SANTA CRUZ BIOTECHNOLOGY, INC.

HCP1 (G-20): sc-54206

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The Power to Question

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^+ and is insensitive to membrane potential. It exhibits high affinity for folic acid and low affinity for the PT523 antifolate. HCP1 is posttranslationally 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. Heme 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 heme 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. 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.
8. Zhao, R., et al. 2007. The spectrum of mutations in the PCFT gene, coding for an intestinal folate transporter, that are the basis for hereditary folate malabsorption. Blood 110: 1147-1152.

CHROMOSOMAL LOCATION

Genetic locus: Slc46a1 (mouse) mapping to 11 B5.

SOURCE

HCP1 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HCP1 of mouse origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-54206 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HCP1 (G-20) is recommended for detection of heme carrier protein 1 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 (G-20) is also recommended for detection of heme carrier protein 1 in additional species, including canine.

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

Molecular Weight of HCP1: 54 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Cherukad, J., et al. 2012. Spatial and temporal expression of folate-related transporters and metabolic enzymes during mouse placental development. Placenta 33: 440-448.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.