

# Seraline<sup>®</sup> Anti-Yersinia IgG

# Seraline<sup>®</sup> Anti-Yersinia IgA

Line - Immunoassay for detection of IgG- or IgA-antibodies against *Yersinia enterocolitica* in human serum or plasma

- ▲ sensitive and specific
- ▲ ready-to-use colour-coded reagents
- ▲ short incubation times
- ▲ automatic or visual evaluation

## Introduction

The human pathogenic *Yersinia enterocolitica* is characterized by a 70 kb plasmid encoding for the Yersinia outer proteins (Yops), the virulence factors responsible for the development of acute enteritis. Late manifestations predominantly reactive arthritis also occur. Contaminated food of animal origin is the main source for faecal-oral transmission.

Specific antibodies against Yops are detectable after 10-14 days p.i. with IgM as a marker of early and IgG as a marker of late infections. Specific IgA antibodies are characteristic for chronic forms of Yersinia infections and may persist for longer time periods.

In healthy European populations the anti-*Yersinia enterocolitica* antibody prevalence reaches 12-20% with regional differences.

## Diagnostics

Acute infections are usually diagnosed by direct pathogen detection from patient stool specimens. Isolated Yersinia strains are identified biochemically and tested for pathogenicity by serotyping methods.

In case of late manifestations diagnostics is mainly based on serological methods for determination of specific antibodies to *Yersinia enterocolitica*. Enzyme immunoassays (ELISA), westernblots or line immunoassays (LIA) are well established for detection of specific antibodies in routine diagnostics. Among these methods line immunoassays using recombinant antigens combine the advantage of highly purified specific proteins and defined band localization thus simplifying evaluation.

## Principle of the test

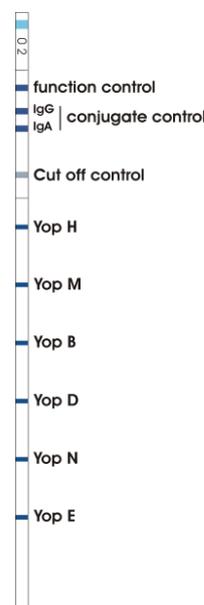
The Seraline<sup>®</sup> Anti-Yersinia uses highly purified recombinant *Yersinia outer proteins* (Yops), which are plotted onto strips of nitrocellulose-membranes in defined distances.

Specific antibodies present in the sample react with the respective antigens during the first incubation step. These immune complexes are detected in the subsequent conjugate incubation step either with anti-human IgG- or anti-human IgA-HRP.

Membrane bound immune complexes are finally detected by formation of blue precipitates with the TMB/substrate solution.

One function control, 2 conjugate controls and a Cut off control support evaluation, which may be performed by visual interpretation or by using the Seraline<sup>®</sup> scan evaluation software.

## Band pattern and characterization



antigen	molecular weight
Yop H	48 kDa
Yop M	45 kDa
Yop B	42 kDa
Yop D	36 kDa
Yop N	34 kDa
Yop E	27 kDa

## Evaluation and interpretation

The single bands are assigned to the respective Yops by usage of the evaluation template or with the software *Seraline*<sup>®</sup> scan.

### Evaluation criteria

#### IgG

<b>positive</b>	Yop D $\geq$ Cut off control OR 2 Yop - bands $\geq$ Cut off control
<b>borderline</b>	1 Yop - band $\geq$ Cut off control (except Yop D)
<b>negative</b>	Yop - bands < Cut off control

#### IgA

<b>positive</b>	Yop D $\geq$ Cut off control OR 2 Yop - bands $\geq$ Cut off control
<b>borderline</b>	1 Yop - band $\geq$ Cut off control (except Yop D)
<b>negative</b>	Yop - bands < Cut off control

### *Seraline*<sup>®</sup> scan Computer based evaluation

n = 488 serum samples		<i>Seraline</i> <sup>®</sup> scan		
		+	+/-	-
visual evaluation	+	233	0	0
	+/-	0	32	4
	-	0	0	219

(+ positive, +/- borderline, - negative,)

**Agreement: 99.2 %**

## Sensitivity

*Seraline*<sup>®</sup> Anti-Yersinia IgG: **97.9%**

n = 150 serum samples		comparative LIA		
		positive	border- line	negative
<i>Seraline</i> <sup>®</sup>	positive	130	0	0
	borderline	7	0	2
	negative	3	0	8

*Seraline*<sup>®</sup> Anti-Yersinia IgA: **88.6%**

n = 150 serum samples		comparative LIA		
		positive	border- line	negative
<i>Seraline</i> <sup>®</sup>	positive	71	2	5
	borderline	4	1	4
	negative	7	3	53

## Specificity

*Seraline*<sup>®</sup> Anti-Yersinia IgG: **88.1%**

n = 100 blood donors		comparative LIA		
		positive	border- line	negative
<i>Seraline</i> <sup>®</sup>	positive	25	0	1
	borderline	3	3	6
	negative	4	6	52

*Seraline*<sup>®</sup> Anti-Yersinia IgA: **92.8%**

n = 100 blood donors		comparative LIA		
		positive	border- line	negative
<i>Seraline</i> <sup>®</sup>	positive	9	0	0
	borderline	1	0	6
	negative	5	2	77



**Catalogue- No. LIA-005-6 G, LIA-005-6 A**

Seramun Diagnostica GmbH  
Sprenhagener Str. 1  
15754 Heidesee, GERMANY  
(16.04.12)



• Certified Management  
System  
• EN ISO 9001  
• EN ISO 13485

Tel.: +49-33767-791 10  
Fax: +49-33767-791 99  
E-Mail: [info@seramun.com](mailto:info@seramun.com)  
[www.seramun.com](http://www.seramun.com)