

CRTAP (S-14): sc-99366

BACKGROUND

CRTAP (cartilage associated protein), also known as CASP or LEPREL3 (leprecan-like 3), is a secreted protein localizing to the extracellular space that plays a role in collagen post-translational modifications, extracellular fibril assembly and intracellular trafficking. CRTAP is widely expressed with predominant expression in articular chondrocytes. It contains a signal peptide and a tetratricopeptide-like helical domain and is essential for normal bone formation. In the endoplasmic reticulum (ER), CRTAP forms a complex with Gros1 and CyPB (cyclophilin B) and is required for the efficient 3-hydroxylation of target prolyl residues in Collagen Type I molecules, the major structural proteins of skin and bone. Mutations in the gene encoding CRTAP can lead to autosomal recessive osteogenesis imperfecta (OI) type 7 and type 2B. OI, also known as brittle bone disease, is characterized by bone fragility and susceptibility to fractures. OI type 7 is a mild form of this disorder, while OI type 2B is a neonatal lethal condition.

REFERENCES

1. Castagnola, P., et al. 1997. Cartilage associated protein (CASP) is a novel developmentally regulated chick embryo protein. *J. Cell Sci.* 110: 1351-1359.
2. Morello, R., et al. 1999. cDNA cloning, characterization and chromosome mapping of CRTAP encoding the mouse cartilage associated protein. *Matrix Biol.* 18: 319-324.
3. Tonachini, L., et al. 1999. cDNA cloning, characterization and chromosome mapping of the gene encoding human cartilage associated protein (CRTAP). *Cytogenet. Cell Genet.* 87: 191-194.
4. Barnes, A.M., et al. 2006. Deficiency of cartilage-associated protein in recessive lethal osteogenesis imperfecta. *N. Engl. J. Med.* 355: 2757-2764.
5. Morello, R., et al. 2006. CRTAP is required for prolyl 3-hydroxylation and mutations cause recessive osteogenesis imperfecta. *Cell* 127: 291-304.
6. Martin, E. and Shapiro, J.R. 2007. Osteogenesis imperfecta: epidemiology and pathophysiology. *Curr. Osteoporos. Rep.* 5: 91-97.
7. Kwan, T., et al. 2007. Heritability of alternative splicing in the human genome. *Genome Res.* 17: 1210-1218.

CHROMOSOMAL LOCATION

Genetic locus: CRTAP (human) mapping to 3p22.3; Crtap (mouse) mapping to 9 F3.

SOURCE

CRTAP (S-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CRTAP 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-99366 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

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

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

Suitable for use as control antibody for CRTAP siRNA (h): sc-77940, CRTAP siRNA (m): sc-142588, CRTAP shRNA Plasmid (h): sc-77940-SH, CRTAP shRNA Plasmid (m): sc-142588-SH, CRTAP shRNA (h) Lentiviral Particles: sc-77940-V and CRTAP shRNA (m) Lentiviral Particles: sc-142588-V.

Molecular Weight of CRTAP: 47 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or U-2 OS cell lysate: sc-2295.

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.

RESEARCH USE

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

PROTOCOLS

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



Try **CRTAP (E-1): sc-393136** or **CRTAP (D-1): sc-376617**, our highly recommended monoclonal alternatives to CRTAP (S-14).