

HscB (P-13): sc-79528

BACKGROUND

HscB (HscB iron-sulfur cluster co-chaperone homolog (*E. coli*)), also known as HSC20, JAC1 or DnaJ homolog subfamily C member 20 (DNAJC20), is a 235 amino acid mitochondrial protein that functions as a co-chaperone in iron-sulfur cluster formation. Highly expressed in heart, liver and muscle, and belonging to the HscB family, HscB exists as a L-shaped crystal structure resembling *E. coli* HscB. Human HscB contains an N-terminal mitochondrial targeting signal followed by a J-domain and short loop. The C-terminal domain folds into a compact 3-helix bundle and likely mediates specific interactions with IscU. Containing 6 exons and 5 introns, the gene encoding HscB maps to human chromosome 22, which houses over 500 genes and is the second smallest human chromosome.

REFERENCES

1. Sun, G., Gargus, J.J., Ta, D.T. and Vickery, L.E. 2003. Identification of a novel candidate gene in the iron-sulfur pathway implicated in ataxia-susceptibility: human gene encoding HscB, a J-type co-chaperone. *J. Hum. Genet.* 48: 415-419.
2. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 608142. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Chandramouli, K. and Johnson, M.K. 2006. HscA and HscB stimulate [2Fe-2S] cluster transfer from IscU to apoferredoxin in an ATP-dependent reaction. *Biochemistry* 45: 11087-11095.
4. Qiu, X.B., Shao, Y.M., Miao, S. and Wang, L. 2006. The diversity of the DnaJ/Hsp40 family, the crucial partners for Hsp70 chaperones. *Cell. Mol. Life Sci.* 63: 2560-2570.
5. Johnson, D.C., Unciuleac, M.C. and Dean, D.R. 2006. Controlled expression and functional analysis of iron-sulfur cluster biosynthetic components within *Azotobacter vinelandii*. *J. Bacteriol.* 188: 7551-7561.
6. Unciuleac, M.C., Chandramouli, K., Naik, S., Mayer, S., Huynh, B.H., Johnson, M.K. and Dean, D.R. 2007. *In vitro* activation of apo-aconitase using a [4Fe-4S] cluster-loaded form of the IscU [Fe-S] cluster scaffolding protein. *Biochemistry* 46: 6812-6821.
7. Vickery, L.E. and Cupp-Vickery, J.R. 2007. Molecular chaperones HscA/Ssq1 and HscB/Jac1 and their roles in iron-sulfur protein maturation. *Crit. Rev. Biochem. Mol. Biol.* 42: 95-111.
8. Bitto, E., Bingman, C.A., Bittova, L., Kondrashov, D.A., Bannen, R.M., Fox, B.G., Markley, J.L. and Phillips, G.N. 2008. Structure of human J-type co-chaperone HscB reveals a tetracysteine metal-binding domain. *J. Biol. Chem.* 283: 30184-30192.

CHROMOSOMAL LOCATION

Genetic locus: HSCB (human) mapping to 22q12.1; Hscb (mouse) mapping to 5 F.

SOURCE

HscB (P-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HscB 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.

Blocking peptide available for competition studies, sc-79528 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HscB (P-13) is recommended for detection of HscB of mouse, rat and human 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).

HscB (P-13) is also recommended for detection of HscB in additional species, including equine and canine.

Suitable for use as control antibody for HscB siRNA (h): sc-75306, HscB siRNA (m): sc-75307, HscB shRNA Plasmid (h): sc-75306-SH, HscB shRNA Plasmid (m): sc-75307-SH, HscB shRNA (h) Lentiviral Particles: sc-75306-V and HscB shRNA (m) Lentiviral Particles: sc-75307-V.

Molecular Weight of HscB: 27 kDa.

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.

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 or our catalog for detailed protocols and support products.