SANTA CRUZ BIOTECHNOLOGY, INC.

GRP 75 (C-19): sc-1058

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. 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. 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 75 and GRP 78 are unresponsive to heat stress and are induced by glucose deprivation. It has been postulated that members of the HSP 70 family act as force-generating motors, relying on the hydrolysis of ATP for their activity.

CHROMOSOMAL LOCATION

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

SOURCE

GRP 75 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of GRP 75 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-1058 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GRP 75 (C-19) 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), 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), immunohistochemistry (including paraffin-embedded sections) (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 (C-19) is also recommended for detection of GRP 75 in additional species, including bovine.

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.

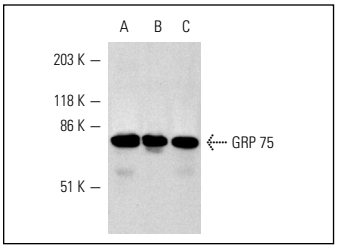
Molecular Weight of GRP 75: 75 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214.

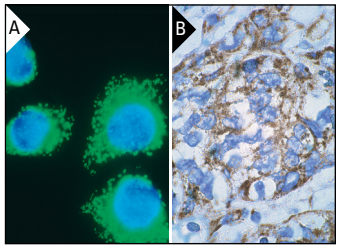
STORAGE

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

DATA



GRP 75 (C-19): sc-1058. Western blot analysis of GRP 75 expression in NIH/3T3 (**A**), KNRK (**B**) and HeLa (**C**) whole cell lysates.



GRP 75 (C-19): sc-1058. Immunofluorescence staining of methanol-fixed HeLa cells showing punctate cytoplasmic immunostaining and nuclear DAPI counterstain (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon carcinoma tissue showing localized staining within the cytoplasm (**B**).

SELECT PRODUCT CITATIONS

1. Paquette, J.C., et al. 2005. Rapid induction of the intrinsic apoptotic pathway by L-Glutamine starvation. J. Cell. Physiol. 202: 912-921.
2. Komarov, A.P., et al. 2008. Functional genetic screening reveals the role of mitochondrial cytochrome b as a mediator of FAS-induced apoptosis. Proc. Natl. Acad. Sci. USA 105: 14453-14458.
3. Pimkina, J., et al. 2009. ARF induces autophagy by virtue of interaction with Bcl-x_L. J. Biol. Chem. 284: 2803-2810.
4. Miyoshi, K., et al. 2009. Localization of adenylate kinase 4 in mouse tissues. Acta Histochem. Cytochem. 42: 55-64.
5. Qian, J., et al. 2010. The mitochondrial protein hTID-1 partners with the caspase-cleaved adenomatous polyposis cell tumor suppressor to facilitate apoptosis. Gastroenterology 138: 1418-1428.
6. Zhang, G., et al. 2011. Chaperone proteins and winter survival by a freeze tolerant insect. J. Insect Physiol. 57: 1115-1122.
7. Frank, A.K., et al. 2011. Wild-type and mutant p53 proteins interact with mitochondrial caspase-3. Cancer Biol. Ther. 11: 740-745.
8. Hwang, S., et al. 2015. Impaired GAPDH-induced mitophagy contributes to the pathology of Huntington's disease. EMBO Mol. Med. 7: 1307-1326.

RESEARCH USE

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