

Odontogenesis

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Odontogenesis is the formation and development of teeth. Tooth development can be divided into three overlapping phases. initiation, morphogenesis and histogenesis. During initiation, the oral epithelium folds inwards to form the tooth germs and the site of tooth development. Then undifferentiated mesenchymal cells migrates to the site of tooth formation and proliferates to determine the shape of the tooth during the morphogenesis phase. During histogenesis, differentiation of cells proceeds to give rise to the mature dental tissues. Tooth development is divided into roughly into 5 stages. These are the bud stage, cap stage, bell stage, dentinogenesis and amelogenesis. ([From the Wikipedia article Odontogenesis.](#))



Recent Publications on Odontogenesis:

- [Multilevel complex interactions between genetic, epigenetic and environmental factors in the aetiology of anomalies of dental development.](#)
Dental anomalies are caused by complex interactions between genetic,... 17th November, 2009
International Collaborating Centre in Oro-facial Genetics and Development,- Arch Oral Biol. 2009 Nov 11. ([DOI Direct Link](#))
- [Differential effects of growth differentiation factor-5 on porcine dental papilla- and follicle-derived cells.](#)
In this study, the effect of growth differentiation factor-5 (GDF-5) on... 17th November, 2009
Department of Oral and Maxillofacial Surgery, Nagoya University Graduate- Growth Factors. 2009 Nov 13.
- [Controlling the number of tooth rows.](#)
The organization and renewal capacity of teeth vary greatly among... 17th November, 2009
Institute of Biotechnology, University of Helsinki, Helsinki, Finland.- Sci Signal. 2009 Aug 25;2(85):pe53. ([DOI Direct Link](#))
- [WNT5A inhibits human dental papilla cell proliferation and migration.](#)
WNT proteins are a large family of cysteine-rich secreted molecules that... 3rd November, 2009
West China Hospital of Stomatology, Sichuan University, Chengdu, Sichuan,- Biochem Biophys Res Commun. 2009 Oct 28. ([DOI Direct Link](#))
- [Primary cilia of odontoblasts: possible role in molar morphogenesis.](#)
A primary cilium, a sensory organelle present in almost every vertebrate... 3rd November, 2009
University of Lyon, Villeurbanne, F-69100, France.- J Dent Res. 2009 Oct;88(10):910-5. ([DOI Direct Link](#))
- [Runx2, osx, and dspp in tooth development.](#)
The transcription factors Runx2 and Osx are necessary for osteoblast and... 3rd November, 2009
Department of Pediatric Dentistry, TheUniversity of Texas Health Science- J Dent Res. 2009 Oct;88(10):904-9. ([DOI Direct Link](#))
- [The impact of fluoride on ameloblasts and the mechanisms of enamel fluorosis.](#)

*Intake of excess amounts of fluoride during tooth development cause enamel...*3rd November, 2009
Department of Oral Cell Biology, ACTA, University of Amsterdam and VU- J Dent Res. 2009
Oct;88(10):877-93. ([DOI Direct Link](#))

- [Craniofacial characteristics of patients with heart disease.](#)
*INTRODUCTION: Children with congenital heart disease commonly experience...*30th October, 2009
Department of Orthodontics, State University of Rio de Janeiro, Rio de- Am J Orthod Dentofacial
Orthop. 2009 Oct;136(4):554-8. ([DOI Direct Link](#))
- [The matricellular protein Periostin is required for Sclerostin inhibition and the anabolic response to mechanical loading and physical activity.](#)
*Periostin (gene Postn) is a secreted extracellular matrix protein involved...*20th October, 2009
Division of Bone Diseases, Switzerland;- J Biol Chem. 2009 Oct 16. ([DOI Direct Link](#))
- [Impact of radiation and chemotherapy on risk of dental abnormalities: a report from the Childhood Cancer Survivor Study.](#)
*BACKGROUND:: The current study was performed to describe frequencies and...*17th October, 2009
Department of Radiological Sciences, St. Jude Children's Research- Cancer. 2009 Oct 15. ([DOI Direct Link](#))
- [Odontogenic ameloblast associated protein as a novel biomarker for human breast cancer.](#)
*Odontogenic Ameloblast Associated Protein (ODAM) is a protein isolated in...*10th October, 2009
Department of Surgery, University of Tennessee Medical Center, Knoxville,- Am Surg. 2009
Sep;75(9):769-75; discussion 775.
- [Stem cell regulatory gene expression in human adult dental pulp and periodontal ligament cells undergoing odontogenic/osteogenic differentiation.](#)
*INTRODUCTION: During development and regeneration, odontogenesis and...*6th October, 2009
Department of Operative Dentistry, Guanghua School of Stomatology, Sun- J Endod. 2009
Oct;35(10):1368-76. Epub 2009 Aug 28. ([DOI Direct Link](#))
- [Post-translational Regulation of Runx2 in Bone and Cartilage.](#)
*The Runx2 gene product is essential for mammalian bone development. In...*30th September, 2009
Department of Orthopaedics, Center for Musculoskeletal Research,- J Dent Res. 2009
Aug;88(8):693-703. ([DOI Direct Link](#))
- [Polymorphism in the Msx1 gene associated with hypodontia in a Brazilian family.](#)
*Tooth development is regulated by a reciprocal series of...*25th September, 2009
Laboratory of Biopathology and Molecular Biology, University of Uberaba,- J Oral Sci. 2009
Sep;51(3):341-5.
- [Expression of typical calpains in mouse molar.](#)
*OBJECTIVE: Calpain is a calcium ion-dependent cysteine protease,...*18th August, 2009
Department of Oral Pathology and Diagnosis, Showa University School of- Arch Oral Biol. 2009
Oct;54(10):885-92. Epub 2009 Aug 14. ([DOI Direct Link](#))

Odontogenesis Patents:



- 7588936- [Generating teeth from bone marrow cells](#)
- 5240415- [Dental bleach system having separately compartmented fumed silica and hydrogen peroxide and method of using](#)
- 5766011- [Dental bleaching composition and method](#)

- 5874562- [Nucleic acid encoding developmentally-regulated endothelial cell locus-1](#)
- 5877281- [Developmentally-regulated endothelial cell locus-1](#)
- 6846182- [Dental bleaching composition and method](#)
- 7041801- [Antibodies binding to polypeptides encoded by developmentally-regulated endothelial cell locus-1](#)
- 7148036- [DNA molecules encoding cartilage-derived morphogenetic proteins](#)
- 7220558- [Cartilage-derived morphogenetic proteins](#)
- 7223751- [Sulfonamide derivatives, intermediate thereof, its preparation methods, and pharmaceutical composition comprising the same](#)
- 7365153- [Biologically active peptide and agent containing the same](#)
- 7384652- [Complexed-acidic-phospholipid-collagen composites for bone induction](#)
- 7497686- [Bone regeneration](#)
- 7498168- [Tooth progenitor cell and method for its production](#)
- 7531321- [Fibroblast growth factor-like molecules and uses thereof](#)
- 4770633- [Wax shaping tool](#)

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