



SERION ELISA *classic*

Echinococcus IgG

Intended use

- Qualitative and quantitative detection of human IgG antibodies in serum or plasma directed against *Echinococcus granulosus* and *Echinococcus multilocularis*
- Support in the diagnosis of acute infections
- Serological follow up of therapy
- Epidemiological studies

Diagnostic Efficiency

The SERION ELISA *classic* Echinococcus IgG was evaluated by the analysis of 90 serum samples from blood donors and 49 serum samples from patients with suspected *Echinococcus* infection. A commercially available ELISA, which, like the SERION ELISA *classic* Echinococcus IgG, based on cyst fluid of *Echinococcus granulosus*, was used as a reference test.

Product	Sensitivity	Specificity
SERION ELISA <i>classic</i> Echinococcus IgG	> 99%	97.1%

Precision

SERION ELISA *classic* Echinococcus IgG

Sample	Mean value (OD)	Intraassay CV (%) (n=20)	Mean value (OD)	Interassay CV (%) (n=10)
Serum 1	0.343	5.3	0.384	4.1
Serum 2	0.711	2.4	0.748	2.6
Serum 3	1.397	1.9	1.441	3.2

Pathogen

Echinococcosis is a zoonotic infection caused by the tapeworms *Echinococcus granulosus* and *Echinococcus multilocularis*. Infections with *E. granulosus* occur worldwide, while infections caused by *E. multilocularis* are restricted to the northern hemisphere. Sources of infection are final hosts, i. e. dogs for *E. granulosus* and primarily foxes for *E. multilocularis* as well as food contaminated with parasite eggs.

Disease

After oral ingestion of parasite eggs and hematogenous distribution, the *E. granulosus* larvae begin to vesiculate mainly in the liver (approx. 60% of the patients), but also in the lungs (20%) and in other organs (20%). The parasites form spherical, unilocular, fluid-filled cysts which can achieve diameters between 1 to 15 cm. In contrast to cystic echinococcosis, *E. multilocularis* larvae are found almost exclusively (98%) in the liver, but secondary lesions can spread metastatically to other organs (lungs, kidneys, CNS and others). The parasites grow infiltrative and tumorlike in the host tissue and, during weeks up to months, form

a spongy „alveolar“ system of connected cavities which are filled with small vesicles. The diffuse borders are usually not well delimited from adjacent liver tissue. Cysts of *E. granulosus* cause pathological damage or dysfunction mainly by the gradual process of space-occupying repression or displacement of vital host tissue, vessels, or organs. Consequently, clinical pathology varies greatly, depending on the site and size of the cyst, and comprise e. g. epigastric and thoracic pain. Continuous tissue destruction caused by *E. multilocularis* may manifest with liver dysfunction after an incubation time of 5 up to 15 years. The nonspecific symptoms usually include epigastric pain (36% of the patients) and obstructive jaundice (27%). In untreated patients lethality was found to be 94 to 100%. Treatment significantly decreased mortality to 10 to 14%.

Diagnosis

Diagnosis of echinococcosis relies on clinical symptoms, imaging techniques (radiology, computer tomography) as well as on serological investigations.

Highlights

- Demonstration of IgG antibodies directed against *E. granulosus* and *E. multilocularis*
- Quantitative determination of IgG antibodies starting in the clinically negative measurement range for the analysis of paired sera for disease stage monitoring and therapy control
- Excellent diagnostic efficiency with high sensitivity and specificity

Product	Order No.
SERION ELISA <i>classic</i> Echinococcus IgG	ESR107G

SERION ELISA *control*

Please visit our website for more information.

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