

PRODUCT INFORMATION



B7-H4 (human, recombinant)

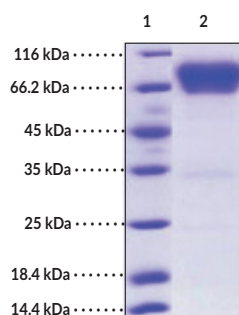
Item No. 31823

Overview and Properties

Synonyms:	B7 Homolog 4, B7h.5, B7S1, B7x, Immune Costimulatory Protein B7-H4, PRO1291, V-set Domain-containing T cell Activation Inhibitor 1, VCTN1
Source:	Active recombinant C-terminal human IgG1 Fc-tagged B7-H4 expressed in HEK293 cells
Amino Acids:	29-258
Uniprot No.:	Q7Z7D3-1
Molecular Weight:	52.3 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 years
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU/μg, determined by the LAL endotoxin assay
Bioactivity:	See figures for details

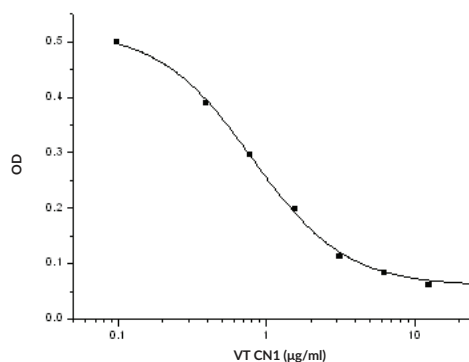
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: B7-H4

SDS-PAGE Analysis of B7-H4. This protein has a calculated molecular weight of 52.3 kDa. It has an apparent molecular weight of approximately 66 to 76 kDa by SDS-PAGE under reducing conditions due to glycosylation.



Measured by its ability to inhibit IL-2 secretion in human T lymphocytes induced by anti-CD3 antibody and anti-CD28. The ED₅₀ value for this effect is 0.7-3.5 μg/ml.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

B7-H4 is a glycoprotein linked to the cell membrane *via* glycosylphosphatidylinositol (GPI) and a member of the B7-CD28 immune checkpoint protein family.¹ It is composed of an extracellular domain containing immunoglobulin (Ig) variable (IgV) and Ig constant (IgC) domains with several cysteine residues and N-glycosylation sites.^{1,2} B7-H4 is found on T cells, B cells, natural killer (NK) cells, dendritic cells, monocytes, and tumor cells, and B7-H4 mRNA is expressed in non-lymphoid tissues such as the lungs, testis, and pancreas.^{1,3,4} The expression of B7-H4 is induced by inflammatory mediators and cytokines, and it acts as a co-stimulatory molecule to promote regulatory T cell development and inhibit T cell activation, cell cycle progression, proliferation, and cytokine production.^{1,3} *VTCN1* is overexpressed in a variety of cancers, including breast and ovarian cancers, and the levels of expression correlate with lymph node metastasis, cancer progression, and mortality.^{4,5} siRNA knockdown of *VTCN1*, the gene encoding B7-H4, decreases proliferation and migration of pancreatic cancer cells *in vitro*.⁵ Knockout of *VTCN1* in mice reduces lung metastasis and increases survival in a metastatic breast cancer mouse xenograft model. Cayman's B7-H4 (human, recombinant) protein can be used for cell-based assay applications. This protein is a disulfide-linked homodimer. The reduced monomer, comprised of B7-H4 (amino acids 29-258) fused to human IgG1 Fc at its C-terminus, consists of 471 amino acids and has a calculated molecular weight of 52.3 kDa. As a result of glycosylation, the monomer migrates at approximately 66 to 76 kDa by SDS-PAGE under reducing conditions.

References

1. Collins, M., Ling, V., and Carreno, B.M. The B7 family of immune-regulatory ligands. *Genome Biol.* **6**(6), 223 (2005).
2. Janakiram, M., Shah, U.A., Liu, W., *et al.* The third group of the B7-CD28 immune checkpoint family: HHLA2, TMIGD2, B7x, and B7-H3. *Immunol. Rev.* **276**(1), 26-39 (2017).
3. Zang, X., Loke, P., Kim, J., *et al.* B7x: A widely expressed B7 family member that inhibits T cell activation. *Proc. Natl. Acad. Sci. USA* **100**(18), 10388-10392 (2003).
4. Fauci, J.M., Straughn, J.M., Jr., Ferrone, S., *et al.* A review of B7-H3 and B7-H4 immune molecules and their role in ovarian cancer. *Gynecol. Oncol.* **127**(2), 420-425 (2012).
5. Wang, L., Heng, X., Lu, Y., *et al.* Could B7-H4 serve as a target to activate anti-cancer immunity? *Int. Immunopharmacol.* **38**, 97-103 (2016).

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