

PRODUCT INFORMATION



B7-H3/CD276 Extracellular Domain (human, recombinant)

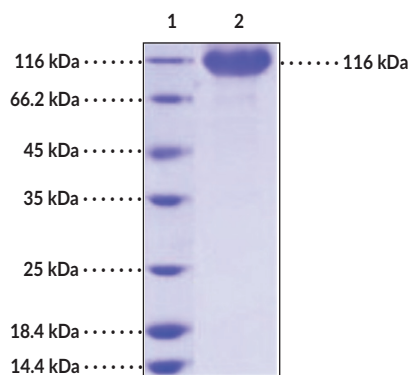
Item No. 31822

Overview and Properties

Synonyms: 4Ig-B7-H3, B7 Homolog 3, B7RP-2
Source: Recombinant C-terminal human IgG1 Fc-tagged B7-H3 expressed in HEK293 cells
Amino Acids: 27-461
Uniprot No.: Q5ZPR3
Molecular Weight: 73.4 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
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

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

Image



Lane 1: MW Markers

Lane 2: B7-H3 Extracellular Domain

SDS-PAGE Analysis of B7-H3 Extracellular Domain. This protein has a calculated molecular weight of 73.4 kDa. It has an apparent molecular weight of approximately 116 kDa by SDS-PAGE under reducing conditions due to glycosylation.

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
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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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-H3, also known as CD276, is a type I transmembrane glycoprotein and member of the B7-CD28 immune checkpoint protein family with roles in the T cell-mediated immune response.^{1,2} It is encoded by *CD276* in humans and is composed of an N-terminal signal peptide, an extracellular domain containing two identical pairs of immunoglobulin (Ig) constant (IgC) and variable (IgV) domains, a transmembrane region, and an intracellular tail. *CD276* is ubiquitously expressed, however, protein expression is post-transcriptionally regulated.² B7-H3 protein is constitutively expressed on non-immune fibroblasts, endothelial cells, and osteoblasts, and can be induced in immune cells such as dendritic cells, macrophages, natural killer (NK) cells, and T cells. It inhibits NK cell-mediated lysis, as well as induces co-inhibition of T cells, increases activation of tumor-specific cytotoxic T cells, and decreases proliferation of CD4⁺ and CD8⁺ T cells through modulation of nuclear factor of activated T cells (NFAT), NF-κB, and AP-1. Serum levels of B7-H3 are increased in patients with sepsis, as are intestinal levels in patients with graft *versus* host disease. High tumor levels of B7-H3 protein are associated with increased tumor size, poorly differentiated tumors, lymph invasion, and shorter overall survival in patients with lung and breast cancers.³ Cayman's B7-H3/CD276 Extracellular Domain (human, recombinant) protein is a disulfide-linked homodimer. The reduced monomer, comprised of B7-H3 (amino acids 1-461) fused to human IgG1 Fc at its C-terminus, consists of 673 amino acids, has a calculated molecular weight of 73.4 kDa, and a predicted N-terminus of Gly27 after signal peptide cleavage. As a result of glycosylation, the monomer migrates at approximately 116 kDa by SDS-PAGE under reducing conditions.

References

1. Li, G., Quan, Y., Che, F., *et al.* B7-H3 in tumors: friend or foe for tumor immunity? *Cancer Chemother. Pharmacol.* **81(2)**, 245-253 (2018).
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. He, L. and Li, Z. B7-H3 and its role in bone cancers. *Pathol. Res. Pract.* **215(6)**, 152420 (2019).

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