

# HCP1 (H-66): sc-134997

## BACKGROUND

HCP1 (heme carrier protein 1), also known as proton-coupled folate transporter (PCFT), is a multi-pass transmembrane protein that is expressed in the small intestine. It is predominantly found in the duodenum and the jejunum localizing to the apical brush border. HCP1 is required for normal folate absorption in the intestine and is associated with folate homeostasis. HCP1 mediates the transport of folate and functions most optimally at a low extracellular pH of approximately 5.5. HCP1 functions independently of Na<sup>+</sup> and is insensitive to membrane potential. It exhibits high affinity for folic acid and low affinity for the PT523 antifolate. HCP1 is post-translationally regulated by iron levels in the duodenum. During iron deficiency, HCP1 localizes to the apical membrane; however, iron excess causes HCP1 to localize in the cytoplasm. Sulfasalazine is a potent inhibitor of HCP1. Mutations in the gene encoding HCP1 can result in the autosomal recessive disorder hereditary folate malabsorption (HFM).

## REFERENCES

1. Rouault, T.A. 2005. The intestinal heme transporter revealed. *Cell* 122: 649-651.
2. Shayeghi, M., et al. 2005. Identification of an intestinal heme transporter. *Cell* 122: 789-801.
3. Qiu, A., et al. 2006. Identification of an intestinal folate transporter and the molecular basis for hereditary folate malabsorption. *Cell* 127: 917-928.
4. Latunde-Dada, G.O., et al. 2006. Haem carrier protein 1 (HCP1): expression and functional studies in cultured cells. *FEBS Lett.* 580: 6865-6870.
5. Latunde-Dada, G.O., et al. 2006. Recent advances in mammalian haem transport. *Trends Biochem. Sci.* 31: 182-188.
6. Sharma, S., et al. 2007. Heme carrier protein 1 (HCP1) expression and functional analysis in the retina and retinal pigment epithelium. *Exp. Cell Res.* 313: 1251-1259.
7. Nakai, Y., et al. 2007. Functional characterization of human proton-coupled folate transporter/heme carrier protein 1 heterologously expressed in mammalian cells as a folate transporter. *J. Pharmacol. Exp. Ther.* 322: 469-476.
8. Qiu, A., et al. 2007. Rodent intestinal folate transporters (SLC46A1): secondary structure, functional properties, response to dietary folate restriction. *Am. J. Physiol., Cell Physiol.* 293: C1669-C1678.

## CHROMOSOMAL LOCATION

Genetic locus: SLC46A1 (human) mapping to 17q11.2; Slc46a1 (mouse) mapping to 11 B5.

## SOURCE

HCP1 (H-66) is a rabbit polyclonal antibody raised against amino acids 232-297 mapping within an internal region of HCP1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

HCP1 (H-66) is recommended for detection of heme carrier protein 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HCP1 (H-66) is also recommended for detection of heme carrier protein 1 in additional species, including equine.

Suitable for use as control antibody for HCP1 siRNA (h): sc-72314, HCP1 siRNA (m): sc-72315, HCP1 shRNA Plasmid (h): sc-72314-SH, HCP1 shRNA Plasmid (m): sc-72315-SH, HCP1 shRNA (h) Lentiviral Particles: sc-72314-V and HCP1 shRNA (m) Lentiviral Particles: sc-72315-V.

Molecular Weight of HCP1: 54 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

1. Hooda, J., et al. 2013. Enhanced heme function and mitochondrial respiration promote the progression of lung cancer cells. *PLoS ONE* 8: e63402.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



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Try **HCP1 (B-4): sc-393460**, our highly recommended monoclonal alternative to HCP1 (H-66).