

GRP 75 (K-16): sc-31652

BACKGROUND

The HSP 70 family comprises four highly conserved proteins, HSP 70, HSC 70, GRP 75 and GRP 78, which serve a variety of roles. They act as molecular chaperones facilitating the assembly of multi-protein complexes, participate in the translocation of polypeptides across cell membranes and to the nucleus, and aid in the proper folding of nascent polypeptide chains. HSC 70, GRP 75 and GRP 78 are constitutively expressed in primate cells. HSP 70 expression is strongly induced in response to heat stress. HSP 70 and HSC 70, which are found in both the cytosol and nucleus of mammalian cells, play key roles in the cytosolic endoplasmic reticulum and mitochondrial import machinery. They are involved in chaperoning nascent polypeptide chains and in protecting cells against the accumulation of improperly folded proteins. GRP 75 and GRP 78 are unresponsive to heat stress and are induced by glucose deprivation. GRP 75 expression is restricted to the mitochondrial matrix and aids in the translocation and folding of nascent polypeptide chains of both nuclear and mitochondrial origin. GRP 78 is localized in the endoplasmic reticulum, where it receives imported secretory proteins and is involved in the folding and translocation of nascent peptide chains. Research indicates that members of the HSP 70 family may act as force-generating motors, relying on the hydrolysis of ATP for their activity.

REFERENCES

1. Martin, J., et al. 1992. Prevention of protein denaturation under heat stress by the chaperonin HSP 60. *Science* 258: 995-998.
2. Hatayama, T., et al. 1992. Effects of low culture temperature on the induction of HSP 70 mRNA and the accumulation of HSP 70 and HSP 105 in mouse FM3A cells. *J. Biochem.* 111: 484-490.
3. Haas, I.G. 1995. Protein-mediated protein maturation in eukaryotes. *FEBS Lett.* 369: 72-75.
4. Glick, B.S. 1995. Can HSP 70 proteins act as force-generating motors? *Cell* 80: 11-14.
5. Massa, S.M., et al. 1995. Cloning of rat GRP 75, an HSP 70-family member, and its expression in normal and ischemic brain. *J. Neurosci. Res.* 40: 807-819.

CHROMOSOMAL LOCATION

Genetic locus: HSPA9 (human) mapping to 5q31.2; Hspa9 (mouse) mapping to 18 B1.

SOURCE

GRP 75 (K-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of GRP 75 of human origin.

STORAGE

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

PROTOCOLS

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

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-31652 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GRP 75 (K-16) is recommended for detection of GRP 75 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).

GRP 75 (K-16) is also recommended for detection of GRP 75 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for GRP 75 siRNA (h): sc-35520, GRP 75 siRNA (m): sc-35521, GRP 75 shRNA Plasmid (h): sc-35520-SH, GRP 75 shRNA Plasmid (m): sc-35521-SH, GRP 75 shRNA (h) Lentiviral Particles: sc-35520-V and GRP 75 shRNA (m) Lentiviral Particles: sc-35521-V.

Molecular Weight of GRP 75: 75 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, HeLa whole cell lysate: sc-2200 or 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.

RESEARCH USE

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



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Try **GRP 75 (D-9): sc-133137**, our highly recommended monoclonal alternative to GRP 75 (K-16). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **GRP 75 (D-9): sc-133137**.