EUROLINE Anti-TO.R.C.H. Profile (IgG, IgM)

- Comprehensive immunoblot profiles for determination of the IgG or IgM antibody status with respect to pregnancy-relevant infectious agents
- Multiparameter analysis – up to six results per test strip with only one incubation
- Fully automated incubation and evaluation using EUROBlotOne / EUROLineScan

Technical data

**Antigens**
- Toxoplasma gondii, Toxoplasma gondii ROP1 (only IgM), rubella virus, cytomegalovirus (CMV), herpes simplex virus 1 and 2 (HSV-1 and -2)

**Sample dilution**
- Serum or plasma, 1:51 in universal buffer

**Test procedure**
- 30 min / 30 min / 10 min, room temperature, fully automatable

**Test kit format**
- 16 or 64 membrane strips; includes all necessary reagents

**Automation**
- Compatible with all commercial blot processing systems, e.g. EUROBlotOne or EUROBlotMaster from EUROIMMUN

**Order no.**
- DN 2410-1601-4 G, M (16 strips)
- DN 2410-6401-4 G, M (64 strips)

**Related products**
- DN 2410-1601-11 G (16 strips) EUROLINE Anti-TO.R.C.H. 10 Profile (IgG)
- DN 2410-6401-11 G (64 strips) EUROLINE Anti-TO.R.C.H. 10 Profile (IgG)

Clinical significance

The term ToRCH encompasses infectious agents that can be transmitted to a child in the context of a vertical infection, either intrauterinely, during birth or postnatally. These include Toxoplasma gondii, rubella virus, CMV, herpes simplex virus (HSV), as well as other pathogens such as Bordetella pertussis, Chlamydia trachomatis, parvovirus B19, Treponema pallidum and VZV. Primary infections during pregnancy are especially feared, since they are associated with an increased risk of foetal damage. The consequences can be premature birth or miscarriage, deformities or postnatal infection in the child. The determination of IgG and IgM antibodies against ToRCH antigens before or at the beginning of pregnancy allows the immune status of the mother and the risks to a pregnancy to be assessed. The results of antibody determination can guide the implementation of infection prophylaxis measures or subsequent close monitoring with further tests as part of prenatal care.

Diagnostic application

The EUROLINE Anti-TO.R.C.H Profile (IgG and IgM) is a multiparameter line blot based on pathogen-specific recombinant and native highly purified antigens. The test allows the determination of specific antibodies of classes IgG and IgM against the infectious agents Toxoplasma gondii, rubella virus, CMV, HSV-1 and HSV-2 on one strip and with only one incubation.

Moreover, with the EUROLINE Anti-TO.R.C.H. 10 Profile (IgG) (order no. DN 2410-1601-11 G) there is one more IgG profile available that additionally allows determination of the antibody status with respect to Bordetella pertussis toxin (PT), Chlamydia trachomatis, parvovirus B19, Treponema pallidum and varicella zoster virus (VZV). Suspected cases of acute infection, e.g. due to a positive IgM result or the presence of clinical symptoms, should be investigated further using additional diagnostic methods.
**Test principle**

The test kit contains test strips coated with parallel lines of highly purified antigens. In the first reaction step, diluted patient samples are incubated with the immunoblot strips. In the case of positive samples, the specific IgG or IgM antibodies (also IgA) will bind to the corresponding antigenic site. To detect the bound antibodies, a second incubation is carried out using an enzyme-labelled anti-human IgG or IgM (enzyme conjugate), which is capable of promoting a colour reaction.

**Automatic processing**

EUROBlotOne is a fully automatic device for the standardised processing of EUROIMMUN line assays (EUROLINE, EUROLINE-WB, Westernblot) – from sample recognition to the final test result. Samples are pipetted by the device and all incubation and washing steps are carried out automatically. Finally the data of the pictures taken by the integrated camera are automatically evaluated and digitally archived by the EUROLinScan software. Alternatively, the immunoblot strips can be incubated by the EUROBlotMaster and scanned using the EUROBlotScanner or photographed directly in the incubation tray using the EUROBlotCamera. Also in this case, the automatic evaluation is carried out by the EUROLinScan software. The bidirectional communication with a laboratory information management system for import of work lists and export of results is enabled by EUROLinScan or, optionally, the laboratory management software EUROLabOffice. A separate results sheet can be produced for each patient.

**Sensitivity and specificity**

In the investigation of precharacterised sera from interlaboratory tests and 150 sera from healthy blood donors using the EUROIMMUN Anti-TO.R.C.H Profile (IgG, IgM), the following results were achieved:

<table>
<thead>
<tr>
<th>Antibodies against</th>
<th>EUROIMMUN Anti-TO.R.C.H. Profile (IgG)</th>
<th></th>
<th>EUROIMMUN Anti-TO.R.C.H. Profile (IgM)</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Sensitivity</td>
<td>Specificity</td>
<td>Prevalence*</td>
</tr>
<tr>
<td>Toxoplasma gondii</td>
<td>19</td>
<td>100%</td>
<td>100%</td>
<td>42.7%</td>
</tr>
<tr>
<td>Toxoplasma gondii (ROP1) 77</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Rubella virus</td>
<td>20</td>
<td>100%</td>
<td>100%</td>
<td>96.7%</td>
</tr>
<tr>
<td>CMV</td>
<td>79</td>
<td>97.9%</td>
<td>100%</td>
<td>32.7%</td>
</tr>
<tr>
<td>HSV-1</td>
<td>20</td>
<td>100%</td>
<td>100%</td>
<td>77.3%</td>
</tr>
<tr>
<td>HSV-2</td>
<td>20</td>
<td>100%</td>
<td>100%</td>
<td>11.3%</td>
</tr>
</tbody>
</table>

*Healthy blood donors n = 150; 77 Highly specific supplementary marker for the diagnosis of early-phase Toxoplasma gondii infections

**Correlation**

246 sera were investigated using EUROIMMUN ELISA test systems as reference method (Anti-Toxoplasma gondii ELISA, Anti-Rubella Virus ELISA, Anti-CMV ELISA). The comparison of methods yielded the following sensitivities and specificities (excluding borderline sera):