



SERION ELISA *classic*

Coxsackievirus IgA/IgG/IgM

Intended use

- Qualitative and quantitative detection of human IgA, IgG and IgM antibodies in serum or plasma directed against Coxsackieviruses
- Confirmation of contact with the pathogen
- Support in the categorization of the disease stage

Diagnostic Efficiency

The performance characteristics of the SERION ELISA *classic* Coxsackievirus IgA and IgG tests were calculated using the results from an in-house study utilising more than 40 sera from patients with suspected current infection, in addition to over 80 sera from blood donors and pregnant women. The immunoassays were validated using ELISA tests based on inactivated virus particles as

a reference. The performance characteristics of the SERION ELISA *classic* Coxsackievirus IgM test were calculated utilising more than 50 sera from patients with suspected current infection, in addition to 99 sera from blood donors and pregnant women in comparison to an ELISA test from another manufacturer.

Product	Sensitivity	Specificity
SERION ELISA <i>classic</i> Coxsackievirus IgA	93.3 %	96.4 %
SERION ELISA <i>classic</i> Coxsackievirus IgG	90.5 %	>99 %
SERION ELISA <i>classic</i> Coxsackievirus IgM	92.3 %	92.6 %

Precision

SERION ELISA *classic* Coxsackievirus IgA

Sample	Mean value (OD)	Intraassay CV (%) (n=20)	Mean value (OD)	Interassay CV (%) (n=10)
Serum 1	0.179	4.7	0.213	7.4
Serum 2	0.445	2.9	0.528	7.3
Serum 3	0.774	2.8	0.859	6.1

SERION ELISA *classic* Coxsackievirus IgG

Sample	Mean value (OD)	Intraassay CV (%) (n=20)	Mean value (OD)	Interassay CV (%) (n=10)
Serum 1	0.411	1.7	0.418	9.7
Serum 2	0.718	1.7	0.724	9.4
Serum 3	1.324	5.0	1.339	8.4

SERION ELISA *classic* Coxsackievirus IgM

Sample	Mean value (OD)	Intraassay CV (%) (n=20)	Mean value (OD)	Interassay CV (%) (n=10)
Serum 1	0.065	7.5	0.077	12.1
Serum 2	0.638	3.4	0.747	5.3
Serum 3	1.281	2.4	1.500	3.0

Pathogen

Coxsackieviruses are named after the town in Green County, New York state, where they were first identified in 1948. Coxsackieviruses of particular note are the human pathogenic species A1 to A22 and A24 as well as B1 to B6. The surface of the icosahedral virus capsid consists of the structural proteins VP1, VP2 and VP3, which are responsible for the antigenic properties and the division into the various serotypes.

Disease

Transmission of Coxsackieviruses between hosts occurs primarily by direct contact or droplet infection. In addition, the virus may be transmitted via the placenta. A further important source of infection is contaminated drinking water. The incubation period is generally 3 to 5 days. Some 90 to 95% of all Coxsackievirus infections are asymptomatic or manifest with unspecific febrile symptoms and are frequently not identified. Disease symptoms

which may be caused by Coxsackieviruses include - depending upon serotype - in particular, flu-like symptoms, acute diarrhoea (summer diarrhoea) or upper respiratory tract infection (summer flu, pleurodynia, Bornholm disease), meningitis, encephalitis, pancreatitis, pericarditis, myocarditis or hepatitis. Especially, children under 10 years of age may suffer from hand, foot and mouth disease as a result of Coxsackievirus infection. This disease is characterised by aphthae in the mouth and an itchy blisterlike rash on the hands and feet.

Diagnosis

The demonstration of infection by the detection of specific antibodies generally requires the analysis of serum pairs. A positive result for IgM or IgA combined with rising IgG activity serves as clear evidence of an acute or recent infection. Persisting IgM and IgA antibody levels are frequently observed in chronic infections.

Highlights

- Use of a mixture of recombinant antigens derived from conserved and subtype-specific epitopes of the VP1 proteins of Coxsackieviruses B1, B3 and B5
- Coverage of all serotypes because of the chosen antigen
- Sensitive demonstration of IgM antibodies for detecting primary infections, especially in children
- IgA and IgG detection for confirmation of acute, chronic and previous infections
- Exclusion of background seroprevalence of IgG antibodies resulting in the specific detection of clinically relevant antibody activities
- Quantification of IgA, IgG and IgM antibodies for disease stage monitoring and therapy control

Product	Order No.
SERION ELISA <i>classic</i> Coxsackievirus IgA	ESR134A
SERION ELISA <i>classic</i> Coxsackievirus IgG	ESR134G
SERION ELISA <i>classic</i> Coxsackievirus IgM	ESR134M

SERION ELISA *control*

Please visit our website for more information.

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