

# MCJ (S-12): sc-83425

## BACKGROUND

The DnaJ family is one of the largest of all the chaperone families and has evolved with diverse cellular localization and functions. The presence of a J domain defines a protein as a member of the DnaJ family. DnaJ heat shock induced proteins are from the bacterium *Escherichia coli* and are under the control of the htpR regulatory protein. The DnaJ proteins play a critical role in the HSP 70 chaperone machine by interacting with HSP 70 to stimulate ATP hydrolysis. DnaJ proteins are important mediators of proteolysis and are involved in the regulation of protein degradation, exocytosis and endocytosis. MCJ (methylation-controlled J protein), also known as HSD18, DNAJD1 or DNAJC15, is a 150 amino acid ubiquitously expressed single-pass membrane protein containing one J domain. Localizing to the Golgi apparatus and only present in vertebrates, MCJ may be associated with increased chemotherapeutic resistance in ovarian cancer by inducing expression of the Mdr drug transporter and preventing intracellular drug accumulation.

## REFERENCES

- Saito, H. and Uchida, H. 1978. Organization and expression of the dnaJ and dnaK genes of *Escherichia coli* K12. *Mol. Gen. Genet.* 164: 1-8.
- Tomoyasu, T., Ogura, T., Tatsuta, T. and Bukau, B. 1998. Levels of DnaK and DnaJ provide tight control of heat shock gene expression and protein repair in *Escherichia coli*. *Mol. Microbiol.* 30: 567-581.
- Sin, H.S., Huh, J.W., Kim, D.S., Kim, T.H., Ha, H.S., Kim, W.Y., Park, H.K., Kim, C.M. and Kim, H.S. 2006. Endogenous retrovirus-related sequences provide an alternative transcript of MCJ genes in human tissues and cancer cells. *Genes Genet. Syst.* 81: 333-339.
- Lindsey, J.C., Lusher, M.E., Strathdee, G., Brown, R., Gilbertson, R.J., Bailey, S., Ellison, D.W. and Clifford, S.C. 2006. Epigenetic inactivation of MCJ (DNAJD1) in malignant paediatric brain tumours. *Int. J. Cancer* 118: 346-352.
- Mikata, R., Yokosuka, O., Fukai, K., Imazeki, F., Arai, M., Tada, M., Kurihara, T., Zhang, K., Kanda, T. and Saisho, H. 2006. Analysis of genes upregulated by the demethylating agent 5-aza-2'-deoxycytidine in gastric cancer cell lines. *Int. J. Cancer* 119: 1616-1622.
- Hatle, K.M., Neveu, W., Dienz, O., Rymarchyk, S., Barrantes, R., Hale, S., Farley, N., Lounsbury, K.M., Bond, J.P., Taatjes, D. and Rincón, M. 2007. Methylation-controlled J protein promotes c-Jun degradation to prevent ABCB1 transporter expression. *Mol. Cell. Biol.* 27: 2952-2966.
- Witham, J., Vidot, S., Agarwal, R., Kaye, S.B. and Richardson, A. 2008. Transient ectopic expression as a method to detect genes conferring drug resistance. *Int. J. Cancer* 122: 2641-2645.
- Kyuno, J., Masse, K. and Jones, E.A. 2008. A functional screen for genes involved in *Xenopus pronephros* development. *Mech. Dev.* 125: 571-586.
- Mitra, A., Shevde, L.A. and Samant, R.S. 2009. Multi-faceted role of HSP40 in cancer. *Clin. Exp. Metastasis* 26: 559-567.

## CHROMOSOMAL LOCATION

Genetic locus: DNAJC15 (human) mapping to 13q14.11; Dnajc15 (mouse) mapping to 14 D3.

## SOURCE

MCJ (S-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MCJ 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-83425 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

MCJ (S-12) is recommended for detection of MCJ 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).

MCJ (S-12) is also recommended for detection of MCJ in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for MCJ siRNA (h): sc-75761, MCJ siRNA (m): sc-75762, MCJ shRNA Plasmid (h): sc-75761-SH, MCJ shRNA Plasmid (m): sc-75762-SH, MCJ shRNA (h) Lentiviral Particles: sc-75761-V and MCJ shRNA (m) Lentiviral Particles: sc-75762-V.

Molecular Weight of MCJ: 16 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](http://www.scbt.com) or our catalog for detailed protocols and support products.