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# HCP1 Rabbit pAb

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Catalog # AP55987

## Product Information

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| **Application** | WB, IHC-P, IHC-F, IF |
| **Primary Accession** | Q96NT5 |
| **Reactivity** | Human, Mouse |
| **Predicted** | Rat, Chicken |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Calculated MW** | 49771 |
| **Physical State** | Liquid |
| **Immunogen** | KLH conjugated synthetic peptide derived from human HCP1 |
| **Epitope Specificity** | 341-459/459 |
| **Isotype** | IgG |
| **Purity** | affinity purified by Protein A |
| **Buffer** | 0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. |
| **SUBCELLULAR LOCATION** | Apical cell membrane; Multi-pass membrane protein. Cytoplasm. Note=Localizes to the apical membrane of intestinal cells in iron-deficient cells, while it resides in the cytoplasm in iron-replete cells. |
| **DISEASE** | Hereditary folate malabsorption (HFM) [MIM:229050]: Rare autosomal recessive disorder characterized by impaired intestinal folate absorption with folate deficiency resulting in anemia, hypoimmunoglobulinemia with recurrent infections, and recurrent or chronic diarrhea. In many patients, neurological abnormalities such as seizures or mental retardation become apparent during early childhood, attributed to impaired transport of folates into the central nervous system. When diagnosed early, the disorder can be treated by administration of folate. If untreated, it can be fatal and, if treatment is delayed, the neurological defects can become permanent. Note=The disease is caused by mutations affecting the gene represented in this entry. |
| **Important Note** | This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications. |
| **Background Descriptions** | This gene encodes a transmembrane proton-coupled folate transporter protein that facilitates the movement of folate and antifolate substrates across cell membranes, optimally in acidic pH environments. This protein is also expressed in the brain and choroid plexus where it transports folates into the central nervous system. This protein further functions as a heme transporter in duodenal enterocytes, and potentially in other tissues like liver and kidney. Its localization to the apical membrane or cytoplasm of intestinal cells is modulated by dietary iron levels. Mutations in this gene are associated with autosomal recessive hereditary folate malabsorption disease. Alternatively spliced transcript variants encoding different isoforms have been described for this gene. [provided by RefSeq, Aug 2013] |

## Additional Information

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| **Gene ID** | 113235 |
| **Other Names** | Proton-coupled folate transporter, HsPCFT, hPCFT, Heme carrier protein 1, PCFT/HCP1, Solute carrier family 46 member 1, SLC46A1 {ECO:0000303\|PubMed:20686069, ECO:0000312\|HGNC:HGNC:30521} |
| **Dilution** | WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,Flow-Cyt=2ug/Test |
| **Storage** | Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C. |

## Protein Information

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| **Name** | SLC46A1 {ECO:0000303\|PubMed:20686069, ECO:0000312\|HGNC:HGNC:30521} |
| **Function** | Proton-coupled folate symporter that mediates folate absorption using an H(+) gradient as a driving force (PubMed:17129779, PubMed:17446347, PubMed:17475902, PubMed:19389703, PubMed:19762432, PubMed:25504888, PubMed:29344585, PubMed:30858177, PubMed:31494288, PubMed:31792273, PubMed:32893190, PubMed:34619546). Involved in the intestinal absorption of folates at the brush-border membrane of the proximal jejunum, and the transport from blood to cerebrospinal fluid across the choroid plexus (PubMed:17129779, PubMed:17446347, PubMed:17475902, PubMed:19389703, PubMed:25504888, PubMed:29344585, PubMed:30858177, PubMed:31494288, PubMed:32893190). Functions at acidic pH via alternate outward- and inward-open conformation states (PubMed:32893190, PubMed:34040256). Protonation of residues in the outward open state primes the protein for transport (PubMed:34040256). Binding of folate promotes breaking of salt bridge network and subsequent closure of the extracellular gate, leading to the inward- open state and release of protons and folate (PubMed:34040256). Also able to transport antifolate drugs, such as methotrexate and pemetrexed, which are established treatments for cancer and autoimmune diseases (PubMed:18524888, PubMed:19762432, PubMed:22345511, PubMed:25608532, PubMed:28802835, PubMed:29326243, PubMed:34040256, PubMed:34619546). Involved in FOLR1-mediated endocytosis by serving as a route of export of folates from acidified endosomes (PubMed:19074442). Also acts as a lower-affinity, pH-independent heme carrier protein and constitutes the main importer of heme in the intestine (PubMed:17156779). Imports heme in the retina and retinal pigment epithelium, in neurons of the hippocampus, in hepatocytes and in the renal epithelial cells (PubMed:32621820). Hence, participates in the trafficking of heme and increases intracellular iron content (PubMed:32621820). |
| **Cellular Location** | Cell membrane; Multi-pass membrane protein. Apical cell membrane; Multi-pass membrane protein. Basolateral cell membrane; Multi-pass membrane protein. Endosome membrane; Multi-pass membrane protein. Cytoplasm {ECO:0000250\|UniProtKB:Q6PEM8}. Note=Localizes to the apical membrane of intestinal cells in iron-deficient cells, while it resides in the cytoplasm in iron-replete cells (By similarity). Localizes to the basolateral membrane of choroid plexus (PubMed:19074442) {ECO:0000250\|UniProtKB:Q6PEM8, ECO:0000269\|PubMed:19074442} |

