



SERION ELISA *classic*

Echovirus IgA/IgG/IgM

Intended use

- Qualitative and quantitative detection of human antibodies in serum or plasma directed against ECHO viruses
- Confirmation of contact with the pathogen
- Support in the categorization of the disease stage

Diagnostic Efficiency

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

Product	Sensitivity	Specificity
SERION ELISA <i>classic</i> Echovirus IgA	95.7 %	97.9 %
SERION ELISA <i>classic</i> Echovirus IgG	95.2 %	95.5 %
SERION ELISA <i>classic</i> Echovirus IgM	93.3 %	99.2 %

Precision

SERION ELISA *classic* Echovirus IgA

Sample	Mean value (OD)	Intraassay CV (%) (n=20)	Mean value (OD)	Interassay CV (%) (n=10)
Serum 1	0.171	3.5	0.204	7.4
Serum 2	0.297	2.4	0.342	6.0
Serum 3	1.015	2.9	1.187	4.3

SERION ELISA *classic* Echovirus IgG

Sample	Mean value (OD)	Intraassay CV (%) (n=20)	Mean value (OD)	Interassay CV (%) (n=10)
Serum 1	0.374	1.8	0.393	9.3
Serum 2	0.772	3.6	0.813	8.9
Serum 3	1.071	2.0	1.094	10.6

Pathogen

ECHO virus is an acronym for Enteric Cytopathic Human Orphan virus. The first ECHO viruses were identified in the early 1950's from isolates of infected children's stool samples. 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 ECHO viruses 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 ECHO virus infections are asymptomatic or manifest with unspecific febrile symptoms and are therefore frequently not identified. Clinical diseases resulting from ECHO virus infection manifest as; upper respiratory tract infection (summer flu), pneu-

SERION ELISA *classic* Echovirus IgM

Sample	Mean value (OD)	Intraassay CV (%) (n=20)	Mean value (OD)	Interassay CV (%) (n=10)
Serum 1	0.258	1.6	0.291	8.0
Serum 2	0.338	3.7	0.394	5.2
Serum 3	0.729	2.5	0.864	3.6

monia, pleurodynia, herpangina, hand foot and mouth disease, febrile generalised exanthems, conjunctivitis, gastroenteritis, or *Myalgia epidemica*.

Additionally, ECHO viruses are the most important cause of febrile infection with aseptic meningitis and encephalitis. Infections during the perinatal period of pregnancy are particularly dangerous and may lead to liver failure and myocarditis in the newborn child.

Infections with ECHO viruses occur throughout the year but do show a seasonal increase during the summer and autumn months in temperate regions.

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 ECHO virus E6 and E9
- Demonstration of all serotypes because of the chosen antigen
- Sensitive demonstration of IgM antibodies for detection of primary infections, particularly 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> Echovirus IgA	ESR135A
SERION ELISA <i>classic</i> Echovirus IgG	ESR135G
SERION ELISA <i>classic</i> Echovirus IgM	ESR135M

SERION ELISA *control*

Please visit our website for more information.

Institut Virion\Serion GmbH

Friedrich-Bergius-Ring 19, 97076 Würzburg, Germany

Tel. +49 931 3045 0 Fax +49 931 3045 100

Mail info@serion-diagnostics.de Web www.serion-diagnostics.de

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