

cementum attachment protein (3G9): sc-53947

BACKGROUND

Cementum attachment protein, also referred to as CAP, is a collagenous protein that is expressed in the matrix of tooth cementum. This protein binds with high affinity to non-demineralized root surfaces, hydroxyapatite and Fibronectin. It promotes attachment of mesenchymal cells and may function in cementogenesis. Cementum attachment protein is capable of recruiting putative cementoblastic populations on root slices *in vitro*, thereby implicating this protein in periodontal homeostasis and wound healing. Integrin $\alpha 5\beta 1$ is responsible for mediating the attachment to cementum attachment protein of the periodontal-derived cells, human gingival fibroblasts and human periodontal ligament fibroblasts.

CHROMOSOMAL LOCATION

Genetic locus: HACD1 (human) mapping to 10p12.33; Hacd1 (mouse) mapping to 2 A1.

SOURCE

cementum attachment protein (3G9) is a mouse monoclonal antibody raised against cementum attachment protein of bovine origin.

PRODUCT

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

cementum attachment protein (3G9) is available conjugated to agarose (sc-53947 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53947 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53947 PE), fluorescein (sc-53947 FITC), Alexa Fluor[®] 488 (sc-53947 AF488), Alexa Fluor[®] 546 (sc-53947 AF546), Alexa Fluor[®] 594 (sc-53947 AF594) or Alexa Fluor[®] 647 (sc-53947 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-53947 AF680) or Alexa Fluor[®] 790 (sc-53947 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

cementum attachment protein (3G9) is recommended for detection of cementum attachment protein of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

cementum attachment protein (3G9) is also recommended for detection of cementum attachment protein in additional species, including bovine.

Molecular Weight of cementum attachment protein: 56 kDa.

Positive Controls: mouse heart extract: sc-2254, mouse skeletal muscle extract: sc-364250 or rat skeletal muscle extract: sc-364810.

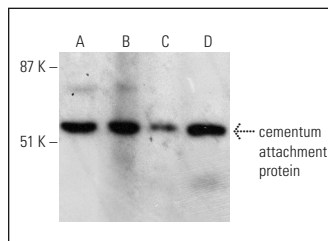
RESEARCH USE

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

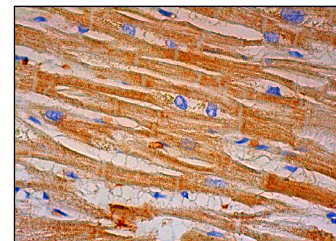
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



cementum attachment protein (3G9) HRP: sc-53947 HRP. Direct western blot analysis of cementum attachment protein expression in human heart (A), mouse heart (B), mouse skeletal muscle (C) and rat skeletal muscle (D) tissue extracts.



cementum attachment protein (3G9): sc-53947. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

- Jung, H.S., et al. 2011. Directing the differentiation of human dental follicle cells into cementoblasts and/or osteoblasts by a combination of HERS and pulp cells. *J. Mol. Histol.* 42: 227-235.
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- Yin, X., et al. 2017. Growth/differentiation factor-5 promotes *in vitro/vivo* periodontal specific differentiation of induced pluripotent stem cell-derived mesenchymal stem cells. *Exp. Ther. Med.* 14: 4111-4117.
- Hong, H.H., et al. 2019. Calcitriol exerts a mineralization-inductive effect comparable to that of vitamin C in cultured human periodontium cells. *Am. J. Transl. Res.* 11: 2304-2316.
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- Imber, J.C., et al. 2021. Immunohistochemical evaluation of periodontal regeneration using a porous collagen scaffold. *Int. J. Mol. Sci.* 22: 10915.
- E, L.L., et al. 2021. Effects of rhBMP-2 on bone formation capacity of rat dental stem/progenitor cells from dental follicle and alveolar bone marrow. *Stem Cells Dev.* 30: 441-457.
- Wang, H., et al. 2022. Mechanisms of sphingosine-1-phosphate (S1P) signaling on excessive stress-induced root resorption during orthodontic molar intrusion. *Clin. Oral Investig.* 26: 1003-1016.
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PROTOCOLS

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