DC セミナー

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とき：　６月 16 日　15 時 00 分
ところ：　総合研究棟２階，会議室３

題目： Evo-Devo impact of gene losses: dismantling the retinoic acid pathway in the chordate *Oikopleura dioica*

Lineage-specific gene loss is an aspect of Evolution that has been often neglected, but due to the current progress on Comparative Genomics, it has been suggested as a potential evolutionary force generating biodiversity. As a case study, our project focuses on the dismantling of the genetic machinery of retinoic acid (RA) in the chordate *Oikopleura dioica*. RA is a bioactive molecule derived from vitamin A (retinol), and its main functions are to inhibit cell proliferation, and to promote cell differentiation and apoptosis. These basic cellular functions of RA have been recruited by many physiological and developmental mechanisms during animal evolution. RA function, for instance, is crucial for anteroposterior axial development in chordates. Our investigations, however, provide evidence that this function might have been lost in some urochordate lineages, an event that might be linked to drastic changes in the genomic architecture of the *hox* gene cluster. We are studying if any of the components of the RA metabolic machinery has survived in *Oikopleura*, and what roles might be performing in comparison to other urochordates such the ascidian *Ciona intestinalis*. We also are studying how the dismantling of the RA pathway in *Oikopleura* has affected the evolution of *Oikopleura* homologs of vertebrate RA-target genes such as *hox* genes in the RA-free environment of this organism. We expect that the study of *Oikopleura* might help us to understand at what extend gene loss might promote innovations of mechanisms of development arose during the evolution of the larvacean lineage, or on the contrary, to unveil ancestral roles that might have passed unnoticed in other chordates masked by gene pleitropy or functional redundancy.

Oikopleura female adult

できるだけ簡単な英語で話していただきます。学部学生のみんなも是非来てください。

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