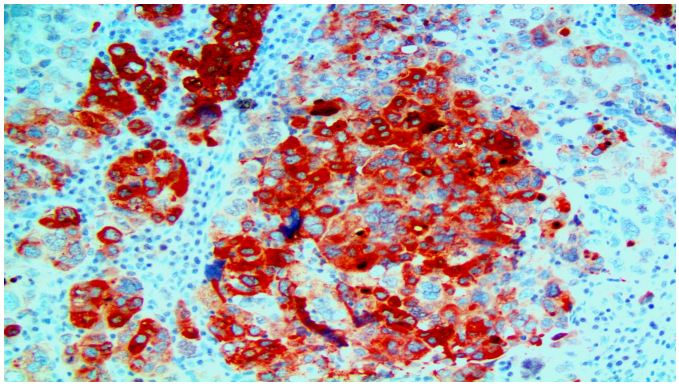
HE4

Clone: EP370
Rabbit Monoclonal

CE IVD



Inset: IHC of HE4 on a FFPE Ovarian Cancer Tissue

Antibody Type	Rabbit Monoclonal	**Clone**	EP370
Isotype	IgG	**Reactivity**	Paraffin, Frozen
Localization	Cytoplasmic, Nuclear	**Species Reactivity**	Human
Control	Thyroid, Salivary Gland, Breast, Ovarian Carcinoma		
Application	Ovarian Cancer, Gall Bladder & Pancreatic Cancer, Lung Cancer		

Presentation
Anti-HE4 is a Rabbit Monoclonal antibody derived from cell culture supernatant that is concentrated, dialyzed, filter sterilized and diluted in buffer pH 7.5, containing BSA and sodium azide as a preservative.

Catalog No.	*Presentation*	*Dilution*	*Volume/Qty*
BSB 3349	Predilute	Ready-to-Use	3.0 mL
BSB 3350	Predilute	Ready-to-Use	7.0 mL
BSB 3351	Predilute	Ready-to-Use	15.0 mL
BSB 3352	Concentrate	1:50-1:200	0.1 mL
BSB 3353	Concentrate	1:50-1:200	0.5 mL
BSB 3354	Concentrate	1:50-1:200	1.0 mL

Control Slides Available

Catalog No.	*Quantity*
BSB-9203-CS	5 slides

Storage Store at 2-8°C (Control Slides: Store at 20-25°C)

Intended Use
For In Vitro Diagnostic Use.

This antibody is intended for use in Immunohistochemical applications on formalin-fixed paraffin-embedded tissues (FFPE), frozen tissue sections and cell preparations. Interpretation of results should be performed by a qualified medical professional.

Immunogen
Synthetic peptide corresponding to residues of human HE4 protein.

Summary and Explanation
Human epididymis protein 4 (HE4), also known as WAP four-disulfide core domain protein 2, is a protein that in humans is encoded by the WFDC2 gene. This gene encodes a protein that is a member of the WFDC domain family. The WFDC domain, or WAP Signature motif, functions as a protease inhibitor in many family members. The encoded protein is a small secretory protein, which may be involved in sperm maturation. HE4 gene expression has been found the highest in normal human trachea and salivary gland, and to a lesser extent, lung, prostate, pituitary gland, thyroid, and kidney. HE4 immunoreactivity has also been found in normal glandular epithelium of the female genital tract and breast, the epididymis and vas deferens, respiratory epithelium, distal renal tubules, colonic mucosa, and salivary glands which is consistent with the HE4 gene expression.

HE4 is a recognized biomarker in ovarian and endometrial cancer and over-expressed in pancreatic adenocarcinoma. In a series of 175 human adult tumors, gene expression was found to be the highest in ovarian serous carcinomas. However, adenocarcinomas of the lung, and occasional breast, transitional cell and pancreatic carcinomas had moderate or high levels of HE4 expression. IHC studies have shown that HE4 is significantly higher expressed in human pancreatic carcinoma tissues than in both normal and adjacent non-tumoral pancreatic tissues, and the staining intensity is inversely correlated with the clinical stage. HE4 is also highly expressed in early stage pancreatic adenocarcinoma.

Precautions
1. For professional users only. Results should be interpreted by a qualified medical professional.
2. This product contains <0.1% sodium azide (NaN_3) as a preservative. Ensure proper handling procedures are used with this reagent.
3. Always wear personal protective equipment such as a laboratory coat, goggles, and gloves when handling reagents.
4. Dispose of unused solution with copious amounts of water.
5. Do not ingest reagent. If reagent is ingested, seek medical advice immediately.
6. Avoid contact with eyes. If contact occurs, flush with large quantities of water.
7. Follow safety precautions of the heating device used for epitope retrieval (TintoRetriever Pressure Cooker or similar).
8. For additional safety information refer to Safety Data Sheet for this product.
9. For complete recommendations for handling biological specimens, please refer to the CDC document, "Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories" (see References in this document).

Stability
This product is stable up to the expiration date on the product label.
Do not use after expiration date listed on package label. Temperature fluctuations should be avoided. Store appropriately when not in use and avoid prolonged exposure to room temperature conditions.

