

第26回“脳と末梢”セミナー (第58回生体制御学セミナー)

メダカ自然突然変異体Daから得られた 発生学の新たな視点

Novel developmental insights from the peculiar spontaneous medaka mutant, *Da*

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【日時】 平成26年11月21日(金) 16:00~17:30

【場所】 理学部8番教室

The medaka spontaneous mutant, Double anal fin (*Da*) exhibits a unique ventralized phenotype (body shape, fin morphology and pigmentation) at the adult stage, resulting in a mirror-image duplication of the ventral half across the lateral midline. The history of this mutant dated back to late 60's, when late Prof. Hideo Tomita picked it up in the rice field near Nagoya. A series of our recent analyses with this peculiar mutant has casted genetic light on various aspects of vertebrate development and morphological diversification. I will summarize our recent works with *Da*, in particular, focusing on epigenetic regulation of key developmental genes.

[Our recent *Da*-related papers]

Nakamura, R., Tsukahara, T., Qu, W., Ichikawa, K., Otsuka, T., Ogoshi, K., Saito, T.L., Matsushima, K., Sugano, S., Hashimoto, S., Suzuki, Y., Morishita, S., Takeda, H. Large hypomethylated domains serve as strong repressive machinery for key developmental genes in vertebrates. *Development*, 141, 2568-2580, 2014.

Kawanishi, T., Kaneko, T., Moriyama, Y., Kinoshita, M., Yokoi, H., Suzuki, T., Shimada, A., Takeda, H. Modular development of the teleost trunk along the dorsoventral axis and *zic1/zic4* as selector genes in the dorsal module. *Development*, 140, 1486-96, 2013.

Moriyama, Y., Kawanishi, T., Nakamura, R., Tsukahara, T., Sumiyama, K., Suster, M.L., Kawakami, K., Toyoda, A., Fujiyama, A., Yasuoka, Y., Nagao, Y., Sawatari, E., Shimizu, A., Wakamatsu, Y., Hibi, M., Taira, M., Okabe, M., Naruse, K., Hashimoto, H., Shimada, A. Takeda, H. The medaka *zic1/zic4* mutant provides molecular insights into teleost caudal fin evolution. *Curr Biol*, 22, 601-7, 2012.

Takeda, H., Shimada, A. The art of medaka genetics and genomics: What makes them so unique? *Ann Rev Genet* 44, 217 - 241, 2010.