SANTA CRUZ BIOTECHNOLOGY, INC.

HSPA2 (K-12): sc-160010

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The heat shock proteins (HSPs) comprise a group of highly conserved, abundantly expressed proteins with diverse functions, including the assembly and sequestering of multiprotein complexes, the transportation of nascent polypeptide chains across cellular membranes and the regulation of protein folding. HSPA2 (heat shock 70kDa protein 2), also known as HSP70-2 or HSP70-3, is a 639 amino acid member of the heat shock 70 (HSP 70) family of proteins and is widely expressed with highest levels detected in testis and skeletal muscle. Like other members of the HSP 70 family, HSPA2 cooperates with chaperone proteins to both prevent protein aggregation and mediate the folding of newly expressed polypeptides in the cytosol. Through its ability to chaperone and regulate protein folding, HSPA2 is thought to be crucial for proper sperm maturation and function. Overexpression of HSPA2 is associated with breast cancer, suggesting a possible role for HSPA2 in tumor formation.

REFERENCES

1. Bonnycastle, L.L., et al. 1994. Cloning, sequencing, and mapping of the human chromosome 14 heat shock protein gene (HSPA2). Genomics 23: 85-93.
2. Huszar, G., et al. 2000. Putative creatine kinase M-isoform in human sperm is identifiedas the 70-kilodalton heat shock protein HspA2. Biol. Reprod. 63: 925-932.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 140560. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Lim, M.C., et al. 2003. gp120 neurotoxicity fails to induce heat shock defenses, while the over expression of hsp70 protects against gp120. Brain Res. Bull. 61: 183-188.
5. Debler, J., et al. 2003. Heat-shock protein HSP70-2 genotypes in patients with Crohn's disease: a more severe clinical course with intestinal complications in presence of the PstI-polymorphism. Eur. J. Med. Res. 8: 120-124.
6. Lima, S.B., et al. 2006. Expression of the HSPA2 gene in ejaculated spermatozoa from adolescents with and without varicocele. Fertil. Steril. 86: 1659-1663.

CHROMOSOMAL LOCATION

Genetic locus: HSPA2 (human) mapping to 14q23.3; Hspa2 (mouse) mapping to 12 C3.

SOURCE

HSPA2 (K-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HSPA2 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-160010 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HSPA2 (K-12) is recommended for detection of HSPA2 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); non cross-reactive with other HSPA family members.

HSPA2 (K-12) is also recommended for detection of HSPA2 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for HSPA2 siRNA (h): sc-92302, HSPA2 siRNA (m): sc-146099, HSPA2 shRNA Plasmid (h): sc-92302-SH, HSPA2 shRNA Plasmid (m): sc-146099-SH, HSPA2 shRNA (h) Lentiviral Particles: sc-92302-V and HSPA2 shRNA (m) Lentiviral Particles: sc-146099-V.

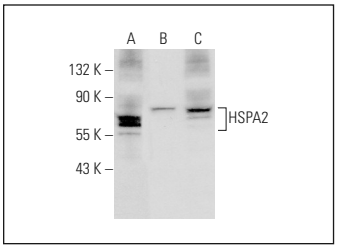
Molecular Weight of HSPA2: 70 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, A-431 whole cell lysate: sc-2201 or HSPA2 (h): 293T Lysate: sc-172432.

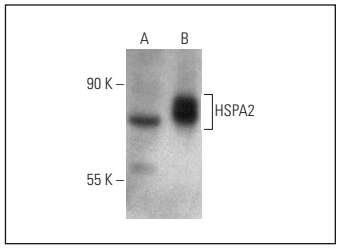
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



HSPA2 (K-12): sc-160010. Western blot analysis of HSPA2 expression in K-562 (**A**), A-431 (**B**) and A2058 (**C**) whole cell lysates.



HSPA2 (K-12): sc-160010. Western blot analysis of HSPA2 expression in non-transfected: sc-117752 (**A**) and human HSPA2 transfected: sc-172432 (**B**) 293T whole cell lysates.

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.