EUROLINE Anti-TO.R.C.H. 10 Profile (IgG)

- Most extensive immunoblot profile for determination of IgG antibodies against pregnancy-relevant infectious agents*
- Multiparameter analysis with 10 results per test strip – with just one incubation
- Fully automatable incubation and evaluation using EUROBlotOne/EUROLineScan software

**Technical data**

**Antigens**

- *Toxoplasma gondii*, rubella virus, cytomegalovirus (CMV), herpes simplex virus HSV-1 and HSV-2,
- *Bordetella pertussis* toxin (PT), *Chlamydia trachomatis* (MOMP/major outer membrane protein),
- parvovirus B19, *Treponema pallidum*, *Varicella zoster virus* (VZV)

**Sample dilution**

- Serum or plasma; 1:51 in universal buffer

**Test procedure**

- 30 min / 30 min / 10 min (sample/conjugate/substrate incubation), room temperature, fully automatable

**Test kit format**

- 16, 50 or 64 membrane strips; kit includes all necessary reagents

**Automation**

- Compatible with the EUROBlotOne or EUROBlotMaster from EUROMMUN; the evaluation is performed using the EUROLineScan software.

**Order no.**

- DN 2410-1601-11 G (16 strips)
- DN 2410-6401-11 G (64 strips)
- DN 2410-5001-11 G Immunoblot-PreQ (pre-equipped individual channels, 50 strips)**

**Clinical significance**

The term ToRCH encompasses infectious agents which can be transmitted to a child in the context of a vertical infection, either intrauterinally, during birth (sub partu) or postnataally. 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. ToRCH infectious agents include *Toxoplasma gondii*, rubella virus, CMV, herpes simplex virus, as well as other pathogens such as *Bordetella pertussis*, *Chlamydia trachomatis*, parvovirus B19, *Treponema pallidum* and VZV. The determination of IgG antibodies against ToRCH pathogens 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. 10 Profile (IgG) offers the currently most extensive profile for the detection of antibodies of class IgG against pregnancy-relevant infectious agents. The test allows the determination of specific IgG antibodies against 10 different ToRCH pathogens on one test strip and with just one incubation: *Toxoplasma gondii*, rubella virus, CMV, HSV-1, HSV-2, *Bordetella pertussis* (PT), *Chlamydia trachomatis*, parvovirus B19, *Treponema pallidum* and VZV. Through the targeted selection of native and recombinant antigen substrates, pathogen-specific IgG can be detected with high sensitivity and specificity. If an acute infection is suspected, it should be clarified with further diagnostic methods.

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* The test is not intended to be used for the determination of suitability of sample material for transfusion, transplantation or cell administration in accordance with EU regulation 2017/746.
** Compatible only with the EUROBlotOne
Test principle

The test kit contains test strips which are coated with parallel lines of highly purified antigens. In the first reaction step the blot strips are incubated with diluted patient samples. In the case of positive samples, specific antibodies of the class IgG (anti IgA, IgM) bind to the corresponding antigens. To detect the bound antibodies, a second incubation is carried out using enzyme-labelled antibodies of class IgG (enzyme conjugate), which promote a colour reaction upon addition of the substrate solution.

Automated 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 EUROLineScan software. Alternatively, the immunoblot strips can be incubated by the EUROBlotMaster and scanned using a flatbed scanner. Also in this case, the automatic evaluation is carried out by the EUROLineScan software. The bidirectional communication with a laboratory information management system for import of work lists and export of results is enabled by EUROLineScan or, optionally, the laboratory management software EUROLabOffice 4.0. A separate results sheet can be produced for each sample.

Sensitivity and specificity

The following data were obtained with precharacterised quality assessment samples and 150 sera from healthy blood donors using the EUROIMMUN Anti-TO.R.C.H. 10 Profile (IgG):

<table>
<thead>
<tr>
<th>Antibodies against</th>
<th>Toxoplasma gondii n = 19</th>
<th>Rubella virus n = 20</th>
<th>CMV n = 79</th>
<th>HSV-1 n = 20</th>
<th>HSV-2 n = 20</th>
<th>Bordetella pertussis (PT) n = 10</th>
<th>Chlamydia trach. (MOMP) n = 13</th>
<th>Parvovirus B19 n = 20</th>
<th>Treponema pallidum n = 20</th>
<th>VZV n = 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>100%</td>
<td>100%</td>
<td>97.9%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Specificity</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
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<tr>
<td>Prevalence*</td>
<td>42.7%</td>
<td>96.7%</td>
<td>32.7%</td>
<td>77.3%</td>
<td>11.3%</td>
<td>12.7%</td>
<td>22.0%</td>
<td>64.0%</td>
<td>0.0%</td>
<td>98.0%</td>
</tr>
</tbody>
</table>

*healthy blood donors n = 150

Correlation

246 sera were investigated with EUROIMMUN ELISA test systems (Anti-Toxoplasma gondii ELISA, Anti-Rubella Virus ELISA, Anti-CMV ELISA) as reference method, 92 further sera with the EUROIMMUN Chlamydia trachomatis EUROLINE-WB (IgG). The method comparison yielded the following specificities and sensitivities (borderline sera excluded):

<table>
<thead>
<tr>
<th></th>
<th>Comparison with reference method ELISA (n = 246)</th>
<th>Comparison with reference method EUROLINE-WB (n = 92)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anti-Toxoplasma gondii</td>
<td>Anti-Rubella virus</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>98.9%</td>
<td>100%</td>
</tr>
<tr>
<td>Specificity</td>
<td>98.7%</td>
<td>84.6%</td>
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</tbody>
</table>

Literature