

## PRODUCT SPECIFICATIONS

<b>Name</b>	Anti-hCG beta 5011 SPRN-1
<b>Specificity</b>	Antibody recognizes human chorionic gonadotropin and its free beta subunit
<b>Description</b>	Monoclonal mouse antibody, cultured <i>in vitro</i> under conditions free from animal-derived components
<b>Product code</b>	100009
<b>Product buffer solution</b>	29 mM citrate, 142 mM phosphate, pH 6.5, 0.9 % NaCl, 0.095 % NaN <sub>3</sub> as a preservative
<b>Shelf life and storage</b>	24 months from manufacturing at 2–8 °C
<b>Analyte description</b>	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

<b>Product appearance</b>	Liquid, may turn slightly opaque during storage
<b>Product concentration</b>	1.0 mg/ml (+/- 10 %)
<b>Immunoreactivity</b>	80–120 % compared to the reference sample in an FIA test
<b>IEF Profile</b>	5.5 - 7.0
<b>Purity</b>	≥ 95 %

## PARAMETERS DETERMINED DURING PRODUCT DEVELOPMENT

<b>Subclass</b>	IgG <sub>1</sub>
<b>Association rate constant</b>	hCG: $2.4 \times 10^6$ 1/Ms and hCGβ: $1.9 \times 10^6$ 1/Ms
<b>Dissociation rate constant</b>	hCG: $4.4 \times 10^{-4}$ 1/s and hCGβ: $1.1 \times 10^{-3}$ 1/s
<b>Affinity constant</b>	hCG: $K_A = 5.5 \times 10^9$ 1/M; $K_D = 1.8 \times 10^{-10}$ M (= 0.18 nM) hCGβ: $K_A = 1.8 \times 10^9$ 1/M; $K_D = 5.7 \times 10^{-10}$ M (= 0.57 nM)
<b>Determination method</b>	SPR analysis (ProteOn XPR36)
<b>Determination antigen</b>	hCG, Scripps (Cat C0714, Lot 2430801); hCGβ, Scripps (Cat C0914, Lot 2310001)

**Cross-reactivities**

Does not cross-react with LH

**Epitope**

The antibody recognizes both intact hCG and free  $\beta$  subunit. It does not recognize hCG $\beta$  core fragment, as described in Berger et al (2013).

**Pair recommendations**
**CAPTURE ANTIBODY**

5011  
5014, 5004  
5011

**DETECTION ANTIBODY**

5004, 5006, 5008, 5014, 5016  
5011  
6601 ( $\alpha$  subunit)

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**

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**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.

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