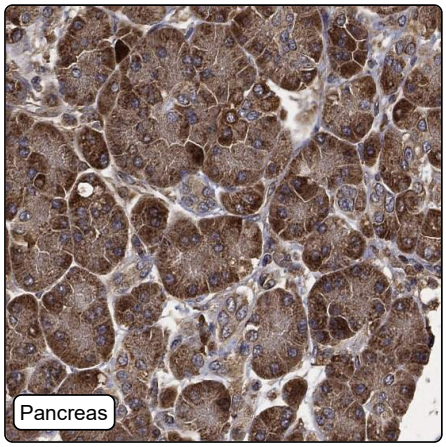
CPTC-IDO1-3 (CAB080147)

Uniprot ID: P14902
Protein name: I23O1_HUMAN
Full name: Indoleamine 2,3-dioxygenase 1
Tissue specificity: Expressed in mature dendritic cells located in lymphoid organs (including lymph nodes, spleen, tonsils, Peyers's patches, the gut lamina propria, and the thymic medulla), in some epithelial cells of the female genital tract, as well as in endothelial cells of term placenta and in lung parenchyma (PubMed:25691885). Weakly or not expressed in most normal tissues, but mostly inducible in most tissues (PubMed:25691885). Expressed in more than 50% of tumors, either by tumoral, stromal, or endothelial cells (expression in tumor is associated with a worse clinical outcome) (PubMed:18418598). Not overexpressed in tumor-draining lymph nodes (PubMed:26155395, PubMed:25691885).
Function: Catalyzes the first and rate limiting step of the catabolism of the essential amino acid tryptophan along the kynurenine pathway (PubMed:17671174). Involved in the peripheral immune tolerance, contributing to maintain homeostasis by preventing autoimmunity or immunopathology that would result from uncontrolled and overreacting immune responses (PubMed:25691885). Tryptophan shortage inhibits T lymphocytes division and accumulation of tryptophan catabolites induces T-cell apoptosis and differentiation of regulatory T-cells (PubMed:25691885). Acts as a suppressor of anti-tumor immunity (PubMed:23103127, PubMed:25157255, PubMed:14502282, PubMed:25691885). Limits the growth of intracellular pathogens by depriving tryptophan (PubMed:25691885). Protects the fetus from maternal immune rejection (PubMed:25691885).
Subcellular location:
Cytoplasm > Cytosol (*by similarity, non-traceable author statement*)
Protein existence: Experimental evidence at protein level

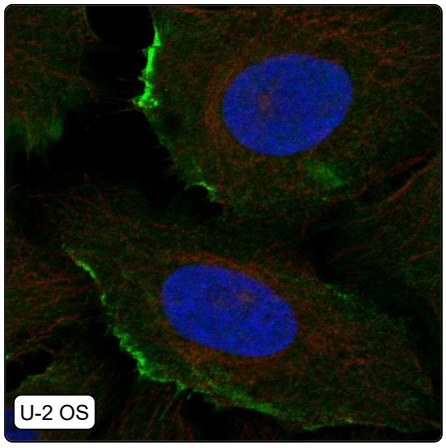
Comment:

Immunohistochemistry



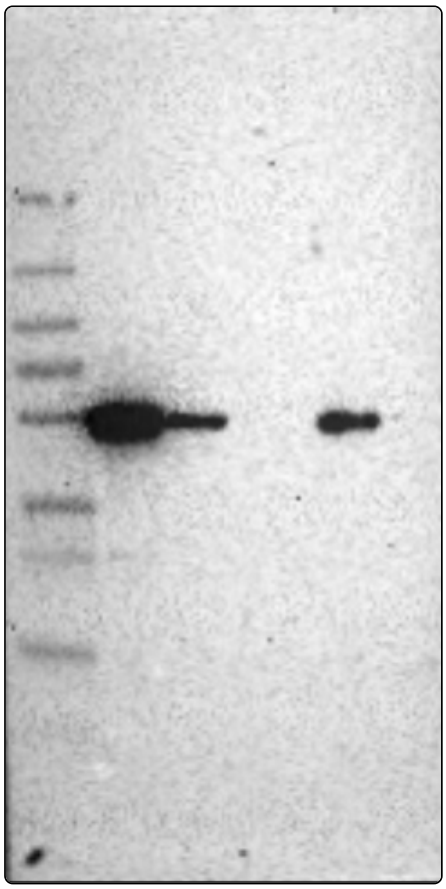
IHC protocol:	HIER pH6, Dilution 1:2000
IHC test staining:	Cytoplasmic positivity in most tissues, additional positivity in plasma.
Literature conformance:	Not consistent with gene/protein characterization data
Literature significance:	
RNA similarity:	Very low consistency between antibody staining and RNA expression data
RNA tissue specificity:	Tissue enhanced (lymphoid tissue,placenta)
RNA tissue distribution:	Detected in many
IHC Sibling similarity:	Other antibody shows dissimilar IHC staining pattern

Immunofluorescence



IF Overlay:	antibody (green), anti-tubulin (red) and DAPI (blue)
IF main location:	Plasma membrane - 7: **Approved** (auto)
IF additional location:	
IF approved for publication on HPA:	No
IF in SiHa:	Plasma membrane
IF in SK-MEL-30:	Plasma membrane
IF in U-2 OS:	Plasma membrane

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):	6, 9, 21, 45, 45
WB Validation:	Supported (Single band corresponding to the predicted size in kDa (+/-20%).)