

GrpEL2 (P-13): sc-164555

BACKGROUND

GrpEL2 (GrpE protein homolog 2) is a 225 amino acid mitochondrial matrix protein and component of the PAM complex. Consisting of Tim44, Tim14, HSP 70, Magmas, GrpEL1 and GrpEL2, the PAM complex plays an essential role in the ATP-dependent translocation of transit peptide-containing proteins to the mitochondrial matrix from the inner membrane. GrpEL2 regulates the nucleotide-dependent binding of mitochondrial HSP70 to substrate proteins and stimulates its ATPase activity. The gene encoding GrpEL2 maps to human chromosome 5, which contains 181 million base pairs and comprises nearly 6% of the human genome. Deletion of the p arm of chromosome 5 leads to Cri du chat syndrome, while deletion of the q arm or of chromosome 5 altogether is common in therapy-related acute myelogenous leukemias and myelodysplastic syndrome.

REFERENCES

- Naylor, D.J., et al. 1998. Evidence for the existence of distinct mammalian cytosolic, microsomal, and two mitochondrial GrpE-like proteins, the Co-chaperones of specific Hsp70 members. *J. Biol. Chem.* 273: 21169-21177.
- Vera-Carbonell, A., et al. 2009. Characterization of a *de novo* complex chromosomal rearrangement in a patient with cri-du-chat and trisomy 5p syndromes. *Am. J. Med. Genet. A* 149A: 2513-2521.
- Ravandi, F., et al. 2009. Superior outcome with hypomethylating therapy in patients with acute myeloid leukemia and high-risk myelodysplastic syndrome and chromosome 5 and 7 abnormalities. *Cancer* 115: 5746-5751.
- Sazawal, S., et al. 2009. Haematological & molecular profile of acute myelogenous leukaemia in India. *Indian J. Med. Res.* 129: 256-261.
- Choudhary, C., et al. 2009. Lysine acetylation targets protein complexes and co-regulates major cellular functions. *Science* 325: 834-840.
- Sinha, D., et al. 2010. Role of Magmas in protein transport and human mitochondria biogenesis. *Hum. Mol. Genet.* 19: 1248-1262.
- Cui, W., et al. 2011. Membrane binding mechanism of yeast mitochondrial peripheral membrane protein TIM44. *Protein Pept. Lett.* 18: 718-725.

CHROMOSOMAL LOCATION

Genetic locus: GRPEL2 (human) mapping to 5q32; Grpel2 (mouse) mapping to 18 E1.

SOURCE

GrpEL2 (P-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GrpEL2 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-164555 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GrpEL2 (P-13) is recommended for detection of GrpEL2 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 GrpEL1.

GrpEL2 (P-13) is also recommended for detection of GrpEL2 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for GrpEL2 siRNA (h): sc-91628, GrpEL2 siRNA (m): sc-145782, GrpEL2 shRNA Plasmid (h): sc-91628-SH, GrpEL2 shRNA Plasmid (m): sc-145782-SH, GrpEL2 shRNA (h) Lentiviral Particles: sc-91628-V and GrpEL2 shRNA (m) Lentiviral Particles: sc-145782-V.

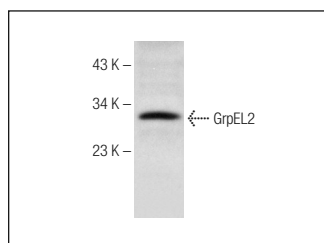
Molecular Weight of GrpEL2: 25 kDa.

Positive Controls: Human bronchus tissue extract.

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



GrpEL2 (P-13): sc-164555. Western blot analysis of GrpEL2 expression in human bronchus tissue extract.

RESEARCH USE

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