Medix Biochemica

MedixMAB™ ANTIBODIES

2021-01-20

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 % NaN_3 as a preservative
Shelf life and storage	24 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	6.3–7.2
Purity	≥ 95 %

Kinetic parameters

Association rate constant	5.8×10^{6} 1/Ms
Dissociation rate constant	1.3×10^{-5} 1/s
Affinity constant	$K_A = 4.4 \times 10^{11}$ 1/M; $K_D = 2.3 \times 10^{-12}$ M (= 2.3 pM)
Determination method	SPR analysis (ProteOn XPR36)
Determination antigen	LH, Scripps Laboratories (Cat L0815, Lot 2360102)

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Cross-reactivities

LH α 13 % (Scripps Laboratories, Cat L0914, Lot 698811)
LH β 170 % (Scripps Laboratories, Cat L1014, Lot 237711)
FSH 5 % (Scripps Laboratories, Cat F0614, Lot 805811)
hCG 138 % (Scripps Laboratories, Cat C0714, Lot 210164)
TSH 0.03 % (Scripps Laboratories, Cat T0114, Lot 181711)

Epitope

B1 in a pair wise 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

		DETECTION				
		5301	5302	5303	5304	5501 (α 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	N/D
+4 °C, 21 days	N/D
+35 °C, 7 days	N/D
+35 °C, 21 days	N/D
+45 °C, 3 days	N/D
+45 °C, 7 days	N/D

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

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Vilja, P., Wichmann, L., Isola, J., and Tuohimaa, P., (1988) Monoclonal-antibody based noncompetitive avidin-biotin assay for lutropin in urine.
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