Anti-Chlamydia pneumoniae ELISA (IgG)

Based on purified cell lysate
Sensitive detection of antibodies against Chlamydia pneumoniae
Fully automated processing and evaluation

Technical data

Antigen
Highly purified cell lysate of HL cells infected with Chlamydia pneumoniae of strain CWL-029

Calibration
Quantitative, in relative units per millilitre (RU/ml)
Calibration serum 1: 200 RU/ml
Calibration serum 2: 20 RU/ml
Calibration serum 3: 2 RU/ml
Recommended upper threshold for non-infected individuals (cut-off): 20 RU/ml
Semiquantitative evaluation possible via ratio

Sample dilution
Serum or plasma, 1:101 in sample buffer

Reagents
Ready for use, with the exception of the wash buffer (10x); colour-coded solutions, in most cases exchangeable with those in other EUROIMMUN ELISA kits

Test procedure
60 min (37°C) / 30 min / 15 min, room temperature, fully automatable

Measurement
450 nm, reference wavelength between 620 nm and 650 nm

Test kit format
96 break-off wells; kit includes all necessary reagents

Order no.
EI 2192-9601 G

Clinical significance

The pathogen Chlamydia pneumoniae (synonym: Chlamydomphila pneumoniae) is recognised as the third Chlamydia species alongside Chlamydia trachomatis and Chlamydia psittaci. C. pneumoniae is a worldwide spread, exclusively human pathogen which is transmitted by aerosols. Approximately half of infections proceed asymptptomatically or may cause a mildly sore throat at the most. All other cases of infections with C. pneumoniae are characterised predominantly by persisting unproductive cough, headache and fever. Chronic illnesses associated with C. pneumoniae are bronchial asthma, coronary heart diseases and atherosclerosis as well as more rare diseases such as meningoencephalitis, myocarditis and Guillain Barré syndrome. Secondary reactive C. pneumoniae arthritis, which is often accompanied by synovialitis or tendovaginitis, is of particular importance. More than 50% of adults over 20 years of age have experienced a C. pneumoniae infection and developed antibodies against the pathogen.

Diagnostic application

Since the diagnosis of C. pneumoniae infections by means of symptoms or radiography is not entirely reliable owing to the large variety of manifestations, laboratory diagnostics play a significant role. The Anti-Chlamydia pneumoniae ELISA (IgG) is excellently suited for the serological detection of a C. pneumoniae infection and is a useful supplement to the direct detection method. A positive IgM and/or IgA result together with a significant increase in the IgG titer of a follow-up sample taken after two to eight weeks indicate an acute infection. Moreover, serological analyses can provide information about the epidemiology of C. pneumoniae infections.
The levels of anti-C. pneumoniae antibodies (IgG) were analysed with the EUROIMMUN Anti-Chlamydia pneumoniae ELISA (IgG) in a panel of 500 healthy blood donors. With a cut-off value of 20 IU/ml, 72.2% of the blood donors were anti-C. pneumoniae positive (IgG).

The reproducibility of the test was investigated by determining the intra- and inter-assay coefficients of variation using three samples. The intra-assay CVs are based on 20 determinations and the inter-assay CVs on four determinations performed in six different test runs.

111 clinically precharacterised patient samples from quality assessment institutes (INSTAND e.V., Germany; Labquality, Finland) were tested using the EUROIMMUN Anti-Chlamydia pneumoniae ELISA (IgG). The agreement of the qualitative ELISA results with the specifications of the quality assessment institutes was 99% (excluding borderline sera).

143 precharacterised patient samples (origin: Europe; reference method: commercially available ELISA from another manufacturer) were investigated using the EUROIMMUN Anti-Chlamydia pneumoniae ELISA (IgG). The sensitivity of the EUROIMMUN ELISA was 98%, with a specificity of 100%.

216 sera from patients with acute infections by different pathogens (positive IgG results) without previous C. pneumoniae infections were investigated with the EUROIMMUN ELISA (IgG). No cross reactions (CR) were found.

### Sensitivity and specificity

<table>
<thead>
<tr>
<th>Antibodies against</th>
<th>n</th>
<th>CR</th>
<th>Antibodies against</th>
<th>n</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenovirus</td>
<td>12</td>
<td>0%</td>
<td>Mumps virus</td>
<td>12</td>
<td>0%</td>
</tr>
<tr>
<td>Bordetella pertussis</td>
<td>12</td>
<td>0%</td>
<td>Mycoplasma pneumoniae</td>
<td>12</td>
<td>0%</td>
</tr>
<tr>
<td>CMV</td>
<td>12</td>
<td>0%</td>
<td>Parainfluenza virus Pool</td>
<td>12</td>
<td>0%</td>
</tr>
<tr>
<td>EBV-CMV</td>
<td>12</td>
<td>0%</td>
<td>Parvovirus B19</td>
<td>12</td>
<td>0%</td>
</tr>
<tr>
<td>Helicobacter pylori</td>
<td>12</td>
<td>0%</td>
<td>Rubella virus</td>
<td>12</td>
<td>0%</td>
</tr>
<tr>
<td>HSV-1</td>
<td>12</td>
<td>0%</td>
<td>RSV</td>
<td>12</td>
<td>0%</td>
</tr>
<tr>
<td>Influenza virus A</td>
<td>12</td>
<td>0%</td>
<td>Toxoplasma gondii</td>
<td>12</td>
<td>0%</td>
</tr>
<tr>
<td>Influenza virus B</td>
<td>12</td>
<td>0%</td>
<td>VZV</td>
<td>12</td>
<td>0%</td>
</tr>
<tr>
<td>Measles virus</td>
<td>12</td>
<td>0%</td>
<td>Yersinia enterocolitica</td>
<td>12</td>
<td>0%</td>
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</tbody>
</table>

### Cross reactivity

<table>
<thead>
<tr>
<th>Targets from QA institutes</th>
<th>n = 111</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>EUROIMMUN Anti-Chlamydia pneumoniae ELISA (IgG)</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

### Quality assessment results

216 sera from patients with acute infections by different pathogens (positive IgG results) without previous C. pneumoniae infections were investigated with the EUROIMMUN ELISA (IgG). No cross reactions (CR) were found.

### Literature