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Zuschläge

- Mindermengenzuschlag
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- Gefahrgutzuschlag
- Expressversand

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ClpP (h): 293T Lysate: sc-170292

BACKGROUND

ATP-dependent proteases were first identified in *E. coli*. One of these is called ClpAP or Ti, which consists of a regulatory unit, ClpA, with chaperone characteristics and an ATPase domain, and a proteolytic subunit, ClpP. This protease is involved in ATP-dependent degradation of incorrectly folded or unfolded proteins. The mammalian ClpP protein belongs to the peptidase family S14 and hydrolyzes proteins into small peptides in the presence of ATP and magnesium. ClpP is transported into mitochondrial matrix and is associated with the inner mitochondrial membrane. The functional form of ClpP is a hollow-cored particle composed of two heptameric rings joined face-to-face forming an aqueous chamber containing the proteolytic active sites. ClpX binds substrates bearing specific classes of peptide signals, denatures these proteins, and translocates them through the central pore of ClpP for degradation. ClpP displays high expression levels in skeletal muscle, intermediate levels in heart, liver and pancreas, and low levels in brain, placenta, lung and kidney.

REFERENCES

1. Bross, P., et al. 1996. Human ClpP protease: cDNA sequence, tissue-specific expression and chromosomal assignment of the gene. *FEBS Lett.* 377: 249-252.
2. Corydon, T.J., et al. 1998. A human homologue of *Escherichia coli* ClpP caseinolytic protease: recombinant expression, intracellular processing and subcellular localization. *Biochem. J.* 331: 309-316.
3. de Sagarra, M.R., et al. 1999. Mitochondrial localization and oligomeric structure of hClpP, the human homologue of *E. coli* ClpP. *J. Mol. Biol.* 292: 819-825.
4. Zhao, Q., et al. 2002. A mitochondrial specific stress response in mammalian cells. *EMBO J.* 21: 4411-4419.
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6. Kang, S.G., et al. 2004. Crystallography and mutagenesis point to an essential role for the N-terminus of human mitochondrial ClpP. *J. Struct. Biol.* 148: 338-352.
7. Gribun, A., et al. 2005. The ClpP double ring tetradecameric protease exhibits plastic ring-ring interactions, and the N termini of its subunits form flexible loops that are essential for ClpXP and ClpAP complex formation. *J. Biol. Chem.* 280: 16185-16196.
8. 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.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: CLPP (human) mapping to 19p13.3.

PRODUCT

ClpP (h): 293T Lysate represents a lysate of human ClpP transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

ClpP (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive ClpP antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RESEARCH USE

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