

#### DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Stains human B7-H4 transfectants but not irrelevant transfectants in flow cytometry.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 935317
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	NS0 mouse myeloma cell line transfected with human B7-H4 Phe29-Ser258 Accession # Q727D3
<b>Conjugate</b>	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

#### 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
<b>Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	HEK293 human embryonic kidney cell line transfected with human B7-H4 and eGFP

#### PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

#### 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.

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