

# CPTC-ARG2-1(CAB079989)

**Uniprot ID:** P78540

**Protein name:** ARG12\_HUMAN

**Full name:** Arginase-2, mitochondrial

**Tissue specificity:** Expressed most strongly in kidney and prostate, much less strongly in the brain, skeletal muscle, placenta, lung, mammary gland, macrophage, uterus, testis and gut, but apparently not in the liver, heart and pancreas. Expressed in activated T cells (PubMed:27745970).

**Function:** May play a role in the regulation of extra-urea cycle arginine metabolism and also in down-regulation of nitric oxide synthesis. Extrahepatic arginase functions to regulate L-arginine bioavailability to nitric oxid synthase (NOS). Arginine metabolism is a critical regulator of innate and adaptive immune responses. Seems to be involved in negative regulation of the survival capacity of activated CD4(+) and CD8(+) T cells (PubMed:27745970). May suppress inflammation-related signaling in asthmatic airway epithelium (PubMed:27214549). May contribute to the immune evasion of H.pylori by restricting M1 macrophage activation and polyamine metabolism (By similarity). In fetal dendritic cells may play a role in promoting immune suppression and T cell TNF-alpha production during gestation (PubMed:28614294). Regulates RPS6KB1 signaling, which promotes endothelial cell senescence and inflammation and implicates NOS3/eNOS dysfunction (PubMed:22928666). Can inhibit endothelial autophagy independently of its enzymatic activity implicating mTORC2 signaling (PubMed:25484082). Involved in vascular smooth muscle cell senescence and apoptosis independently of its enzymatic activity (PubMed:23832324). Since NOS is found in the penile corpus cavernosum smooth muscle, the clitoral corpus cavernosum and the vagina, arginase-2 plays a role in both male and female sexual arousal (PubMed:12859189).

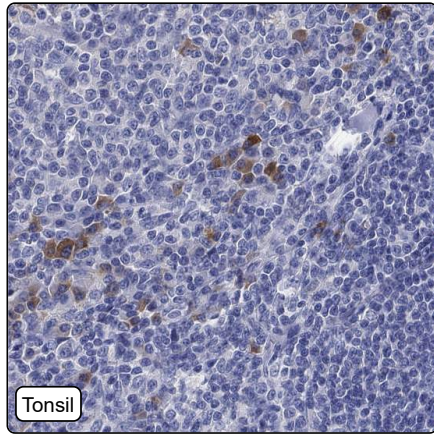
**Subcellular location:**

Mitochondrion (*experimental evidence*)

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

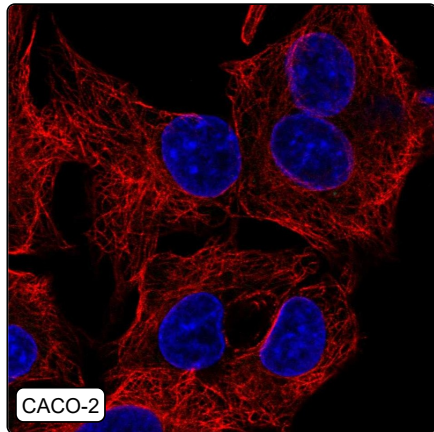
**Comment:**

## Immunohistochemistry



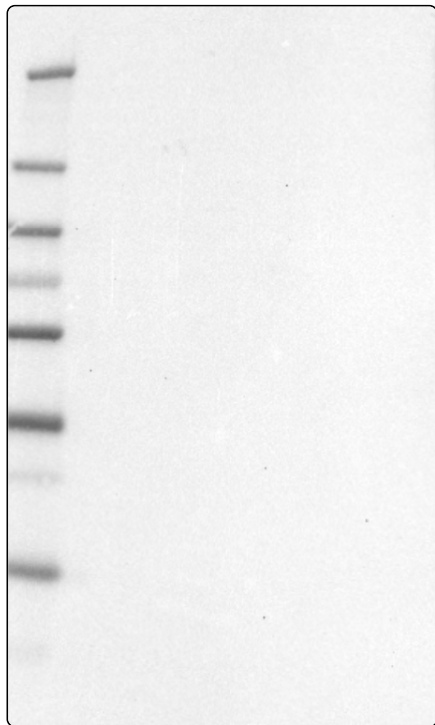
|                                 |   |
|---------------------------------|---|
| <b>IHC protocol:</b>            | HIER pH6, Dilution 1:250  |
| <b>IHC test staining:</b>       | Weak to moderate cytoplasmic positivity in a subset of immune cells. Additional positivity in plasma. |
| <b>Literature conformance:</b>  | Not consistent with gene/protein characterization data  |
| <b>Literature significance:</b> |   |
| <b>RNA consistency:</b>         | Not consistent with RNA expression data   |
| <b>IHC Sibling similarity:</b>  | Other antibody shows dissimilar IHC staining pattern  |
| <b>IHC fail comment:</b>        | ANTIBODY FAILED: Improbable histological location,Not consistent with RNA                             |

## Immunofluorescence



|                                |   |
|--------------------------------|---|
| <b>IF Overlay:</b>             | antibody (green), anti-tubuline (red) and DAPI (blue) |
| <b>IF main location:</b>       |   |
| <b>IF additional location:</b> |   |
| <b>IF Antibody score:</b>      | Failed IF   |
| <b>IF in CACO-2:</b>           | Negative  |
| <b>IF in HEK 293:</b>          | Negative  |
| <b>IF in U-2 OS:</b>           | Negative  |

# Western blot



|                                |  |
|--------------------------------|--|
| <b>WB Size markers (kDa):</b>  | 250, 130, 95, 72, 55, 36, 28, 17, 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> | 39   |
| <b>WB Validation:</b>          | Uncertain (No bands detected.)                                       |