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CD81 Antibody

Catalog # ASC10915

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P60033
Other Accession	NP_004347, 4757944
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	25809
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	CD81 antibody can be used for detection of CD81 by Western blot at 2.5 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	975
Other Names	CD81 antigen, 26 kDa cell surface protein TAPA-1, Target of the antiproliferative antibody 1, Tetraspanin-28, Tspan-28, CD81, CD81, TAPA1, TSPAN28
Target/Specificity	CD81;
Reconstitution & Storage	CD81 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	CD81 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CD81 {ECO:0000303|PubMed:8766544, ECO:0000312|HGNC:HGNC:1701}
Function	Structural component of specialized membrane microdomains known as tetraspanin-enriched microdomains (TERMs), which act as platforms for receptor clustering and signaling. Essential for trafficking and compartmentalization of CD19 receptor on the surface of activated B cells (PubMed:16449649, PubMed:20237408, PubMed:27881302). Upon initial encounter with microbial pathogens, enables the assembly of CD19-CR2/CD21 and B cell receptor (BCR) complexes at signaling TERMs, lowering the threshold dose of antigen required to trigger B cell clonal expansion and

	antibody production (PubMed:15161911, PubMed:20237408). In T cells, facilitates the localization of CD247/CD3 zeta at antigen-induced synapses with B cells, providing for costimulation and polarization toward T helper type 2 phenotype (PubMed:22307619, PubMed:23858057, PubMed:8766544). Present in MHC class II compartments, may also play a role in antigen presentation (PubMed:8409388, PubMed:8766544). Can act both as positive and negative regulator of homotypic or heterotypic cell-cell fusion processes. Positively regulates sperm-egg fusion and may be involved in acrosome reaction (By similarity). In myoblasts, associates with CD9 and PTGFRN and inhibits myotube fusion during muscle regeneration (By similarity). In macrophages, associates with CD9 and beta-1 and beta-2 integrins, and prevents macrophage fusion into multinucleated giant cells specialized in ingesting complement-opsonized large particles (PubMed:12796480). Also prevents the fusion of mononuclear cell progenitors into osteoclasts in charge of bone resorption (By similarity). May regulate the compartmentalization of enzymatic activities. In T cells, defines the subcellular localization of dNTPase SAMHD1 and permits its degradation by the proteasome, thereby controlling intracellular dNTP levels (PubMed:28871089). Also involved in cell adhesion and motility. Positively regulates integrin-mediated adhesion of macrophages, particularly relevant for the inflammatory response in the lung (By similarity).
Cellular Location	Cell membrane; Multi-pass membrane protein. Basolateral cell membrane; Multi-pass membrane protein. Note=Associates with CLDN1 and the CLDN1-CD81 complex localizes to the basolateral cell membrane
Tissue Location	Expressed on B cells (at protein level) (PubMed:20237408). Expressed in hepatocytes (at protein level) (PubMed:12483205). Expressed in monocytes/macrophages (at protein level) (PubMed:12796480). Expressed on both naive and memory CD4- positive T cells (at protein level) (PubMed:22307619)

Background

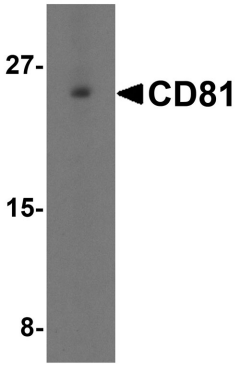
CD81 Antibody: CD81 is a member of the transmembrane 4 superfamily, also known as the tetraspanin family, a group of cell-surface proteins that are characterized by the presence of four hydrophobic domains and mediate signal transduction events that play a role in the regulation of cell development, activation, growth and motility. CD81 is a cell surface glycoprotein that associates with integrins and appears to promote muscle cell fusion and support myotube maintenance. Along with SCARB1, LDL-R, and CLDN1, CD81 has been reported to be an entry factor for the Hepatitis C virus. Finally, recent evidence indicates that the CD81 gene is localized in a tumor-suppressor gene region and is thus a candidate gene for malignancies.

References

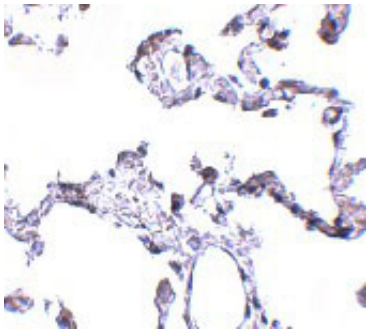
Oren R, Takahashi S, Doss C, et al. TAPA-1, the target of an antiproliferative antibody, defines a new family of transmembrane proteins. Mol. Cell Biol. 1990; 10:4007-15.
Charrin S, le Naour F, Silvie O, et al. Lateral organization of membrane proteins: tetraspanins spin their web. Biochem. J. 2009; 420:133-54.
Mannion BA, Berditchevski F, Kraeft SK, et al. Transmembrane-4 superfamily proteins CD81 (TAPA-1), CD82, CD63, and CD53 specifically associated with integrin alpha 4 beta 1 (CD49d/CD29). J. Immunol. 1996; 157:2039-47.
Tacvhibana I and Hemler ME. Role of transmembrane 4 superfamily (TM4SF) proteins CD9 and CD81 in muscle cell fusion and myotube maintenance. J. Cell Biol. 1999; 146:893-90.

Images

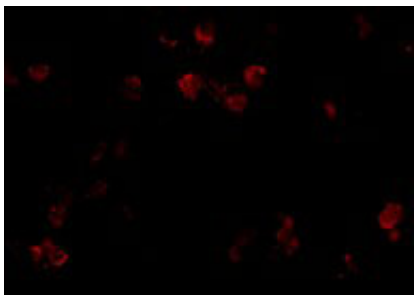
Western blot analysis of CD81 in human lung tissue lysate



with CD81 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking petide.



Immunohistochemistry of CD81 in human lung tissue with CD81 antibody at 5 µg/mL.



Immunofluorescence of CD81 in A549 cells with CD81 antibody at 20 µg/mL.

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