PRODUCT SPECIFICATIONS

Name
Anti-h LH 5301 SP-5

Specificity
Antibody recognizes human luteinizing hormone (lutropin), and its beta-subunit

Description
Monoclonal mouse antibody, cultured in vitro under conditions free from animal-derived components

Product code
100016

Product buffer solution
0.9 % NaCl, 0.095 % NaN₃ as a preservative

Shelf life and storage
24 months from manufacturing at 2–8 °C

Analyte description
In both males and females, LH is essential for reproduction. In females FSH initiates follicular growth and at the time of the maturation of the follicle the estrogen rise leads to a release of LH over a 24–48 hour period. This 'LH surge' triggers ovulation thereby not only releasing the egg, but also initiating the conversion of the residual follicle into a corpus luteum that, in turn, produces progesterone to prepare the endometrium for a possible implantation. LH is necessary to maintain luteal function for the first two weeks. In case of a pregnancy luteal function will be further maintained by the action of hCG from the newly established pregnancy. In the male, LH acts upon the Leydig cells of the testis and is responsible for the production of testosterone.

PARAMETERS TESTED ON EACH LOT

Product appearance
Liquid, may turn slightly opaque during storage

Product concentration
5.0 mg/ml (+/- 10 %)

Immunoreactivity
80–120 % compared to the reference sample in an FIA test

IEF Profile
6.5 – 6.9

Purity
≥ 95 %

PARAMETERS DETERMINED DURING PRODUCT DEVELOPMENT

Subclass
IgG₁

Association rate constant
5.8 x 10⁶ 1/Ms

Dissociation rate constant
1.3 x 10⁻⁵ 1/s

Affinity constant
Kₐ = 4.4 x 10¹¹ 1/M; K₀ = 2.3 x 10⁻¹² M (= 2.3 pM)

Determination method
SPR analysis (ProteOn XPR36)

Determination antigen
LH, Scripps Laboratories (Cat L0815, Lot 2360102)
**Cross-reactivities**

<table>
<thead>
<tr>
<th>Antibody</th>
<th>Cross-reactivity</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH α</td>
<td>13% (Scripps Laboratories, Cat L0914, Lot 698811)</td>
<td></td>
</tr>
<tr>
<td>LH β</td>
<td>170% (Scripps Laboratories, Cat L1014, Lot 237711)</td>
<td></td>
</tr>
<tr>
<td>FSH</td>
<td>5% (Scripps Laboratories, Cat F0614, Lot 805811)</td>
<td></td>
</tr>
<tr>
<td>hCG</td>
<td>138% (Scripps Laboratories, Cat C0714, Lot 210164)</td>
<td></td>
</tr>
<tr>
<td>TSH</td>
<td>0.03% (Scripps Laboratories, Cat T0114, Lot 181711)</td>
<td></td>
</tr>
</tbody>
</table>

**Epitope**

B1 in a pairwise comparison as described in Pettersson et al. (1991).

Two antibodies binding to the same, or closely located epitopes, belong to the same group and hence cannot be used as a pair in a sandwich assay. Epitope group numbering does not give any detailed information where the epitope is located.

**Pair recommendations**

<table>
<thead>
<tr>
<th>Capture Antibody</th>
<th>Detection Antibody</th>
</tr>
</thead>
<tbody>
<tr>
<td>S301</td>
<td>S302, 5303, 5304</td>
</tr>
<tr>
<td>S302, 5303, 5304</td>
<td>S301</td>
</tr>
<tr>
<td>S301</td>
<td>5501 (α-subunit)</td>
</tr>
</tbody>
</table>

Please note that pair recommendations are based on results obtained by our laboratory. Equally good results may be obtained using other pairs and therefore these recommendations are only indicative.

**Product stability**

<table>
<thead>
<tr>
<th>Temperature, Time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>-70 °C, 21 days</td>
<td>Not Determined (N/D)</td>
</tr>
<tr>
<td>-20 °C, 21 days</td>
<td>N/D</td>
</tr>
<tr>
<td>+4 °C, 21 days</td>
<td>N/D</td>
</tr>
<tr>
<td>+35 °C, 7 days</td>
<td>N/D</td>
</tr>
<tr>
<td>+35 °C, 21 days</td>
<td>N/D</td>
</tr>
<tr>
<td>+45 °C, 3 days</td>
<td>N/D</td>
</tr>
<tr>
<td>+45 °C, 7 days</td>
<td>N/D</td>
</tr>
</tbody>
</table>

Stability testing is performed in the product buffer to see whether different temperatures affect the antigen binding, charge or composition of the antibody. Please note that the shelf life given on the first page is based on real time stability testing at 2–8 °C in the product buffer.

**Miscellaneous**

In Pettersson et al. (1990) authors designed a rapid two-step procedure which had negligible cross-reactivity with TSH and FSH. In Pettersson et al. (1991) authors showed that some LH antibodies react differently with LH which is present in 25% of individuals. An assay utilizing 5301 was shown to react equally with LH of the two groups.

**References**