

CLPX (S-14): sc-162692

BACKGROUND

CLPX (ClpX caseinolytic peptidase X homolog), also known as ATP-dependent Clp protease ATP-binding subunit clpX-like, mitochondrial or energy-dependent regulator of proteolysis, is a 633 amino acid mitochondrial protein that exists as a heterodimer with ClpP. Expressed in heart and skeletal muscle and belonging to the CLPX chaperone family, CLPX is also found at lower levels in pancreas, brain, liver, lung and kidney. CLPX is encoded by a gene that maps to human chromosome 15, which houses over 700 genes and comprises nearly 3% of the human genome. Angelman syndrome, Prader-Willi syndrome, Tay-Sachs disease and Marfan syndrome are all associated with defects in chromosome 15-localized genes.

REFERENCES

- Hurowitz, G.I., et al. 1993. Neuropsychiatric aspects of adult-onset Tay-Sachs disease: two case reports with several new findings. *J. Neuropsychiatry Clin. Neurosci.* 5: 30-36.
- Santagata, S., et al. 1999. Molecular cloning and characterization of a mouse homolog of bacterial ClpX, a novel mammalian class II member of the HSP 100/Clp chaperone family. *J. Biol. Chem.* 274: 16311-16319.
- Corydon, T.J., et al. 2000. Human and mouse mitochondrial orthologs of bacterial ClpX. *Mamm. Genome.* 11: 899-905.
- Kang, S.G., et al. 2002. Functional proteolytic complexes of the human mitochondrial ATP-dependent protease, hClpXP. *J. Biol. Chem.* 277: 21095-21102.
- Kang, S.G., et al. 2005. Human mitochondrial ClpP is a stable heptamer that assembles into a tetradecamer in the presence of ClpX. *J. Biol. Chem.* 280: 35424-35432.
- Midla, G.S. 2008. Diagnosis and management of patients with Marfan syndrome. *JAAPA* 21: 21-25.
- Martin, A., et al. 2008. Diverse pore loops of the AAA⁺ ClpX machine mediate unassisted and adaptor-dependent recognition of ssrA-tagged substrates. *Mol. Cell* 29: 441-450.

CHROMOSOMAL LOCATION

Genetic locus: CLPX (human) mapping to 15q22.31; ClpX (mouse) mapping to 9 C.

SOURCE

CLPX (S-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CLPX 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-162692 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

CLPX (S-14) is recommended for detection of CLPX 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).

CLPX (S-14) is also recommended for detection of CLPX in additional species, including bovine.

Suitable for use as control antibody for CLPX siRNA (h): sc-89961, CLPX siRNA (m): sc-142403, CLPX shRNA Plasmid (h): sc-89961-SH, CLPX shRNA Plasmid (m): sc-142403-SH, CLPX shRNA (h) Lentiviral Particles: sc-89961-V and CLPX shRNA (m) Lentiviral Particles: sc-142403-V.

Molecular Weight of CLPX: 69 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.

PROTOCOLS

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