



## HISTOPRIME<sup>®</sup>

**CatNo E009**

### **β-HCG**

Lot: See Label

Storage: +2 to +8 °C

Exp. Date: See Label

### **Monoclonal Antibody against human Chorionic Gonadotropin (β-subunit)**

#### **Specificity**

During pregnancy, trophoblasts produce human chorionic gonadotropin (HCG), which is essential for maintaining pregnancy. It is similar to LH in its molecular structure and biological activity. HCG has a molecular weight of about 28000 Da and consists of two subunits: an  $\alpha$ -chain and a  $\beta$ -chain. LH, FSH and TSH also have such an  $\alpha$ -chain. The  $\beta$ -chain, however, has a different amino acid sequence and is responsible for the specificity of action of the hormone. For this reason, immunological detection of the hormone takes place via the  $\beta$ -chain. HCG is found in high concentrations in both the blood and urine of pregnant women.

HCG is secreted by trophoblastic neoplasms and chorionic carcinomas, as are, in part, the free  $\beta$ -chains. However,  $\beta$ -HCG positive can also occur in non-trophoblastic tumors (e.g. leiomyosarcomas in testis or small intestine). Thus, to detect such tumors, the use of an antibody that specifically detects the  $\beta$ -chains is useful.

#### **Contents**

Reagents sufficient for about 60-120 tissue sections  
1 dropper bottle **HISTOPRIME<sup>®</sup> β-HCG** (Bottle, 6 ml)

#### **Application**

E009 detects the  $\beta$ -chain of HCG in particular, but is also suitable for the detection of the entire total molecule. The antibody does not bind to the alpha-chain. Cross-reaction with LH, TSH and FSH can be neglected in immunohistochemistry, as this was < 0.8% in the radioimmunoassay.

E009 can be used to detect normal trophoblasts as well as HCG-secreting cells in trophoblastic neoplasms and chorionic carcinomas and in metastases derived from such tissues. HCG may also be expressed by aggressively growing carcinomas of the gastrointestinal and respiratory tracts and the breast. It is also present in chorionic carcinomas in the male testis and in germ cell tumors in the brain tissue/ cerebrospinal fluid of patients.

#### **Fusion Partners**

Balb/c mice were immunized with human chorionic gonadotropin and their splenocytes were fused with mouse myeloma cells P3X63-Ag8.653. Beta-HCG specific antibody producing cell lines were used for ascites recovery. The immunoglobulin fraction was purified column chromatographically via DEAE.

E009-220109-1/2





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### Characterization

<b>Antigen</b>	human chorionic gonadotropin (HCG)
<b>Specificity</b>	HCG, $\beta$ -HCG
<b>Abnormal Tissues</b>	Chorionic carcinomas, trophoblastic neoplasms, germ cell tumors, choriocarcinomatous differentiations of colon, lung, and breast
<b>Clone</b>	SC1
<b>Isotype</b>	Mouse IgG1
<b>Pretreatment</b>	Formaldehyde-fixed tissues do not need to be pretreated with proteolytic enzymes
<b>Incubation Period</b>	1 hour by room temperature
<b>Control Tissue</b>	Placenta
<b>Application</b>	Ready-to-use in PBS, BSA, NaN <sub>3</sub> (0.09%) pH 7.4(*) suitable on cryostat sections and on formalin-fixed, paraffin-embedded tissue sections.
<b>Recommended Secondary Reagents</b>	<b>Alkaline Phosphatase</b> Vectastain <sup>®</sup> ABC Mouse IgG (Vector CatNo AK-5002) and Substrate-Kit e.g. Vector <sup>®</sup> Red (Vector CatNo SK-5100). <b>Peroxidase</b> Vectastain <sup>®</sup> ABC-Elite Mouse IgG (Vector CatNo PK-6102) and Peroxidase Substrate-Kit e.g. DAB (LINARIS CatNo E108) or HistoGreen (LINARIS CatNo E109).

### References

1. Vaitukaitis J.L., Braunstein G.D., Ross G.T.: A radioimmunoassay which specifically measures human chorionic gonadotropin in the presence of human luteinizing hormone. Am.J.Obstet.Gynecol. 113, 751ff (1972)
2. Boronow R.C.: Gestational trophoblastic disease. In: Rutledge F., Boronow R.C., and Wharton J.T. eds. Gynecologic Oncology. New York, John Wiley and Sons (1976)
3. Waldmann T.A., Javadpour N., Glatstein E.: Testicular germ-cell neoplasms: Recent Advances in Diagnosis and Therapy. NIH Conference. Ann.Med. 90, 373 (1979)
4. Seidl Ch., Lippert Ch., Grouls V. und Jellinghaus W.: Leiomyosarkom des Samenstranges mit paraneoplastischer  $\beta$ -HCG Produktion. Pathologie 19, 146-150 (1998)

**Differential identification is aided by the results from a panel of antibodies. Interpretation must be made within the context of the patient's clinical history and other diagnostics tests by a qualified pathologist.**

**(\*)Note**                      **E009 contains Sodium Azide; take adequate precautions!**

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**For Research use only. Not for use in diagnostic procedure**

