

CRTAP (D-1): sc-376617

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., et al. 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 (D-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 355-387 near the C-terminus of CRTAP of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376617 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CRTAP (D-1) is recommended for detection of CRTAP of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

CRTAP (D-1) is also recommended for detection of CRTAP in additional species, including canine and porcine.

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.

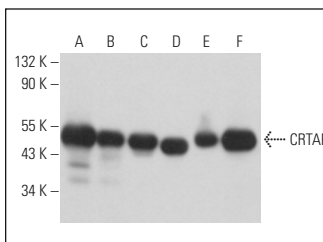
Molecular Weight of CRTAP: 47 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or U-2 OS cell lysate: sc-2295.

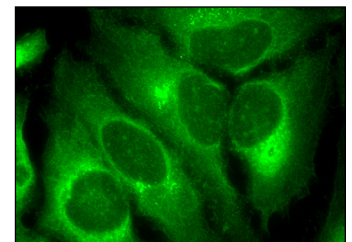
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CRTAP (D-1): sc-376617. Western blot analysis of CRTAP expression in HeLa (A), U-2 OS (B), Hep G2 (C), EOC 20 (D), KNRK (E) and A-10 (F) whole cell lysates.



CRTAP (D-1): sc-376617. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

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.