Human CD4 Antibody

Monoclonal Mouse IgG_1 Clone # 1068819

Catalog Number: MAB11426

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CD4 in direct ELISA.
Source	Monoclonal Mouse IgG_1 Clone # 1068819
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese Hamster Ovary cell line, CHO-derived human CD4 Lys26-Trp390 Accession # P01730
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.

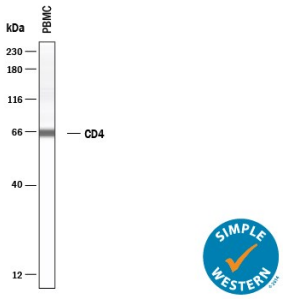
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	2 µg/mL	PBMC, SUP-T1 human T cell lymphoblastic lymphoma cells
Simple Western	10 µg/mL	Human PBMCs

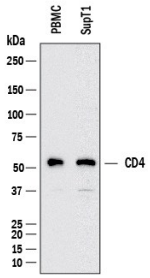
DATA

Simple Western



Detection of Human CD4 by Simple Western™. Simple Western lane view shows lysates of Human PBMCs, loaded at 0.2 mg/mL. A specific band was detected for CD4 at approximately 65 kDa (as indicated) using 10 µg/mL of Mouse Anti-Human CD4 Monoclonal Antibody (Catalog # MAB11426) . This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

Western Blot



Detection of Human CD4 by Western Blot. Western blot shows lysates of PBMC, SUP-T1 human T cell lymphoblastic lymphoma cells. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human CD4 Monoclonal Antibody (Catalog # MAB11426) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for CD4 at approximately 55 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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Human CD4 Antibody

Monoclonal Mouse IgG_1 Clone # 1068819

Catalog Number: MAB11426

BACKGROUND

CD4, also known as L3T4, T4, and W3/25, is an approximately 55 kDa type I transmembrane glycoprotein that is expressed predominantly on thymocytes and a subset of mature T lymphocytes. It is a standard phenotype marker for the identification of T cell populations (1). Mature human CD4 consists of a 371 amino acid (aa) extracellular region containing four immunoglobulin-like domains, a 22 aa transmembrane segment, and a 40 aa cytoplasmic domain (2). Within the ECD, human CD4 shares approximately 52% aa sequence identity with mouse and rat CD4. CD4 is expressed along with CD8 on double positive T cells during their development in the thymus. Either CD4 or CD8 expression is then lost, giving rise to single positive (SP) $CD4^+$ or $CD8^+$ mature T cells (3). $CD4^+$ SP cells, also known as T helper cells, further differentiate into multiple subsets of $CD4^+$ cells including Th1, Th2, Th17, Tfh, and Treg cells which regulate humoral and cellular immunity (4). CD4 is reexpressed on circulating $CD8^+$ T cells upon activation and contributes to their cytotoxic effector activity (5). In human, CD4 is additionally expressed on macrophages, neutrophils, monocytes, NK cells, and neurons and glial cells in the brain (6-9). Similar CD4 distribution between species cannot be assumed as demonstrated by its presence on macrophages in human and rat but not in mouse (6). CD4 binds directly to MHC class II molecules on antigen presenting cells (10). This interaction contributes to the formation of the immunological synapse which is focused around the TCR-MHC class II-antigenic peptide interaction (1, 11). Palmitoylation of two cysteine residues in the cytoplasmic tail of CD4 promotes the localization of CD4 in lipid rafts and its ability to augment TCR signaling *via* activation of the tyrosine kinase Lck (12). CD4 also functions as a chemotactic receptor for IL-16 and, in human, as a co-receptor for the gp120 surface glycoprotein of HIV-1 (7, 13-15).

References:

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