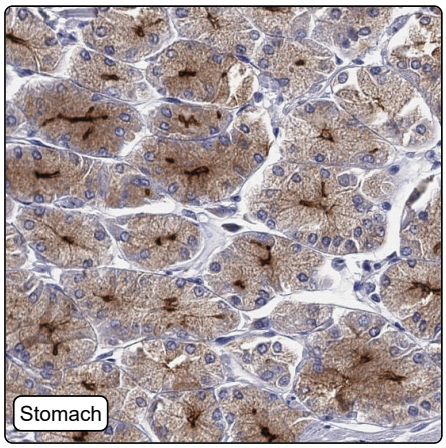
CPTC-MUC1-2 (CAB080103)

Uniprot ID: P15941
Protein name: MUC1_HUMAN
Full name: Mucin-1
Tissue specificity: Expressed on the apical surface of epithelial cells, especially of airway passages, breast and uterus. Also expressed in activated and unactivated T-cells. Overexpressed in epithelial tumors, such as breast or ovarian cancer and also in non-epithelial tumor cells. Isoform Y is expressed in tumor cells only.
Function: The alpha subunit has cell adhesive properties. Can act both as an adhesion and an anti-adhesion protein. May provide a protective layer on epithelial cells against bacterial and enzyme attack. The beta subunit contains a C-terminal domain which is involved in cell signaling, through phosphorylations and protein-protein interactions. Modulates signaling in ERK, SRC and NF-kappa-B pathways. In activated T-cells, influences directly or indirectly the Ras/MAPK pathway. Promotes tumor progression. Regulates TP53-mediated transcription and determines cell fate in the genotoxic stress response. Binds, together with KLF4, the PE21 promoter element of TP53 and represses TP53 activity.
Subcellular location:
Unnamed:
Apical cell membrane (*experimental evidence*) (Topo: Single-pass type I membrane protein (*experimental evidence*))
NOTE: Exclusively located in the apical domain of the plasma membrane of highly polarized epithelial cells. After endocytosis, internalized and recycled to the cell membrane. Located to microvilli and to the tips of long filopodial protusions.
Isoform 5:
Secreted
Isoform 9:
Secreted
Isoform Y:
Secreted
Mucin-1 subunit beta:
Cell membrane
Cytoplasm
Nucleus
NOTE: On EGF and PDGFRB stimulation, transported to the nucleus through interaction with CTNNB1, a process which is stimulated by phosphorylation. On HRG stimulation, colocalizes with JUP/gamma-catenin at the nucleus.
Protein existence: Experimental evidence at protein level

Comment:

Immunohistochemistry

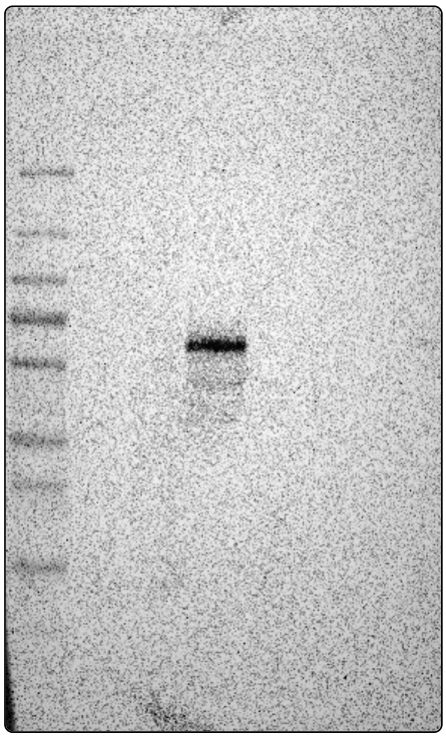


IHC protocol:	HIER pH6, Dilution 1:225
IHC test staining:	Apical membrane positivity in gastrointestinal tract, urinary bladder, gall bladder, kidney and pancreas.
Literature conformance:	Partly consistent with extensive gene/protein characterization data
Literature significance:	
RNA similarity:	Medium consistency between antibody staining and RNA expression data
RNA tissue specificity:	Tissue enhanced (kidney,stomach 1)
RNA tissue distribution:	Detected in many
IHC Sibling similarity:	Other antibody shows partly similar IHC staining pattern

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 SiHa:	Negative
IF in SK-MEL-30:	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):	9, 13, 14, 16, 17, 17, 18, 20, 22, 22, 22, 24, 25, 25, 26, 26, 28, 28, 30, 30, 49, 50, 123
WB Validation:	Supported (Single band corresponding to the predicted size in kDa (+/-20%).)