

CPTC-S100A12-1 (CAB080260)

Uniprot ID: P80511

Protein name: S100AC_HUMAN

Full name: Protein S100-A12

Tissue specificity: Predominantly expressed by neutrophils, monocytes and activated macrophages. Expressed by eosinophils and macrophages in asthmatic airways in regions where mast cells accumulate. Found in high concentrations in the serum of patients suffering from various inflammatory disorders, such as rheumatoid arthritis, psoriatic arthritis, Crohn's disease, ulcerative colitis, and Kawasaki disease.

Function: S100A12 is a calcium-, zinc- and copper-binding protein which plays a prominent role in the regulation of inflammatory processes and immune response. Its pro-inflammatory activity involves recruitment of leukocytes, promotion of cytokine and chemokine production, and regulation of leukocyte adhesion and migration. Acts as an alarmin or a danger associated molecular pattern (DAMP) molecule and stimulates innate immune cells via binding to receptor for advanced glycation endproducts (AGER). Binding to AGER activates the MAP-kinase and NF-kappa-B signaling pathways leading to production of pro-inflammatory cytokines and up-regulation of cell adhesion molecules ICAM1 and VCAM1. Acts as a monocyte and mast cell chemoattractant. Can stimulate mast cell degranulation and activation which generates chemokines, histamine and cytokines inducing further leukocyte recruitment to the sites of inflammation. Can inhibit the activity of matrix metalloproteinases; MMP2, MMP3 and MMP9 by chelating Zn(2+) from their active sites. Possesses filariacidal and filariastatic activity. Calcitermin possesses antifungal activity against C.albicans and is also active against E.coli and P.aeruginosa but not L.monocytogenes and S.aureus.

Subcellular location:

Secreted (*experimental evidence*)

Cytoplasm (*experimental evidence*)

Cytoplasm > Cytoskeleton (*experimental evidence*)

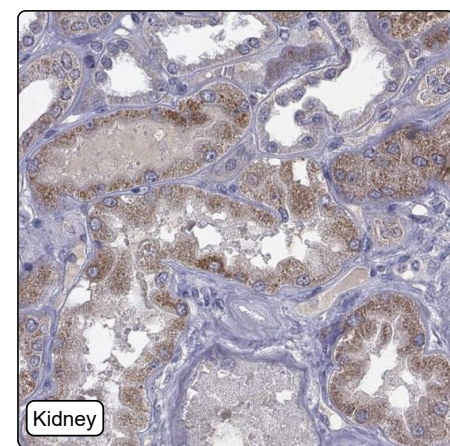
Cell membrane (*experimental evidence*) (Topo: Peripheral membrane protein (*experimental evidence*))

NOTE: Predominantly localized in the cytoplasm. Upon elevation of the intracellular calcium level, translocated from the cytoplasm to the cytoskeleton and the cell membrane. Upon neutrophil activation is secreted via a microtubule-mediated, alternative pathway.

Protein existence: Experimental evidence at protein level

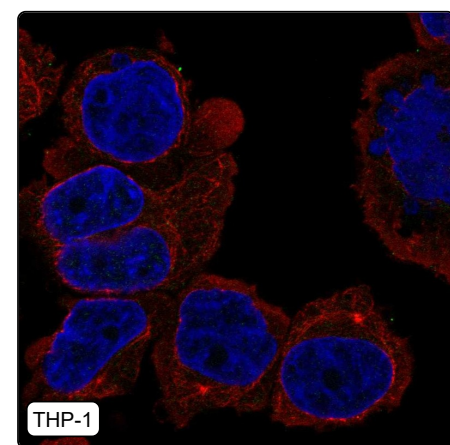
Comment:

Immunohistochemistry



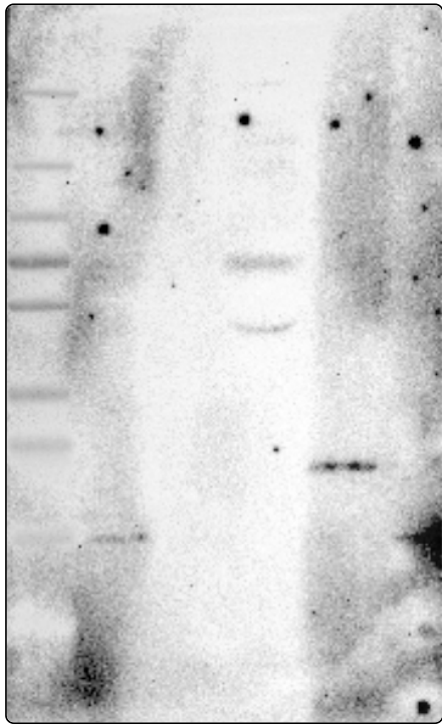
IHC protocol:	HIER pH6, Dilution 1:220
IHC test staining:	Cytoplasmic positivity in kidney.
Literature conformance:	Not consistent with gene/protein characterization data
Literature significance:	
RNA similarity:	Very low consistency between antibody staining and RNA expression data
RNA tissue specificity:	Tissue enriched (bone marrow)
RNA tissue distribution:	Detected in many
IHC Sibling similarity:	Other antibody shows dissimilar IHC staining pattern
IHC fail comment:	ANTIBODY FAILED: Not consistent with RNA

Immunofluorescence



IF Overlay:	antibody (green), anti-tubulin (red) and DAPI (blue)
IF main location:	
IF additional location:	
IF approved for publication on HPA:	No
IF in THP-1:	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):	11
WB Validation:	Uncertain (Only bands not corresponding to the predicted size.)