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大学院特別講義
（医歯学先端研究特論）

第37回グローバルCOE海外研究者講演会

歯と骨の分子疾患科学の国際教育研究拠点

ーデント・メドミクスのインテリジェンスハブー

講師：**Dr. Atsushi Ohazama**
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日時：平成23年1月31日（月） 16:30～17:30

場所：歯学部特別講堂（歯科外来事務棟4階）

演題：**The role of primary cilia in orofacial development**

Primary cilia are surface organelles found on most cells in vertebrates. They play a critical role in many aspects of biology, including development, and have recently been shown to be implicated in Shh signaling pathway that is also involved in orofacial development. In order to investigate the role of the primary cilia in orofacial development, we examined mice with a mesenchymal conditional mutation of *Polaris* (*Polaris*$^{flox/flox}$*/Wnt1Cre*) and *Kif3a* (*Kif3a*$^{flox/flox}$*/Wnt1Cre*), in addition to *Ofd1* null mutant mice. Multiple abnormalities were found in many orofacial organs of all three mutants, resulting from either up- or down-regulation of Shh signaling. The action of primary cilia on Shh signaling is thus negative or positive, depending on the tissue context. In addition, different cilia proteins exert different functions on the mechanisms of cilia-directed regulation of Shh activity.

Publication

・Ohazama A, et al. A role for suppressed incisor cuspal morphogenesis in the evolution of mammalian heterodont dentition. ***Proc Natl Acad Sci USA***. 2010
・Ohazama A, et al. Primary cilia regulate Shh activity in the control of molar tooth number. ***Development*** 2009.
・Ohazama A, et al. Lrp4 modulates extracellular integration of cell signaling pathways in development. ***PLos ONE*** 2008.
・Ohazama A, et al. A dual role for *Ikka* in tooth development. ***Dev Cell*** 2004.

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