Evaluation of Commercial Rubella Immunoglobulin G Avidity Assays (Summary)

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Precharacterisation of low- and high-avidity serum panels with in-house rubella virus IgG avidity assay

Low-avidity panel
Patients with acute rubella infection

High-avidity panel
Pregnant women under rubella screening

Comparison of in-house rubella virus IgG avidity assay with five commercial rubella virus avidity assays using the precharacterised sera (low-avidity and high-avidity panels)

a) Adaltis EIAgel (Adaltis Italia, Casalecchio di Reno, Italy)
b) Enzygnost anti-rubella virus IgG avidity (Dade Behring, Marburg, Germany)
c) Diesse Enzywell (Diesse Diagnostica, Siena, Italy)
d) EUROIMMUN Anti-Rubella Virus ELISA (avidity) (EUROIMMUN AG, Luebeck, Germany)
e) Radim EIA Well (Radim SpA, Rome, Italy)

Conclusion of the study

Weighted kappa values for commercial rubella virus avidity assays compared to in-house gold standard

<table>
<thead>
<tr>
<th>Commercial assay</th>
<th>n</th>
<th>Weighted kappa</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUROIMMUN</td>
<td>66</td>
<td>0.98</td>
<td>0.02</td>
</tr>
<tr>
<td>Radim</td>
<td>66</td>
<td>0.92</td>
<td>0.05</td>
</tr>
<tr>
<td>Behring</td>
<td>66</td>
<td>0.61</td>
<td>0.08</td>
</tr>
<tr>
<td>Adaltis</td>
<td>66</td>
<td>0.28</td>
<td>0.08</td>
</tr>
<tr>
<td>Diesse</td>
<td>66</td>
<td>0.21</td>
<td>0.07</td>
</tr>
</tbody>
</table>

*In order of weighted kappa value

» The EUROIMMUN Anti-Rubella Virus ELISA (avidity) showed an excellent correlation with the in-house rubella virus IgG avidity assay.

» The EUROIMMUN assay was statistically significantly better \( (P < 0.01) \) than the commercial assays from Behring, Adaltis and Diesse.

» The EUROIMMUN Anti-Rubella Virus ELISA (avidity) was the only test in this study to reliably identify acute rubella virus infections: the avidity index for all low-avidity sera was clearly below 40%.