Data Sheet (Cat.No.TMPY-00827)

TargetMol

CD50 Protein, Human, Recombinant (His & hFc)

General Information

Synonyms:	CDW50;intercellular adhesion molecule 3;ICAM-3;ICAM-R;CD50
Protein Construction:	The extracellular domain (Met 1-His 485) of human ICAM3 (NP_002153.2) precursor was fused with the C-terminal polyhistidine-tagged Fc region of human IgG1 at the C-terminus. Predicted N terminal: Gln 30
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P32942
Molecular Weight:	77.2 kDa (predicted); 125-135 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	≥ 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

The protein ICAM-3, also known as CD50, is a member of the intercellular adhesion molecule (ICAM) family consisting of three members. It is a DC-SIGN ligand that is constitutively expressed on resting leukocytes and is thus an important molecule for the first immune response. ICAM-3 comprises five immunoglobulin-like domains and binds LFA-1 through its two N-terminal domains. It functions not only as an adhesion molecule but also as a

potent signaling molecule. ICAM-3 binds to LFA-1 on antigen-presenting cells (APC) stabilizing the T cell-APC interaction, facilitating signaling through the CD3/TCR complex. However, recent evidence using cultured and transformed T cells suggests ICAM-3 may also function in signaling. It has been reported that the CD50 molecule can play a role in developing functionally mature T lymphocytes and its expression increases during the maturation process of T lymphocytes. Also, the interactions of ICAM-3 and LFA-1 facilitate HIV-1- induced virological synapse formation between T cells. ICAM-3 is associated with an increase in cellular radio-resistance and cancer cell proliferation. It could be considered as a candidate for anti-cancer drug development and as a cancer diagnostic marker.

Reference

Berney SM, et al. (1999) ICAM-3 (CD50) cross-linking augments signaling in CD3-activated peripheral human T lymphocytes. J Leukoc Biol. 65(6): 867-74.

van Buul JD, et al. (2004) ICAM-3 activation modulates cell-cell contacts of human bone marrow endothelial cells. J Vasc Res. 41(1): 28-37.

Sugino H. (2005) ICAM-3, a ligand for DC-SIGN, was duplicated from ICAM-1 in mammalian evolution, but was lost in the rodent genome. FEBS Lett. 579(13): 2901-6.

Park JK, et al. (2010) ICAM-3 enhances the migratory and invasive potential of human non-small cell lung cancer cells by inducing MMP-2 and MMP-9 via Akt and CREB. Int J Oncol. 36(1): 181-92.