

# CPTC-LGALS9-1 (CAB080347)

**Uniprot ID:** O00182

**Protein name:** LEG9\_HUMAN

**Full name:** Galectin-9

**Tissue specificity:** Peripheral blood leukocytes and lymphatic tissues. Expressed in lung, liver, breast and kidney with higher levels in tumor endothelial cells than normal endothelium (at protein level) (PubMed:24333696). Expressed in trophoblast cells in decidua and placenta in pregnancy (at protein level) (PubMed:23242525, PubMed:25578313). Isoform 2 is the most abundant isoform expressed in endothelial cells (PubMed:24333696). Upon endothelial cell activation isoform 2 expression decreases while expression of isoform 3 and isoform 5 increases (PubMed:24333696). Isoform 4 decreases in pathological pregnancy (PubMed:23242525).

**Function:** Binds galactosides (PubMed:18005988). Has high affinity for the Forssman pentasaccharide (PubMed:18005988). Ligand for HAVCR2/TIM3 (PubMed:16286920). Binding to HAVCR2 induces T-helper type 1 lymphocyte (Th1) death (PubMed:16286920). Also stimulates bactericidal activity in infected macrophages by causing macrophage activation and IL1B secretion which restricts intracellular bacterial growth (By similarity). Ligand for P4HB; the interaction retains P4HB at the cell surface of Th2 T-helper cells, increasing disulfide reductase activity at the plasma membrane, altering the plasma membrane redox state and enhancing cell migration (PubMed:21670307). Ligand for CD44; the interaction enhances binding of SMAD3 to the FOXP3 promoter, leading to up-regulation of FOXP3 expression and increased induced regulatory T (iTreg) cell stability and suppressive function (By similarity). Promotes ability of mesenchymal stromal cells to suppress T-cell proliferation (PubMed:23817958). Expands regulatory T-cells and induces cytotoxic T-cell apoptosis following virus infection (PubMed:20209097). Activates ERK1/2 phosphorylation inducing cytokine (IL-6, IL-8, IL-12) and chemokine (CCL2) production in mast and dendritic cells (PubMed:24465902, PubMed:16116184). Inhibits degranulation and induces apoptosis of mast cells (PubMed:24465902). Induces maturation and migration of dendritic cells (PubMed:25754930, PubMed:16116184). Inhibits natural killer (NK) cell function (PubMed:23408620). Can transform NK cell phenotype from peripheral to decidual during pregnancy (PubMed:25578313). Astrocyte derived galectin-9 enhances microglial TNF production (By similarity). May play a role in thymocyte-epithelial interactions relevant to the biology of the thymus. May provide the molecular basis for urate flux across cell membranes, allowing urate that is formed during purine metabolism to efflux from cells and serving as an electrogenic transporter that plays an important role in renal and gastrointestinal urate excretion (By similarity). Highly selective to the anion urate (By similarity). [Isoform 2]: Acts as an eosinophil chemoattractant (PubMed:9642261). It also inhibits angiogenesis (PubMed:24333696). Suppresses IFNG production by natural killer cells (By similarity).

**Subcellular location:**

**Unnamed:**

Cytoplasm (*experimental evidence*)

Nucleus (*experimental evidence*)

Secreted (*experimental evidence*)

**NOTE:** May also be secreted by a non-classical secretory pathway (By similarity). Secreted by mesenchymal stromal cells upon IFNG stimulation (PubMed:23817958).

**Isoform 2:**

Secreted (*experimental evidence*)

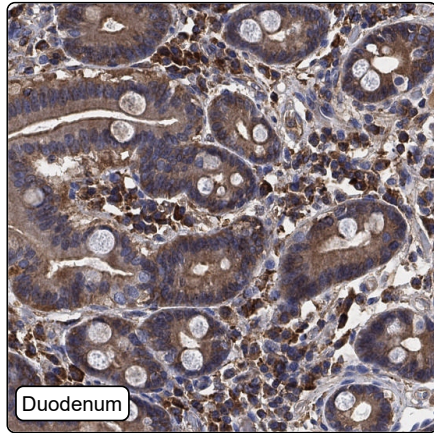
**Isoform 3:**

Secreted (*experimental evidence*)

**Protein existence:** Experimental evidence at protein level

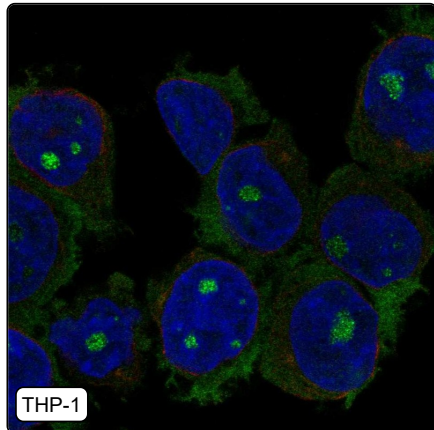
**Comment:**

## Immunohistochemistry



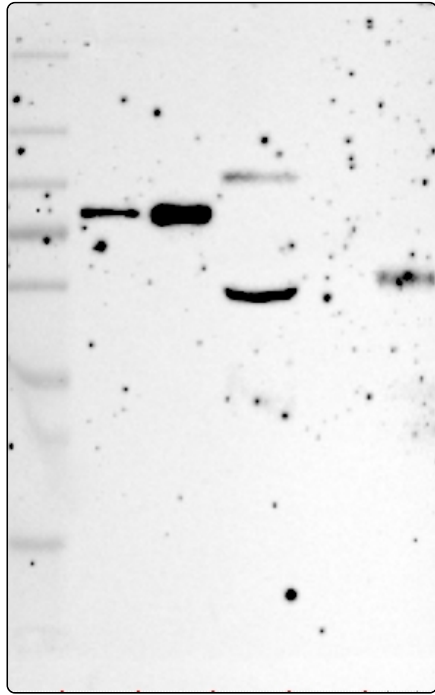
<b>IHC protocol:</b>	HIER pH6, Dilution 1:300
<b>IHC test staining:</b>	Cytoplasmic positivity in most tissues, including immune cells.
<b>Literature conformance:</b>	Consistent with extensive gene/protein characterization data
<b>Literature significance:</b>	
<b>RNA similarity:</b>	Low consistency between antibody staining and RNA expression data
<b>RNA tissue specificity:</b>	Tissue enhanced (intestine, stomach 1)
<b>RNA tissue distribution:</b>	Detected in all
<b>IHC Sibling similarity:</b>	Other antibody shows partly similar IHC staining pattern

## Immunofluorescence



<b>IF Overlay:</b>	antibody (green), anti-tubulin (red) and DAPI (blue)
<b>IF main location:</b>	Nucleoli - 3: <b>Supportive</b> (auto) Plasma membrane - 12: <b>Uncertain</b> (auto)
<b>IF additional location:</b>	
<b>IF approved for publication on HPA:</b>	No
<b>IF in THP-1:</b>	Nucleoli Plasma membrane
<b>IF in U2OS:</b>	Negative

# Western blot



<b>WB Size markers (kDa):</b>	250, 130, 100, 70, 55, 35, 25, 15, 10
<b>WB Lanes:</b>	Marker (1), RT-4 (2), U-251MG (3), Plasma (4), Liver (5), Tonsil (6)
<b>WB Target weight (kDa):</b>	13, 14, 15, 19, 27, 36, 40
<b>WB Validation:</b>	Uncertain (Only bands not corresponding to the predicted size.)