
	EliA PR3^S is calibrated against the CDC PR3-ANCA Human Reference Serum #16; EliA MPO^S against the CDC MPO-ANCA Human Reference Serum #15 (international standards, results in IU/ml).

Cut-off / measuring range	negative	equivocal	positive	measuring range
EliA PR3^S:	< 2.0 IU/ml	2.0 – 3.0 IU/ml	> 3.0 IU/ml	0.2 – 177 IU/ml
EliA MPO^S:	< 3.5 IU/ml	3.5 – 5.0 IU/ml	> 5.0 IU/ml	0.2 – 134 IU/ml

Normal distribution (Mean / 95 % / 99 % percentile)	EliA PR3^S: 0.3 IU/ml / 0.6 IU/ml / 0.7 IU/ml		
	EliA MPO^S: 0.6 IU/ml / 0.9 IU/ml / 1.5 IU/ml		
Reproducibility	EliA PR3^S: Intra-run CV* 3.9 – 10.5 %	Inter-run CV* 0.0 – 7.0 %	
	EliA MPO^S: Intra-run CV* 2.5 – 6.1 %	Inter-run CV* 1.9 – 4.9 %	*for details see directions for use

Ordering information	**Package size**	**Article No.**
EliA PR3^S Well	4 x 12 determinations	14-5536-01
EliA MPO^S Well	4 x 12 determinations	14-5537-01
EliA Controls		
EliA ANCA/GBM Positive Control 100	6 vials for single use	83-1039-01
EliA ANCA/GBM Positive Control 250	6 vials for single use	83-1034-01
EliA ANCA/GBM Positive Control 2500/5000	6 vials for single use	83-1075-01
EliA IgG/IgM/IgA Negative Control 100	6 vials for single use	83-1042-01
EliA IgG/IgM/IgA Negative Control 250	6 vials for single use	83-1037-01
EliA IgG/IgM/IgA Negative Control 2500/5000	6 vials for single use	83-1074-01

For EliA specific reagents and general reagents please refer to the Product Catalog Allergy & Autoimmunity

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