Specimen Preparation

Paraffin sections: The antibody can be used on formalin-fixed paraffin-embedded (FFPE) tissue sections. Ensure tissue undergoes appropriate fixation for best results. Pre-treatment of tissues with heat-induced epitope retrieval (HIER) is recommended using Bio SB ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023), ImmunoDNA Retriever with EDTA (BSB 0030-BSB 0033), or ImmunoDNA Digestor (BSB 0108-0112). See reverse side for complete protocol. Tissue should remain hydrated via use of Bio SB Immuno/DNA Washer solutions (BSB 0029 & BSB 0042).

Frozen sections and cell preparations: The antibody can be used on acetone-fixed frozen sections and acetone-fixed cell preparations.

IHC Protocol

1. Cut and mount 3-5 micron formalin-fixed paraffin-embedded tissues on positively charged slides such as Bio SB Hydrophilic Plus Slides (BSB 7028).
2. Air dry for 2 hours at 58° C.
3. Deparaffinize, dehydrate, and rehydrate tissues.
4. Subject tissues to heat induced epitope retrieval (HIER) using a suitable retrieval solution such as ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023) or EDTA (BSB 0030-BSB 0033).
5. Any of three heating methods may be used:

a. TintoRetriever Pressure Cooker or Equivalent

Place tissues/slides in a staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA and place on trivet in the pressure cooker. Add 1-2 inches of distilled water to the pressure cooker and turn heat to high. Incubate for 15 minutes. Open and immediately transfer slides to room temperature.

b. TintoRetriever PT Module or Water Bath Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA at 95°-99° C. Incubate for 30-60 minutes.

c. Conventional Steamer Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA in a steamer, cover and steam for 30-60 minutes.

6. After heat treatment, transfer slides in ImmunoDNA Retriever with Citrate or EDTA to room temperature and let stand for 15-20 minutes.
7. For manual IHC, perform antibody incubation at ambient temperature. For automated IHC methods, perform antibody incubation according to instrument manufacturer's instructions.
8. Wash slides with ImmunoDNA washer or DI water.
9. Continue IHC protocol. Wash slides between each step with ImmunoDNA washer solution.

Abbreviated Immunohistochemical Protocol

Step	ImmunoDetector AP/HRP	PolyDetector AP/HRP	PolyDetector Plus HRP
Peroxidase/AP Blocker	5 min.	5 min.	5 min
Primary Antibody	30-60 min.	30-60 min.	30-60 min.
1st Step Detection	10 min.	30-45 min.	15 min.
2nd Step Detection	10 min.	Not Applicable	15 min.
Substrate- Chromogen	5-10 min.	5-10 min.	5-10 min.
Counterstain / Coverslip	Varies	Varies	Varies

Mounting Protocols

For detailed instructions using biodegradable permanent mounting media such as XyGreen PermaMounter (BSB 0169-0174) or organic solvent based resin such as PermaMounter (BSB 0094-0097), refer to PI0174 or PI0097.

Product Limitations

Due to inherent variability present in immunohistochemical procedures (including fixation time of tissues, dilution factor of antibody, retrieval method utilized, and incubation time), optimal performance should be established through the use of positive and negative controls. Results should be interpreted by a qualified medical professional.

References

1. Hellström I, et al. The HE4 (WFDC2) Protein Is a Biomarker for Ovarian Carcinoma. Cancer Research. 2003; 63 (13): 3695–3700.
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3. Schummer M, et al. Comparative hybridization of an array of 21,500 ovarian cDNAs for the discovery of genes overexpressed in ovarian carcinomas. Gene. 1999; 238 (2): 375–85.
4. Molina R, et al. HE4 a novel tumour marker for ovarian cancer: Comparison with CA 125 and ROMA algorithm in patients with gynaecological diseases. Tumor Biology. 2011; 32 (6): 1087–95.
5. Mary T Galgano, et al. Comprehensive analysis of HE4 expression in normal and malignant human tissues. Modern Pathology. 2006; 19, 847–853.
6. Tianhe Huang, et al. Expression and Diagnostic Value of HE4 in Pancreatic Adenocarcinoma. Int J Mol Sci. 2015 Feb; 16(2): 2956–2970.
7. U.S. Department of Health and Human Services: Centers for Disease Control and Prevention. Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories. Supplement / Vol. 61, January 6, 2012. https://www.cdc.gov/mmwr/pdf/other/su6101.pdf

Symbol Key / Légende des symboles/Erläuterung der Symbole

EC REP QAdvis EAR AB, Ideon Science Park, Scheelevägen 17, SE-223 70 Lund, Sweden	Storage Temperature / Limites de température / Zulässiger Temperaturbereich	Manufacturer / Fabricant / Hersteller	REF Catalog Number / Référence du catalogue / Bestellnummer
IVD In Vitro Diagnostic Medical Device / Dispositif médical de diagnostic in vitro / In-Vitro-Diagnostikum	Read Instructions for Use / Consulter les instructions d'utilisation / Gebrauchsanweisung beachten	Expiration Date / Utiliser jusque / Verwendbar bis	LOT Lot Number / Code du lot / Chargenbezeichnung

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