SANTA CRUZ BIOTECHNOLOGY, INC.

HE4 (3F9): sc-293473

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

HE4 (whey acidic protein (WAP)-type four-disulfide core-2, WFDC2) is a small secretory protein that may influence sperm maturation. HE4 gene expression is high in pulmonary epithelial cells and in some ovarian cancers. HE4 protein has a WAP motif that contains eight cysteines forming four disulfide bonds at the core of the protein. The WAP motif functions as a protease inhibitor in many of the family members that contain them.

REFERENCES

1. Kirchhoff, C., et al. 1991. A major human epididymis-specific cDNA encodes a protein with sequence homology to extracellular proteinase inhibitors. Biol. Reprod. 45: 350-357.
2. Bingle, L., et al. 2002. The putative ovarian tumour marker gene HE4 (WFDC2), is expressed in normal tissues and undergoes complex alternative splicing to yield multiple protein isoforms. Oncogene 21: 2768-2773.
3. Hellstrom, I., et al. 2003. The HE4 (WFDC2) protein is a biomarker for ovarian carcinoma. Cancer Res. 63: 3695-3700.
4. Hagiwara, K., et al. 2003. Mouse SWAM1 and SWAM2 are antibacterial proteins composed of a single whey acidic protein motif. J. Immunol. 170: 1973-1979.
5. Urban, N., et al. 2003. Ovarian cancer screening. Hematol. Oncol. Clin. North Am. 17: 989-1005.
6. Berry, N.B., et al. 2004. Transcriptional targeting in ovarian cancer cells using the human epididymis protein 4 promoter. Gynecol. Oncol. 92: 896-904.
7. LocusLink Report (LocusID: 10406). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: WFDC2 (human) mapping to 20q13.12.

SOURCE

HE4 (3F9) is a mouse monoclonal antibody raised against amino acids 31-124 representing full length HE4 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HE4 (3F9) is recommended for detection of HE4 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

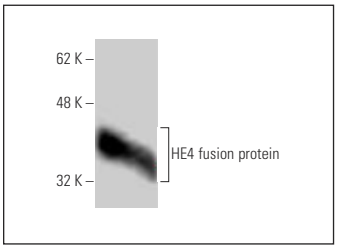
Suitable for use as control antibody for HE4 siRNA (h): sc-43826, HE4 shRNA Plasmid (h): sc-43826-SH and HE4 shRNA (h) Lentiviral Particles: sc-43826-V.

Molecular Weight of HE4: 13 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



HE4 (3F9): sc-293473. Western blot analysis of human recombinant HE4 fusion protein.

SELECT PRODUCT CITATIONS

1. James, N.E., et al. 2018. HE4 suppresses the expression of osteopontin in mononuclear cells and compromises their cytotoxicity against ovarian cancer cells. Clin. Exp. Immunol. 193: 327-340.
2. James, N.E., et al. 2019. Human epididymis secretory protein 4 (HE4) compromises cytotoxic mononuclear cells via inducing dual specificity phosphatase 6. Front. Pharmacol. 10: 216.
3. James, N.E., et al. 2019. Inhibition of DUSP6 sensitizes ovarian cancer cells to chemotherapeutic agents via regulation of ERK signaling response genes. Oncotarget 10: 3315-3327.
4. James, N.E., et al. 2020. The biomarker HE4 (WFDC2) promotes a pro-angiogenic and immunosuppressive tumor microenvironment via regulation of STAT3 target genes. Sci. Rep. 10: 8558.
5. Zhang, T., et al. 2024. Human epididymis protein 4, a novel potential biomarker for diagnostic and prognosis monitoring of lung cancer. Clin. Respir. J. 18: e13774.
6. Zhang, Y., et al. 2024. Knockdown of HE4 suppresses tumor growth and invasiveness in lung adenocarcinoma through regulation of EGFR signaling. Oncol. Res. 32: 1119-1128.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.