Human CD7 Antibody

Antigen Affinity-purified Polyclonal Sheep IgG
Catalog Number: AF7579

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CD7 in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant mouse CD7 is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Kidney embryonic cell line HEK293-derived recombinant human CD7 Ala26-Pro180 Accession # P09564
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

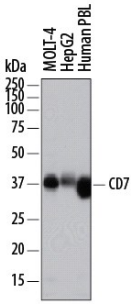
APPLICATIONS

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	0.5 µg/mL	See Below
Flow Cytometry	2.5 µg/10^6 cells	See Below
Immunocytochemistry	5-15 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

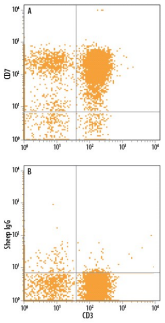
DATA

Western Blot



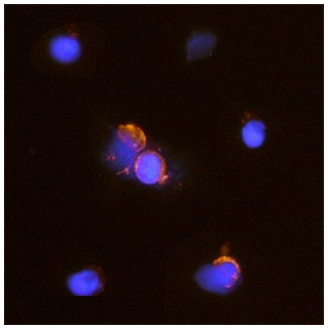
Detection of Human CD7 by Western Blot. Western blot shows lysates of MOLT-4 human acute lymphoblastic leukemia cell line, HepG2 human hepatocellular carcinoma cell line, and human peripheral blood lymphocytes (PBL). PVDF membrane was probed with 0.5 µg/mL of Sheep Anti-Human CD7 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF7579) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). A specific band was detected for CD7 at approximately 35-40 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Flow Cytometry



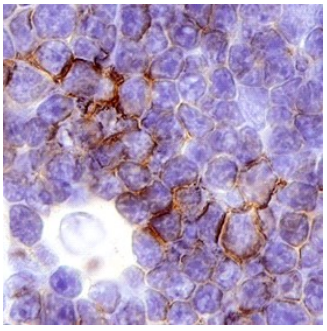
Detection of CD7 in Human PBMCs by Flow Cytometry. Human peripheral blood mononuclear cells (PBMCs) were stained with Mouse Anti-Human CD3ε APC-conjugated Monoclonal Antibody (Catalog # FAB100A) and either (A) Sheep Anti-Human CD7 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF7579) or (B) Sheep IgG Control (Catalog # 5-001-A) followed by Phycoerythrin-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # F0126).

Immunocytochemistry



CD7 in Human PBMCs. CD7 was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) using Sheep Anti-Human CD7 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF7579) at 15 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Sheep IgG Secondary Antibody (red; Catalog # NL010) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm and plasma membrane. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Immunohistochemistry



CD7 in Human Thymus. CD7 was detected in immersion fixed paraffin-embedded sections of human thymus using Sheep Anti-Human CD7 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF7579) at 3 µg/mL overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using the Anti-Sheep HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS019) and counterstained with hematoxylin (blue). Specific staining was localized to the plasma membrane. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

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PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.2 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
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.

BACKGROUND

CD7 (Cluster of Differentiation Antigen 7; also Leu-9, TP41 and GP40) is a 40-44 kDa member of the Ig-superfamily of proteins. It shows restricted expression, being found on fetal thymocytes, $CD34^+$ myeloid and lymphoid progenitor cells, memory CLA- $CD45RA^+$ T cells, and $CD56^+$ IFN-γ secreting NK cells. CD7 binds to both SECTM1/K12 and galectin-1, and when bound to the latter, initiates complex formation with CD43 in cis. Activation of CD7 may result in either cell proliferation or apoptosis, suggesting a context-dependent signaling mechanism. Mature human CD7 is a 215 amino acid (aa) type I transmembrane glycoprotein. It contains a 155 aa extracellular region (aa 26-180) that shows one V-type Ig-like domain (aa 26-130), and a 39 aa C-terminal cytoplasmic domain. There is one potential alternative splice variant that contains a 79 aa substitution for aa 133-240. Over aa 26-180, human CD7 shares only 43% aa sequence identity with mouse CD7.

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