

# Enamelin (C-18): sc-33107

## 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, enamel, tuftelin and several other enzymes. All of these secreted proteins are involved in the mineralization and enamel matrix formation in developing tooth enamel. Enamelin (ENAM) localizes to the extracellular matrix. During the secretory stage of enamel formation, it plays a role in enamel extension. Enamelin is expressed in odontoblasts, cementoblasts and ameloblasts. Defects in the gene encoding for enamel, ENAM, may cause hypoplastic amelogenesis imperfecta 2 (AIH2) which is an autosomal dominant disease characterized by anomalies in enamel development.

## REFERENCES

1. Torres-Quintana, M.A., et al. 2005. Ameloblastin and amelogenin expression in postnatal developing mouse molars. *J. Oral Sci.* 47: 27-34.
2. Wang, H., et al. 2005. Enamel matrix protein interactions. *J. Bone Miner. Res.* 20: 1032-1040.
3. Paine, M.L., et al. 2005. Tooth developmental biology: disruptions to enamel-matrix assembly and its impact on biomineralization. *Orthod. Craniofac. Res.* 8: 239-251.
4. Masuya, H., et al. 2005. Enamelin (ENAM) is essential for amelogenesis: ENU-induced mouse mutants as models for different clinical subtypes of human amelogenesis imperfecta (AI). *Hum. Mol. Genet.* 14: 575-583.
5. Kim, J.W., et al. 2005. ENAM mutations in autosomal-dominant amelogenesis imperfecta. *J. Dent. Res.* 84: 278-282.
6. Mizuno, N., et al. 2005. Characterization of epithelial cells derived from periodontal ligament by gene expression patterns of bone-related and enamel proteins. *Cell Biol. Int.* 29: 111-117.

## CHROMOSOMAL LOCATION

Genetic locus: ENAM (human) mapping to 4q13.3; Enam (mouse) mapping to 5 E1.

## SOURCE

Enamelin (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Enamelin 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-33107 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

Enamelin (C-18) is recommended for detection of Enamelin 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).

Suitable for use as control antibody for Enamelin siRNA (h): sc-44947, Enamelin siRNA (m): sc-44948, Enamelin shRNA Plasmid (h): sc-44947-SH, Enamelin shRNA Plasmid (m): sc-44948-SH, Enamelin shRNA (h) Lentiviral Particles: sc-44947-V and Enamelin shRNA (m) Lentiviral Particles: sc-44948-V.

Molecular Weight of Enamelin: 129 kDa.

## 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.

## SELECT PRODUCT CITATIONS

1. Hatakeyama, S., et al. 2011. Establishment of human dental epithelial cell lines expressing ameloblastin and enamel by transfection of hTERT and cdk4 cDNAs. *J. Oral Pathol. Med.* 40: 227-234.
2. Borovjagin, A.V., et al. 2011. Adenovirus gene transfer to amelogenesis imperfecta ameloblast-like cells. *PLoS ONE* 6: e24281.
3. Ferro, F., et al. 2011. Adipose tissue-derived stem cell *in vitro* differentiation in a three-dimensional dental bud structure. *Am. J. Pathol.* 178: 2299-2310.
4. Landin, M.A., et al. 2012. Gene expression profiling during murine tooth development. *Front. Genet.* 3: 139.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.


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Try **Enamelin (2C12): sc-293334**, our highly recommended monoclonal alternative to Enamelin (C-18).