# Molecular Craniofacial Embryology

## 1. Staffs and Students (April.2009)

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|---|---|---|
| Professor | Sachiko Iseki | |
| Associate Professor | Masa-Aki Ikeda | |
| Assistant Professor | Masato Ota | |
| Part-time lecturer | Shumpei Yamada, | Shigeru Okuhara |
| | Kazumasa Kubota | |
| Graduate Student | Juan Liu(Gerodontology), | Ryousuke Nagaoka(Maxillofacial Surgery) |
| | Yuki Date(Oral Implantology and Regenerative Dental Medicine Dental Implant Clinic) | |
| | Teng Ma, | Widya Lestari(April～), |
| | Khandakar Abu Shameem MD. Saadat(April～), | |
| | Eiko Ozono, | Megumi Otsu |
| | Shihoko Shimizu | |
| Foreign Researcher | Olivier Philippe | |

## 2. Purpose of education

Section of Molecular Craniofacial Embryology studies molecular mechanisms of craniofacial morphogenesis including regulation of cell proliferation and differentiation, and apply these achievements to regenerative medicine. Main objective of our section in the graduate course is to provide students with opportunities to define the research topic by themselves with the advice of laboratory staffs. Students can learn research laboratory techniques according to their projects, ways to make strategies, and scientific English writing.

## 3. Research subjects

1) Molecular mechanisms of mammalian craniofacial development
2) Application of developmental mechanisms to regenerative medicine
3) Identification of tissue stem cells in craniofacial region and molecular mechanism of the mechanism of their stemness
4) Regulation of gene expression in cell growth and stress response
5) Nuclear architecture and function in regulating gene expression
6) Dysregulation of tumor suppressors in oral cancer

## 4. Publications

### Original articles


1. Harada M, Murakami H, Okawa A, Okimoto N, Hiraoka S, Nakahara T, Akasaka R, Shiraishi Y, Futatsugi N, Mizutani-Koseki Y, Kuroiwa A, Shirouzu M, Yokoyama S, Taiji M, Iseki S, Ornitz DM, Koseki H. FGF9 monomer-dimer equilibrium regulates extracellular matrix affinity and tissue diffusion. *Nat Genet*. 41(3):289-98. 2009.
2. Ozono E, Komori H, Iwanaga R, Ikeda MA, Iseki S, Ohtani K. E2F-like elements in p27(Kip1) promoter specifically sense deregulated E2F activity. *Genes Cells*. 14(1):89-99. 2009.
3. Shikanai M, Asahina K, Iseki S, Teramoto K, Nishida T, Shimizu-Saito K, Ota M, Eto K, Teraoka H. A novel method of mouse ex utero transplantation of hepatic progenitor cells into the fetal liver. *Biochem Biophys Res Commun*. 381(2):276-82. 2009.
4. Mikura A, Okuhara S, Saito M, Ota M, Ueda K, Iseki S. Association of tenascin-W expression with mineralization in mouse calvarial development. *Congenit Anom* (Kyoto). 49(2):77-84. 2009.
5. Liu J, Uematsu H, Tsuchida N, Ikeda MA. Association of Caspase-8 Mutation with Chemoresistance to Cisplatin in HOC313 Head and Neck Squamous Cell Carcinoma Cells. *Biochem Biophys Res Commun*. 390:989–994, 2009.
6. Murugan AK, Hong NT, Cue TTK, Hung NC, Munirajan AK, Ikeda MA, Tsuchida N. Detection of two novel mutations and relatively high incidence of H-RAS mutations in Vietnamese oral cancer. *Oral Oncology*, 45, e161-166 , 2009.
7. Ota MS, Kaneko Y, Kondo K, Ogishima S, Tanaka H, Eto K, Kondo T. Combined in sillico and in vivo analysis reveal role of Hes1 in taste cell differentiation. *PLos Genet*. 5(4), e1000443, 2009.


### Review Article


1. Kondo S, Ota MS, Kozawa Y. Mechanisms, and phylogenetic aspect of the tooth roots. *J Oral Biosci*. 51(4):188-192.

2009.
2. Ota MS, Nakahara T, Kanri Y, Kozawa Y, Ohazama A, Aoba T, Kondo T, Iseki S. Patterning of Molar tooth roots in mammals. *J Oral Biosci.* 51(4):193-198. 2009.