Medix Biochemica

**Product specification**
**ANTIBODY**
2023-03-28

# Anti-hCG 5014 SPTN-5

## Product overview

| | |
|---|---|
| **Catalog number** | 100011 |
| **Specificity** | Antibody recognizes human chorionic gonadotropin and its free beta subunit |
| **Description** | Monoclonal mouse antibody, cultured *in vitro* under conditions free from animal-derived components. |
| **Product buffer solution** | 50 mM Na-citrate, pH 6.0, 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** | 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** | 5.0 mg/ml (+/- 10 %) |
| **Immunoreactivity** | 80–120 % compared to the reference sample in an FIA test |
| **IEF Profile** | 6.4–7.5 |
| **Purity** | ≥ 95 % |

## Kinetic parameters

| | |
|---|---|
| **Association rate constant** | hCG: 2.5 x $10^5$ 1/Ms and hCGβ: 2.8 x $10^5$ 1/Ms |
| **Dissociation rate constant** | hCG: 1.5 x $10^{-4}$ 1/s and hCGβ: 2.8 x $10^{-4}$ 1/s |
| **Affinity constant** | hCG: $K_A$ = 1.6 x $10^9$ 1/M; $K_D$ = 6.1 x $10^{-10}$ M (= 0.61 nM)<br>hCGβ: $K_A$ = 9.9 x $10^8$ 1/M; $K_D$ = 1.0 x $10^{-9}$ M (= 1.0 nM) |
| **Determination method** | SPR analysis (ProteOn XPR36) |
| **Determination antigen** | hCG, Scripps (Cat C0714, Lot 2430801); hCGβ, Scripps (Cat C0914, Lot 2310001) |

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**Cross-reactivities**

Does not recognize hCGα, LH, FSH, or TSH

**Epitope**

Beta-9 as described in Berger et al. (2013). The antibody recognizes both intact hCG and free β subunit. It does not recognize hCGβ core fragment.

**Pair recommendations**

| | | DETECTION | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | hCG beta | | | | | | | | alpha subunit | | |
| | | 5004 | 5006 | 5008 | 5009 | 5011 | 5012 free β | 5014 | 5016 | 5501 | 5503 | 6601 |
| CAPTURE | 5004 | - | - | - | + | + | - | + | - | + | + | + |
| | 5006 | - | - | - | - | - | - | + | - | + | + | + |
| | 5008 | - | - | - | + | - | - | + | - | + | + | + |
| | 5009 | + | + | + | - | - | - | + | + | - | - | + |
| | 5011 | + | + | + | - | - | - | + | + | - | - | + |
| | 5012 free β | + | + | + | - | - | - | + | + | - | - | - |
| | 5014 | + | + | + | + | + | - | - | + | + | + | + |
| | 5016 | - | - | - | - | - | - | + | - | + | + | + |

Following pairs are especially recommended for free hCG beta assays:
CLIA: 5012 (capture) – 5004 (detection) and 5012 – 5008

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 hCG antigens, Lee Biosolutions 189-10 and 189-11
Native β-hCG antigen, Lee Biosolutions 325-11

**Product stability**

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

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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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