

DESCRIPTION

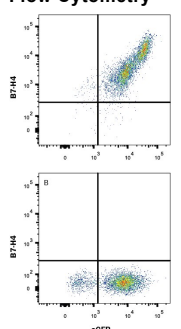
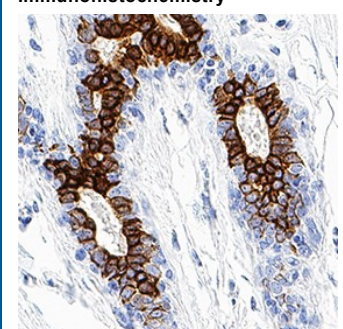
Species Reactivity	Human
Specificity	Detects human B7-H4 in direct ELISAs.
Source	Monoclonal Mouse IgG _{2A} Clone # 973816
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human B7-H4 Phe29-Ala258 Accession # Q7Z7D3
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the [Technical Information](#) section on our website.

	Recommended Concentration	Sample
Flow Cytometry	0.25 µg/10 ⁶ cells	See Below
Immunohistochemistry	1-25 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA

<p>Flow Cytometry</p>  <p>Detection of B7-H4 in HEK293 Human Cell Line Transfected with Human B7-H4 and eGFP by Flow Cytometry. HEK293 human embryonic kidney cell line transfected with either (A) human B7-H4 or (B) irrelevant transfectants and eGFP were stained with Mouse Anti-Human B7-H4 Monoclonal Antibody (Catalog # MAB65761) followed by Allophycocyanin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0101B). View our protocol for Staining Membrane-associated Proteins.</p>	<p>Immunohistochemistry</p>  <p>B7-H4 in Human Breast. B7-H4 was detected in immersion fixed paraffin-embedded sections of human breast using Mouse Anti-Human B7-H4 Monoclonal Antibody (Catalog # MAB65761) at 1.7 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to plasma membrane in epithelial cells. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.</p>
--	---

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

B7-H4, also known as VTCN1, B7x and B7S1, is a 50-80 kDa glycosylated member of the BTN/MOG family of immunomodulatory protein (1, 2). Mature human B7-H4 consists of a 235 amino acid (aa) extracellular domain (ECD) with one Ig-like V-set domain and one Ig-like C2-set domain, a 21 aa transmembrane segment, and a 2 aa cytoplasmic tail (3-5). Within the ECD, human B7-H4 shares 90% aa sequence identity with mouse and rat B7-H4. It shares 22%-28% aa sequence identity with human B7-1, B7-2, B7-H1, B7-H2, B7-H3, and PD-L2. Alternate splicing of human B7-H4 generates an additional isoform that lacks the first Ig-like domain. B7-H4 is expressed on the surface of activated lymphocytes, macrophages, monocytes, dendritic cells, epithelial cells, and bone marrow-derived mesenchymal stem cells (4-8). Following binding to activated T cells, B7-H4 serves as a co-inhibitor of the T cell response. This is accomplished by reverse signaling that can induce either cell cycle arrest, or apoptosis in B7-H4 expressing cells (3-5, 9, 10). B7-H4 is up-regulated in several carcinomas in correlation with tumor progression and metastasis (2, 7, 11, 12). A soluble form of B7-H4 is elevated in the serum of ovarian cancer, renal cell carcinoma, and rheumatoid arthritis patients, also in correlation with advanced disease status (13-15). Soluble B7-H4 functions as a decoy molecule that blocks the inhibitory influence of B7-H4 on immune activation (15). Despite evidence for the involvement of B7-H4 in immune regulation, mice deficient in its expression do not show significant immune deficiencies, suggesting compensation by other molecules *in vivo* (16).

References:

1. Yi, K.H. and L. Chen (2009) *Immunol. Rev.* **229**:145.
2. Salceda, S. *et al.* (2005) *Exp. Cell Res.* **306**:128.
3. Zang, X. *et al.* (2003) *Proc. Natl. Acad. Sci.* **100**:10388.
4. Prasad, V.R. *et al.* (2003) *Immunity* **18**:863.
5. Sica, G.L. *et al.* (2003) *Immunity* **18**:849.
6. Kryczek, I. *et al.* (2006) *J. Exp. Med.* **203**:871.
7. Tringler, B. *et al.* (2005) *Clin. Cancer Res.* **11**:1842.
8. Xue, Q. *et al.* (2010) *Stem Cells Dev.* **19**:27.
9. Song, H. *et al.* (2008) *Cancer Lett.* **266**:227.
10. Park, G.B. *et al.* (2009) *Immunology* **128**:360.
11. Zang, X. *et al.* (2007) *Proc. Natl. Acad. Sci.* **104**:19458.
12. Krambeck, A.E. *et al.* (2006) *Proc. Natl. Acad. Sci.* **103**:10391.
13. Simon, I. *et al.* (2006) *Cancer Res.* **66**:1570.
14. Thompson, R.H. *et al.* (2008) *Cancer Res.* **68**:6054.
15. Azuma, T. *et al.* (2009) *PLoS Med.* **6**:e1000166.
16. Suh, W.-K. *et al.* (2006) *Mol. Cell. Biol.* **26**:6403.