

PRODUCT SPECIFICATIONS

Name	Anti-hCG beta 5004 SP-1
Specificity	Antibody recognizes human chorionic gonadotropin and its free beta subunit
Description	Monoclonal mouse antibody, cultured <i>in vitro</i> under conditions free from animal-derived components
Product code	100004
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
Analyte description	Human chorionic gonadotropin (hCG) is a glycoprotein hormone produced in pregnancy by the developing embryo soon after conception and later by the syncytiotrophoblast (part of the placenta). Its role is to prevent the disintegration of the corpus luteum of the ovary and thereby maintain progesterone production that is critical for a pregnancy in humans. Early pregnancy testing, in general, is based on the detection of hCG. hCG is produced also by some tumors, but it is not known whether this production is a contributing cause or an effect of tumorigenesis.

PARAMETERS TESTED ON EACH LOT

Product appearance	Liquid, may turn slightly opaque during storage
Product concentration	1.0 mg/ml (+/- 10 %)
Immunoreactivity	80-120 % compared to the reference sample in an FIA test
IEF Profile	6.5 - 7.6
Purity	≥ 95 %

PARAMETERS DETERMINED DURING PRODUCT DEVELOPMENT

Subclass	IgG ₁
Association rate constant	hCG: 2.0×10^6 1/Ms and hCGβ: 5.0×10^5 1/Ms
Dissociation rate constant	hCG: 3.7×10^{-5} 1/s and hCGβ: 1.2×10^{-4} 1/s
Affinity constant	hCG: $K_A = 5.3 \times 10^{10}$ 1/M; $K_D = 1.9 \times 10^{-11}$ M (= 0.02 nM) hCGβ: $K_A = 4.3 \times 10^9$ 1/M; $K_D = 2.3 \times 10^{-10}$ M (= 0.23 nM)
Determination method	SPR analysis (ProteOn XPR36)
Determination antigen	hCG, Scripps (Cat C0714, Lot 2430801); hCGβ, Scripps (Cat C0914, Lot 2310001)

Cross-reactivities	LH ($K_D = 17 \text{ nM}$) No cross-reactivity with hCG α , FSH, or TSH	
Epitope	Beta-2 as described in Berger et al. (2013). The antibody recognizes both intact hCG and free β subunit.	
Pair recommendations	CAPTURE ANTIBODY 5004 5009, 5011, 5014 5004 5012 (free β)	DETECTION ANTIBODY 5009, 5011, 5014 5004 5501, 5503, 6601 (α subunit) 5004
	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	TEMPERATURE, TIME -70 °C, 21 days -20 °C, 21 days +4 °C, 21 days +25 °C, 21 days +35 °C, 21 days +45 °C, 7 days	RESULT N/D N/D N/D N/D N/D 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	-	
References	Berger, P., Paus, E., Hemken, P.M., Sturgeon, C., Stewart, W.W., Skinner, J.P., Harwick, L.C., Saldana, S.C., Ramsay, C.S., Rupprecht, K.R., Olsen, K.H., Bidart, J.M. and Stenman, U.H. (2013) Candidate epitopes for measurement of hCG and related molecules: the second ISOBM TD-7 workshop. Tumor Biol., 34: 4033-4057.	