SANTA CRUZ BIOTECHNOLOGY, INC.

B7-H4 (G-18): sc-68254

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

T cell activation and immune function are regulated by the innate immune system through positive and negative costimulatory proteins. One such protein, B7-H4 (B7-homolog 4, also designated VTCN1), belongs to the B7 immunoglobulin superfamily of ligand-lymphocyte interacting proteins. Expressed primarily on the membrane of lymphoid cells, B7-H4 is an immunoinhibitory protein that interacts with receptors on the surface of T lymphocytes, thus mediating cellular and humoral immune responses. Overexpression of the B7-H4 protein is associated with certain malignancies, including ovarian and breast cancer, as its interaction with T cells supresses tumor-associated immunity. Current research suggests that, similar to Mucin 16 (CA125), B7-H4 may be a useful biomarker for the early detection of ovarian cancer.

REFERENCES

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2. Salceda, S., et al. 2005. The immunomodulatory protein B7-H4 is overexpressed in breast and ovarian cancers and promotes epithelial cell transformation. Exp. Cell Res. 306: 128-141.
3. Collins, M., et al. 2005. The B7 family of immune-regulatory ligands. Genome Biol. 6: 223.
4. Simon, I., et al. 2006. B7-H4 is a novel membrane-bound protein and a candidate serum and tissue biomarker for ovarian cancer. Cancer Res. 66: 1570-1575.
5. Sun, Y., et al. 2006. B7-H3 and B7-H4 expression in non-small-cell lung cancer. Lung Cancer 53: 143-151.
6. Krambeck, A.E., et al. 2006. B7-H4 expression in renal cell carcinoma and tumor vasculature: associations with cancer progression and survival. Proc. Natl. Acad. Sci. USA 103: 10391-10396.
7. Ou, D., et al. 2006. Suppression of human T cell responses to β cells by activation of B7-H4 pathway. Cell Transplant. 15: 399-410.
8. Flies, D.B., et al. 2007. The new B7s: playing a pivotal role in tumor immunity. J. Immunother. 30: 251-260.
9. Miyatake, T., et al. 2007. B7-H4 (DD-O110) is overexpressed in high risk uterine endometrioid adenocarcinomas and inversely correlated with tumor T cell infiltration. Gynecol. Oncol. 106: 119-127.

CHROMOSOMAL LOCATION

Genetic locus: VTCN1 (human) mapping to 1p13.1; Vtcn1 (mouse) mapping to 3 F2.2.

SOURCE

B7-H4 (G-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of B7-H4 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-68254 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

B7-H4 (G-18) is recommended for detection of B7-H4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

B7-H4 (G-18) is also recommended for detection of B7-H4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for B7-H4 siRNA (h): sc-72384, B7-H4 siRNA (m): sc-72385, B7-H4 shRNA Plasmid (h): sc-72384-SH, B7-H4 shRNA Plasmid (m): sc-72385-SH, B7-H4 shRNA (h) Lentiviral Particles: sc-72384-V and B7-H4 shRNA (m) Lentiviral Particles: sc-72385-V.

Molecular Weight of B7-H4: 35 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.