

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived cynomolgus monkey B7-H3 protein Gly27 & Leu29-Thr461, with a C-terminal 6-His tag Accession # XP_015308534
N-terminal Sequence Analysis	Gly27 & Leu29
Predicted Molecular Mass	48 kDa (Gly27) & 47 kDa (Leu29)

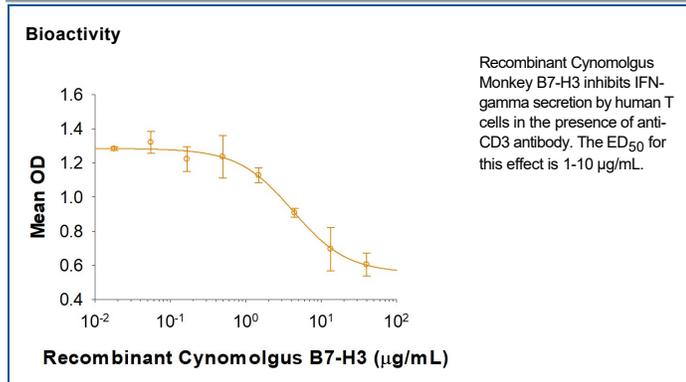
SPECIFICATIONS

SDS-PAGE	65 - 80 kDa, reducing conditions
Activity	Measured by its ability to inhibit anti-CD3 antibody induced IL-2 or IFN-gamma secretion by human T cells. The ED ₅₀ for this effect is 1-10 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA



BACKGROUND

Cynomolgus Monkey B7 homolog 3 (B7-H3), also known as CD276 antigen, is a member of the B7 family of immune proteins that provide signals for the regulation of immune responses (1-3). Other family members include B7-1, B7-2, B7-H1/PD-L1, B7-H2, and PD-L2. B7 family proteins are type I transmembrane immunoglobulin (Ig) superfamily members that contain extracellular Ig V-like and Ig C-like domains with a short cytoplasmic tail. Among the family members there is about 20-40% amino acid (aa) sequence identity. Cynomolgus monkey B7-H3 shares approximately 97% and 88% aa sequence identity with human and mouse B7-H3 respectively. B7-H3 mRNA is found in various normal tissues and in several tumor cell lines, but is not detectable in peripheral blood mononuclear cells (PBMCs). Inflammatory cytokines, such as IFN γ , and a combination of phorbol myristate acetate (PMA) and ionomycin induce expression of B7-H3 protein on dendritic cells (DCs) and monocytes (4). The receptor(s) for B7-H3 remains unknown. Both murine and human B7-H3 fusion proteins fail to bind to resting T cells, but can recognize activated T cells which stimulated with PHA or ConA, indicating that B7-H3 receptors are induced upon T cell activation (5). B7-H3 was reported to act as a co-stimulatory regulator to enhance the proliferation of both CD4⁺ and CD8⁺ T cells, the induction of cytotoxic T cells, and IFN- γ production in the presence of TCR signaling (1). B7-H3 was also reported to play an inhibitory role on T-cell activation. The inhibition may govern through nuclear factor of activated T cells (NFAT), NF- κ B, and AP-1 factors, three major signaling pathways through which TCR regulates gene transcription, which suggesting that B7-H3 might have more than one receptor on T cells (6). B7-H3 protein expresses on a wide variety of cancers, including stomach, lung, prostate, kidney, ovary, pancreas, liver, bladder and breast. The role of B7-H3 in anti-tumor immunity is controversial, because B7-H3 has conflicting costimulatory and coinhibitory functions (7).

References:

1. Chapoval, A.I. *et al.* (2001) *Nat. Immunol.* **2**:269.
2. Sharpe, A.H. and G.J. Freeman (2002) *Nat. Rev. Immunol.* **2**:116.
3. Coyle, A. and J.Gutierrez-Ramos (2001) *Nat. Immunol.* **2**:203.
4. Kyung H. Yi and Lieping Chen. (2009) *Immunol Rev.* **229**:145.
5. Sun M, *et al.* (2002) *J Immunol.* **168**:6294.
6. Hofmeyer KA, *et al.* (2008) *Proc Natl Acad Sci USA.* **105**:10277.
7. Ni L and Dong C. (2017) *Immunol Rev.* **276**:52.