

# CPTC-IL6R-1 (CAB080212)

**Uniprot ID:** P08887

**Protein name:** IL6RA\_HUMAN

**Full name:** Interleukin-6 receptor subunit alpha

**Tissue specificity:** [Isoform 2]: Expressed in peripheral blood mononuclear cells and weakly found in urine and serum. 1%-20% of the total sIL6R in plasma is generated by alternative splicing (PubMed:28060820).

**Function:** Part of the receptor for interleukin 6. Binds to IL6 with low affinity, but does not transduce a signal (PubMed:28265003). Signal activation necessitate an association with IL6ST. Activation leads to the regulation of the immune response, acute-phase reactions and hematopoiesis (PubMed:30995492, PubMed:31235509). The interaction with membrane-bound IL6R and IL6ST stimulates 'classic signaling', the restricted expression of the IL6R limits classic IL6 signaling to only a few tissues such as the liver and some cells of the immune system. Whereas the binding of IL6 and soluble IL6R to IL6ST stimulates 'trans-signaling'. Alternatively, 'cluster signaling' occurs when membrane-bound IL6:IL6R complexes on transmitter cells activate IL6ST receptors on neighboring receiver cells (Probable). [Isoform 1]: Signaling via the membrane-bound IL6R is mostly regenerative and anti-inflammatory (Probable). Drives naive CD4(+) T cells to the Th17 lineage, through 'cluster signaling' by dendritic cells (By similarity). [Isoform 2]: Soluble form of IL6 receptor (sIL6R) that acts as an agonist of IL6 activity (PubMed:21990364). The IL6:sIL6R complex (hyper-IL6) binds to IL6ST/gp130 on cell surfaces and induces signaling also on cells that do not express membrane-bound IL6R in a process called IL6 'trans-signaling'. sIL6R is causative for the pro-inflammatory properties of IL6 and an important player in the development of chronic inflammatory diseases (PubMed:21990364). In complex with IL6, is required for induction of VEGF production (PubMed:12794819). Plays a protective role during liver injury, being required for maintenance of tissue regeneration (By similarity). 'Trans-signaling' in central nervous system regulates energy and glucose homeostasis (By similarity). [Soluble interleukin-6 receptor subunit alpha]: Soluble form of IL6 receptor (sIL6R) that acts as an agonist of IL6 activity (PubMed:21990364). The IL6:sIL6R complex (hyper-IL6) binds to IL6ST/gp130 on cell surfaces and induces signaling also on cells that do not express membrane-bound IL6R in a process called IL6 'trans-signaling'. sIL6R is causative for the pro-inflammatory properties of IL6 and an important player in the development of chronic inflammatory diseases (PubMed:21990364). In complex with IL6, is required for induction of VEGF production (PubMed:12794819). Plays a protective role during liver injury, being required for maintenance of tissue regeneration (By similarity). 'Trans-signaling' in central nervous system regulates energy and glucose homeostasis (By similarity).

**Subcellular location:**

**Isoform 1:**

Cell membrane (by similarity) (Topo: Single-pass type I membrane protein (match to sequence model))

**Isoform 2:**

Secreted (experimental evidence)

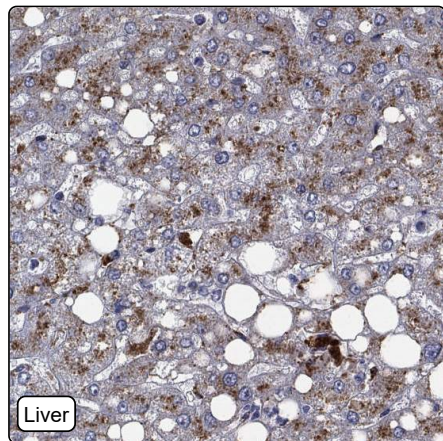
**Soluble interleukin-6 receptor subunit alpha:**

Secreted (experimental evidence)

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

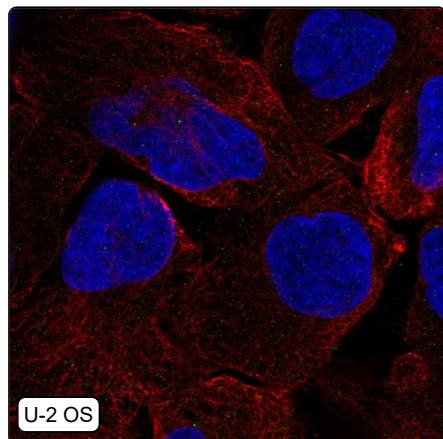
**Comment:**

## Immunohistochemistry



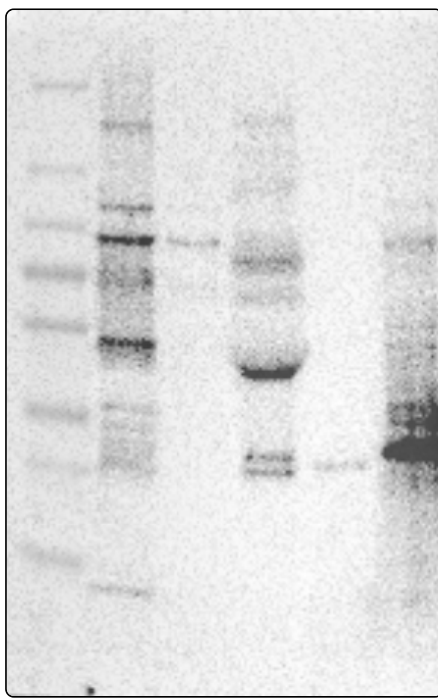
<b>IHC protocol:</b>	HIER pH6, Dilution 1:900
<b>IHC test staining:</b>	Positivity in lipofuscin.
<b>Literature conformance:</b>	Not consistent with gene/protein characterization data
<b>Literature significance:</b>	
<b>RNA similarity:</b>	Very low consistency between antibody staining and RNA expression data
<b>RNA tissue specificity:</b>	Tissue enhanced (liver,skeletal muscle)
<b>RNA tissue distribution:</b>	Detected in all
<b>IHC Sibling similarity:</b>	Other antibody shows dissimilar IHC staining pattern
<b>IHC fail comment:</b>	ANTIBODY FAILED: Not consistent with RNA

## Immunofluorescence



<b>IF Overlay:</b>	antibody (green), anti-tubulin (red) and DAPI (blue)
<b>IF main location:</b>	
<b>IF additional location:</b>	
<b>IF approved for publication on HPA:</b>	No
<b>IF in THP-1:</b>	Negative
<b>IF in U-2 OS:</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), RT4 (2), U-251 MG (3), Plasma (4), Liver (5), Tonsil (6)
<b>WB Target weight (kDa):</b>	18, 21, 33, 39, 40, 52
<b>WB Validation:</b>	Supported (Band of predicted size in kDa (+/-20%) with additional bands present.)