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APC Human OX40 (CD134) Protein (C-His)

Catalog Number:	818003, 818004
Size:	25 ug, 100 ug
Target Name:	TNFRSF4, OX40, CD134, OX40L receptor
Regulatory Status:	RUO

PRODUCT DETAILS

Application:	Flow Cytometry
Format:	Liquid, APC
Expression Host:	CHO
Species:	Human
Sources:	Recombinant Human OX40 (Lue29-Ala216) with C-terminus His-tag is expressed in CHO cell and conjugated to APC.
Accession Number:	P43489
Molecular Weight:	The protein has a predicted molecular weight of 21.7 kDa. Under DTT-reducing conditions, it migrates at approximately 40 kDa on SDS-PAGE prior to conjugation.
Affinity Tag:	C-His
Formulation:	1xPBS buffer, pH7.4, 0.09% NaN3 with a carrier protein
Endotoxin level:	Not tested
Protein Concentration:	25μg size is bottled at 0.2 mg/mL concentration. 100 μg size is bottled at lot specific concentration.
Storage and Handling:	Briefly centrifuge the vial upon receipt. An unopened vial may be stored at 2–8°C for up to six months.

BACKGROUND INFORMATION

OX40, also known as CD134 or TNFRSF4, is a co-stimulatory receptor that plays a key role in regulating T cell activation, survival, and memory formation. OX40 is not expressed on resting naïve T cells but is rapidly upregulated on CD4+ and CD8+ T cells following antigen recognition and co-stimulation. It is also expressed on regulatory T cells and, in some contexts, on innate immune cells. Through its signaling, OX40 enhances the magnitude and durability of adaptive immune responses.

Structurally, OX40 is a type I transmembrane glycoprotein and a member of the tumor necrosis factor receptor (TNFR) superfamily. Its extracellular region contains multiple cysteine-rich domains characteristic of TNFR family members, which mediate ligand binding. OX40 has a single transmembrane domain and a cytoplasmic tail that lacks intrinsic enzymatic activity but recruits TNF receptor–associated factors (TRAFs) upon activation. These adaptor proteins initiate downstream signaling pathways, including NF-κB, PI3K–AKT, and MAPK pathways, which promote T cell proliferation, survival, and cytokine production.

The primary ligand for OX40 is OX40 ligand (OX40L, also known as CD252 or TNFSF4), which is expressed on activated

antigen-presenting cells such as dendritic cells, B cells, and macrophages, as well as on endothelial cells in inflamed tissues. Engagement of OX40 by OX40L delivers a potent co-stimulatory signal that supports clonal expansion of effector T cells, enhances the generation of long-lived memory T cells, and can modulate the suppressive function of regulatory T cells.

OX40 signaling is implicated in a range of disease processes. In autoimmune and inflammatory diseases, excessive or prolonged OX40–OX40L interactions can drive pathogenic T cell responses, contributing to chronic inflammation and tissue damage. In allergic disease, OX40 promotes Th2 differentiation and cytokine production, supporting allergic inflammation. Conversely, in cancer, insufficient OX40 signaling may limit effective anti-tumor immunity, as robust T cell activation and persistence are required for tumor control.

Therapeutically, OX40 is an active target of immunomodulatory strategies. Agonistic antibodies targeting OX40 are being developed to enhance T cell responses in cancer immunotherapy, often in combination with immune checkpoint inhibitors to improve efficacy. In contrast, blockade of the OX40–OX40L pathway is being explored as a potential treatment for autoimmune and inflammatory diseases. These dual approaches underscore OX40’s central role in balancing immune activation and regulation in health and disease.

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