

Amelogenin (F-11): sc-365284

BACKGROUND

Dental enamel is a highly mineralized tissue with most of its volume occupied by large, highly organized, hydroxyapatite crystals. This structure is thought to be controlled through the interaction of many organic matrix molecules including Amelogenin, Ameloblastin, Enamelin, Tuftelin and several other enzymes. All of these secreted proteins are involved in the mineralization and enamel matrix formation in developing tooth enamel. The gene AMELX which encodes for the protein Amelogenin, is encoded on the X-chromosome. Amelogenin, also designated AMG, AMGX or AMEX, is involved in biomineralization and organization of developing enamel. It functions by regulating crystallite formation during the secretory stage of enamel development. Amelogenin, which localizes to the extracellular matrix, is expressed by ameloblasts and is the predominant protein in developing dental enamel. Defects in the AMELX gene can cause amelogenesis imperfecta hypoplastic type 1 (AIH1) which is an X-linked disease that affects the formation of tooth enamel.

REFERENCES

1. Nakahori, Y., et al. 1991. A human X-Y homologous region encodes Amelogenin. *Genomics* 9: 264-269.
2. Catalano-Sherman, J., et al. 1993. Amino acid sequence of a major human Amelogenin protein employing Edman degradation and cDNA sequencing. *J. Dent. Res.* 72: 1566-1572.

CHROMOSOMAL LOCATION

Genetic locus: AMELX (human) mapping to Xp22.2; Amelx (mouse) mapping to X F5.

SOURCE

Amelogenin (F-11) is a mouse monoclonal antibody raised against amino acids 1-191 representing full length Amelogenin X isoform 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.

Amelogenin (F-11) is available conjugated to agarose (sc-365284 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365284 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365284 PE), fluorescein (sc-365284 FITC), Alexa Fluor® 488 (sc-365284 AF488), Alexa Fluor® 546 (sc-365284 AF546), Alexa Fluor® 594 (sc-365284 AF594) or Alexa Fluor® 647 (sc-365284 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365284 AF680) or Alexa Fluor® 790 (sc-365284 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

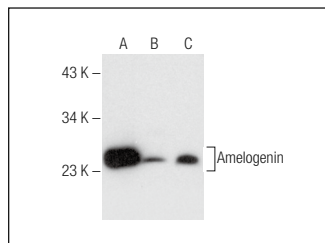
Amelogenin (F-11) is recommended for detection of Amelogenin X and Amelogenin Y isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Amelogenin siRNA (h): sc-44845, Amelogenin siRNA (m): sc-44846, Amelogenin shRNA Plasmid (h): sc-44845-SH, Amelogenin shRNA Plasmid (m): sc-44846-SH, Amelogenin shRNA (h) Lentiviral Particles: sc-44845-V and Amelogenin shRNA (m) Lentiviral Particles: sc-44846-V.

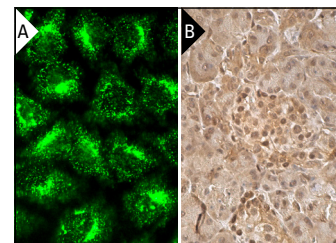
Molecular Weight of Amelogenin: 24 kDa.

Positive Controls: P19 cell lysate: sc-24760, NIH/3T3 whole cell lysate: sc-2210 or LADMAC whole cell lysate: sc-364189.

DATA



Amelogenin (F-11): sc-365284. Western blot analysis of Amelogenin expression in P19 (A), NIH/3T3 (B) and LADMAC (C) whole cell lysates.



Amelogenin (F-11): sc-365284. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic and nuclear staining of islets of Langerhans and glandular cells (B).

SELECT PRODUCT CITATIONS

1. Fukuda, T., et al. 2013. Identification of novel Amelogenin-binding proteins by proteomics analysis. *PLoS ONE* 8: e78129.
2. Toyoda, K., et al. 2016. Grp78 is critical for Amelogenin-induced cell migration in a multipotent clonal human periodontal ligament cell line. *J. Cell. Physiol.* 231: 414-427.
3. Jiang, B., et al. 2019. The inhibition of glycosaminoglycan incorporation influences the cell proliferation and cytodifferentiation in cultured embryonic mouse molars. *J. Mol. Histol.* 50: 11-19.
4. Yotsumoto, K., et al. 2020. Amelogenin downregulates interferon γ-induced major histocompatibility complex class II expression through suppression of euchromatin formation in the class II transactivator promoter IV region in macrophages. *Front. Immunol.* 11: 709.

RESEARCH USE

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