

Product specifications

Name	Anti-h LH 5304 SP-5
Specificity	Antibody recognizes human luteinizing hormone (lutropin), and its beta-subunit
Description	Monoclonal mouse antibody, cultured <i>in vitro</i> under conditions free from animal-derived components
Product code	100022
Product buffer solution	0.9 % NaCl, 0.095 % NaN ₃ as a preservative
Shelf life and storage	36 months from manufacturing at 2–8 °C
Subclass	IgG ₁
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	5.6–6.3
Purity	≥ 95 %

Kinetic parameters

Association rate constant	4.7×10^6 1/Ms
Dissociation rate constant	1.6×10^{-5} 1/s
Affinity constant	$K_A = 2.9 \times 10^{11}$ 1/M; $K_D = 3.4 \times 10^{-12}$ M (= 3.4 pM)
Determination method	SPR analysis (ProteOn XPR36)
Determination antigen	LH, Scripps Laboratories (Cat L0815, Lot 2360102)

Cross-reactivities

LH 100 % (Scripps Laboratories, Cat L0814, Lot 125711)
 LH α 8 % (Scripps Laboratories, Cat L0914, Lot 698811)
 LH β 108 % (Scripps Laboratories, Cat L1014, Lot 237711)
 FSH 1 % (Scripps Laboratories, Cat F0614, Lot 805811)
 hCG <0.03 % (Scripps Laboratories, Cat C0714, Lot 191712)
 TSH <0.03 % (Scripps Laboratories, Cat T0114, Lot 181711)

Epitope

Epitope between beta 1-2 as described in Nilsson et al. (2001)
 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

		DETECTION				
		5301	5302	5303	5304	5501 (a subunit)
CAPTURE	5301	-	+	+	+	+
	5302	+	-	-	-	+
	5303	+	-	-	-	-
	5304	+	-	-	-	-

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.

Platforms tested FIA, CLIA

Antigens tested Native LH antigen Lee Biosolutions 996-31.

Product stability

TEMPERATURE, TIME	RESULT
-70 °C, 21 days	Not Determined (N/D)
-20 °C, 21 days	OK
+4 °C, 21 days	OK
+30 °C, 21 days	OK
+35 °C, 21 days	N/D
+45 °C, 7 days	OK

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 Nilsson et al. (2001) authors performed an epitope mapping analysis of 30 different monoclonal antibodies for LH. In their analysis it was shown that 5304 binds to an epitope located between groups beta 1 and 2 and the binding epitope overlaps slightly with the binding epitope of 5303. Antibodies reacting with beta 1 epitope did not react with beta-subunit reacted with FSH. They also showed that 5304 reacts with intact LH as well as with beta-subunit of LH and has no cross-reactivity with hCG, TSH or FSH. Clone 5302 reacted also with variant-LH.

References

Nilsson, C., Seppälä, M., and Pettersson, K., (2001) Immunological characterization of human luteinizing hormone with special regard to a common genetic variant. J.Endocrinol. 168:10-116