

CPTC-ALCAM-1(CAB080009)

Uniprot ID: [Q13740](#)

Protein name: CD166_HUMAN

Full name: CD166 antigen

Tissue specificity: Detected on hematopoietic stem cells derived from umbilical cord blood (PubMed:24740813). Detected on lymph vessel endothelial cells, skin and tonsil (PubMed:23169771). Detected on peripheral blood monocytes (PubMed:15048703). Detected on monocyte-derived dendritic cells (at protein level) (PubMed:16352806). Detected at low levels in spleen, placenta, liver (PubMed:9502422). Expressed by activated T-cells, B-cells, monocytes and thymic epithelial cells (PubMed:7760007). Isoform 1 and isoform 3 are detected in vein and artery endothelial cells, astrocytes, keratinocytes and artery smooth muscle cells (PubMed:15496415). Expressed by neurons in the brain. Restricted expression in tumor cell lines. Detected in highly metastasizing melanoma cell lines (PubMed:9502422).

Function: Cell adhesion molecule that mediates both heterotypic cell-cell contacts via its interaction with CD6, as well as homotypic cell-cell contacts (PubMed:7760007, PubMed:15496415, PubMed:15048703, PubMed:16352806, PubMed:23169771, PubMed:24945728). Promotes T-cell activation and proliferation via its interactions with CD6 (PubMed:15048703, PubMed:16352806, PubMed:24945728). Contributes to the formation and maturation of the immunological synapse via its interactions with CD6 (PubMed:15294938, PubMed:16352806). Mediates homotypic interactions with cells that express ALCAM (PubMed:15496415, PubMed:16352806). Required for normal hematopoietic stem cell engraftment in the bone marrow (PubMed:24740813). Mediates attachment of dendritic cells onto endothelial cells via homotypic interaction (PubMed:23169771). Inhibits endothelial cell migration and promotes endothelial tube formation via homotypic interactions (PubMed:15496415, PubMed:23169771). Required for normal organization of the lymph vessel network. Required for normal hematopoietic stem cell engraftment in the bone marrow. Plays a role in hematopoiesis; required for normal numbers of hematopoietic stem cells in bone marrow. Promotes in vitro osteoblast proliferation and differentiation (By similarity). Promotes neurite extension, axon growth and axon guidance; axons grow preferentially on surfaces that contain ALCAM. Mediates outgrowth and pathfinding for retinal ganglion cell axons (By similarity). [Isoform 3]: Inhibits activities of membrane-bound isoforms by competing for the same interaction partners. Inhibits cell attachment via homotypic interactions. Promotes endothelial cell migration. Inhibits endothelial cell tube formation.

Subcellular location:

Unnamed:

Cell membrane (*experimental evidence*) (Topo: Single-pass type I membrane protein (*curator inference*))

Cell projection > Axon (*by similarity*)

Cell projection > Dendrite (*by similarity*)

NOTE: Detected at the immunological synapse, i.e., at the contact zone between antigen-presenting dendritic cells and T-cells (PubMed:15294938, PubMed:16352806).

Colocalizes with CD6 and the TCR/CD3 complex at the immunological synapse (PubMed:15294938).

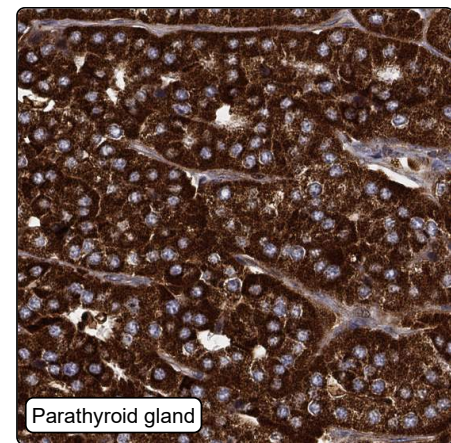
Isoform 3:

Secreted (*experimental evidence*)

Protein existence: Experimental evidence at protein level

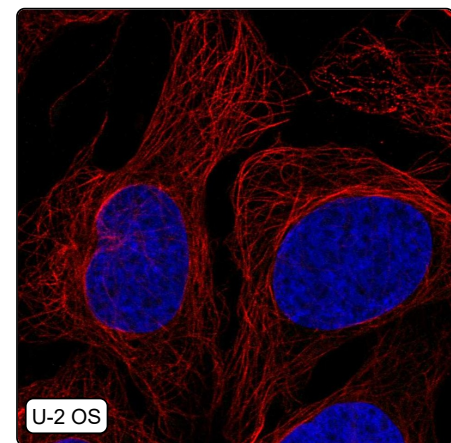
Comment:

Immunohistochemistry



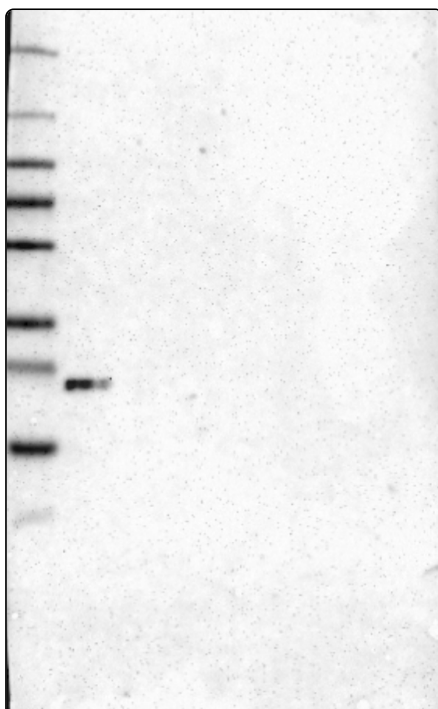
IHC protocol:	HIER pH6, Dilution 1:2250
IHC test staining:	Cytoplasmic positivity in a majority of tissues.
Literature conformance:	Not consistent with gene/protein characterization data
Literature significance:	
RNA similarity:	Medium consistency between antibody staining and RNA expression data
RNA tissue specificity:	Tissue enhanced (parathyroid gland)
RNA tissue distribution:	Detected in many
IHC Sibling similarity:	Other antibody shows partly similar IHC staining pattern

Immunofluorescence



IF Overlay:	antibody (green), anti-tubuline (red) and DAPI (blue)
IF main location:	
IF additional location:	
IF Antibody score:	Failed IF
IF in A549:	Negative
IF in HEK 293:	Negative
IF in U-2 OS:	Negative

Western blot



WB Size markers (kDa):	250, 130, 100, 70, 55, 35, 25, 15, 10
WB Lanes:	Marker (1), RT4 (2), U-251 MG (3), Plasma (4), Liver (5), Tonsil (6)
WB Target weight (kDa):	38, 60, 64, 65
WB Validation:	Uncertain (Single band differing more than +/-20% from predicted size in kDa and not supported by experimental and/or bioinformatic data.)