セミナーのお知らせ

演者　Professor Stacia A. Sower （Center for Molecular and Comparative Endocrinology, University of New Hampshire, Durham, NH USA）

演題　Insight from the lamprey genome: Glimpsing early vertebrate development via neuroendocrine-associated genes and shared synteny of gonadotropin-releasing hormone (GnRH) （仮題）

日時　８月３日（土）１３時～１４時

場所　Ｌ１-３２

要旨

The first genome assembly has been completed in a basal vertebrate in which we annotated several neuroendocrine genes and performed synteny analysis. Genome-wide analyses verify that the development of the hypothalamic-pituitary axis was a seminal event in the evolution of vertebrates. Importantly, the lamprey assembly suggests that two whole genome duplication (WGD) events that generated the different fish and tetrapod paralogs likely took place before the divergence of the ancestral lamprey and gnathostome lineages. Specifically, analysis of GnRH shared synteny provides an evolutionary scenario that differs substantially from existing paradigms. A GnRH1 paralog was lost from the lamprey genome, similar to a parallel loss in several bony fish. GnRH3 was lost in tetrapods rather than arising as a result of the teleost WGD (3R). The functional group IV GnRHs (lGnRH-I & –III) in lamprey share a common ancestry with GnRH2 and 3 paralogs. In summary, we propose that an ancestral GnRH2-like gene existed before the lamprey/gnathostome split and that paralogous genes (GnRH-I/III and GnRH 3) independently evolved divergent structure/function in lamprey and gnathostome lineages. Funding Support: NSF IOS-0849569, AES NH00571, NIH F32GM087919 & the Lamprey Genome Consortium. S.12