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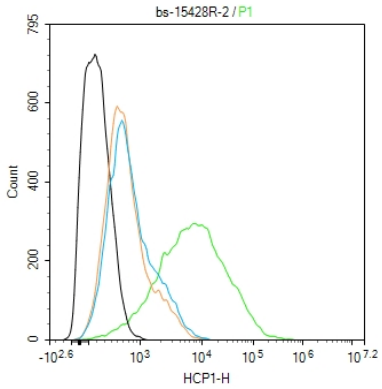
| **Tissue Location** | Expressed at highest level in the upper half of the small intestine (duodenum and jejunum), expression decreases downwardly in the subsequent quarter and is undetectable in the last quarter (the lowest ileum) (PubMed:17129779, PubMed:19762432). Also expressed in kidney, liver, placenta, spleen, retina and retinal pigment epithelium (PubMed:17129779, PubMed:17335806). Lower levels found in testis (PubMed:17129779). Very low levels in brain, lung, stomach, heart and muscle (PubMed:17129779). |

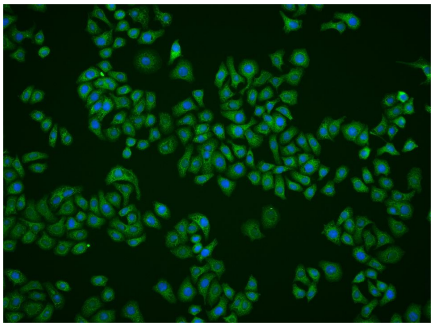
## Background

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

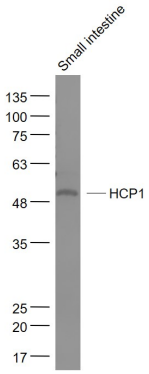
## Images




Blank control:Jurkat.
Primary Antibody (green line): Rabbit Anti-HCP1 antibody (AP55987)
Dilution: 2ug/Test;
Secondary Antibody (white blue line) : Goat anti-rabbit IgG-FITC
Dilution: 0.5ug/Test.
Isotype control(orange line) : Normal Rabbit IgG
Protocol
The cells were incubated in 5%BSA to block non-specific protein-protein interactions for 30 min at room temperature .Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.

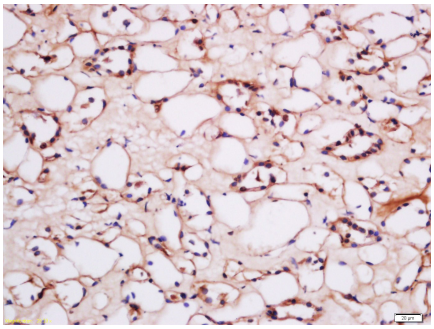


HepG2 cell; 4% Paraformaldehyde-fixed; Triton X-100 at room temperature for 20 min; Blocking buffer (normal goat serum, C-0005) at 37°C for 20 min; Antibody incubation with (HCP1) polyclonal Antibody, Unconjugated (AP55987) 1:100, 90 minutes at 37°C; followed by a conjugated Goat Anti-Rabbit IgG antibody at 37°C for 90 minutes, DAPI (blue, C02-04002) was used to stain the cell nuclei.




Sample:
Small intestine (Mouse) Lysate at 40 ug
Primary: Anti- HCP1 (AP55987) at 1/1000 dilution
Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution
Predicted band size: 50 kD
Observed band size: 50 kD

Tissue/cell: human kidney tissue; 4% Paraformaldehyde-fixed and paraffin-embedded;
Antigen retrieval: citrate buffer ( 0.01M, pH 6.0 ), Boiling



bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37℃ for 20 min;
Incubation: Anti-HCP1 Polyclonal Antibody, Unconjugated(AP55987) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining