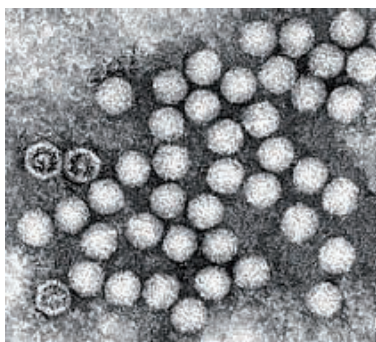


# SERION ELISA *classic*

## Enterovirus IgA / IgG / IgM

SERION ELISA *classic* Enterovirus IgA, IgG and IgM tests are quantitative and qualitative immunoassays for the detection of human antibodies in serum or plasma directed against Enterovirus. The separate detection of individual immunoglobulin classes offers a confirmation of contact with the pathogen and the determination of the disease state.



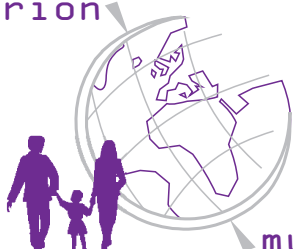
Electron micrograph of Enterovirus (Source: King Saud University).

### Pathogen

Coxsackieviruses A (23 serotypes) and B (6 serotypes) and Echoviruses (31 serotypes) belong to the family of *Picornaviridae*, genus Enterovirus. This virus group shares similar physical, chemical and biological properties and epidemiological patterns. Enteroviruses are ubiquitous pathogens that are primarily transmitted by faecal-oral route and additionally by aerosol (droplet infection). The portal of entry of enteroviruses is the respiratory tract (especially the oropharynx) and the intestine, where they infect and multiply in the oropharyngeal and intestinal epithelium. From there, the viruses may be carried by the bloodstream to the cells of the reticulo-endothelial system and certain target tissues such as myocard, meninges and skin.

### Disease

More than 90 % of enterovirus infections progress subclinically or result only in temporary mild complaints in the upper respiratory tract such as sore throat with or without rhinitis often accompanied by fever. In addition, adults may suffer from pharyngitis, tonsillitis and common cold symptoms. In particular Coxsackieviruses are responsible for the so called summer flu and febrile, catarrhal infections.



The following diseases may be caused by Enteroviruses: abacterial meningitis, meningoencephalitis, herpangina, exanthema (Enteroviruses), pleurodynia, carditis (Coxsackie B), hemorrhagic conjunctivitis (Coxsackieviruses), encephalitis, ataxia, Guillain-Barré syndrome (Echoviruses). In patients with congenital or induced immune deficiency Enteroviruses may persist after infection, leading to chronic diseases like enteritis, arthritis, affection of the CNS or chronic heart disease.

## Diagnosis

Enterovirus infections can be confirmed by virus isolation and identification or serologically by detection of specific antibodies. PCR supplements the classic methods. In serodiagnostics ELISA techniques have been established during the recent years. Due to the large number of serotypes, assays showing a broad reactivity are favoured for diagnosis. While intact virus particles show high type specificity, broad reactivity is achieved by using heat denatured virions as antigens. In the SERION ELISA *classic* Enterovirus highly purified, heat-treated antigen preparations are used. Echovirus type 6 and Coxsackievirus type B5 are described as sufficiently cross-reactive to enable heterotypical diagnosis of Enterovirus infections

## Validation of SERION ELISA *classic* Enterovirus

The SERION ELISA *classic* Enterovirus were evaluated by the analysis of 71 serum samples from patients with suspected Enterovirus infection and 103 serum samples from blood donors. Commercially available ELISA of a leading European manufacturer were used as a reference. Sera classified as borderline were not included in the calculation.

## Sensitivity and Specificity

SERION ELISA <i>classic</i>	Sensitivity	Specificity
Enterovirus IgA	80,0 %	94,7 %
Enterovirus IgG	87,0 %	> 99 %
Enterovirus IgM	83,3 %	97,3 %

## Precision

The intra- and interserial precisions were determined by the analysis of serum samples of different reactivities.

### SERION ELISA *classic* Enterovirus IgA

Sample	Mean value OD	Intraassay CV (%) (n=20)	Mean value OD	Interassay CV (%) (n=10)
weak positive	0,631	6,6	0,686	9,0
weak positive	0,731	5,6	0,773	4,5
positive	1,279	6,3	1,326	3,0

### SERION ELISA *classic* Enterovirus IgG

Sample	Mean value OD	Intraassay CV (%) (n=20)	Mean value OD	Interassay CV (%) (n=10)
negative	0,434	3,4	0,490	4,4
negative	0,783	2,5	0,841	3,0
weak positive	0,982	2,7	1,026	5,8

### SERION ELISA *classic* Enterovirus IgM

Sample	Mean value OD	Intraassay CV (%) (n=20)	Mean value OD	Interassay CV (%) (n=10)
negative	0,316	1,9	0,309	4,5
weak positive	0,658	2,4	0,689	4,1
positive	0,745	3,3	0,756	2,8

## Order Information

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