

DC セミナー (ISK セミナー)

講師： Robert W. Zeller 博士
(San Diego State University)

とき： 9月13日 13時00分

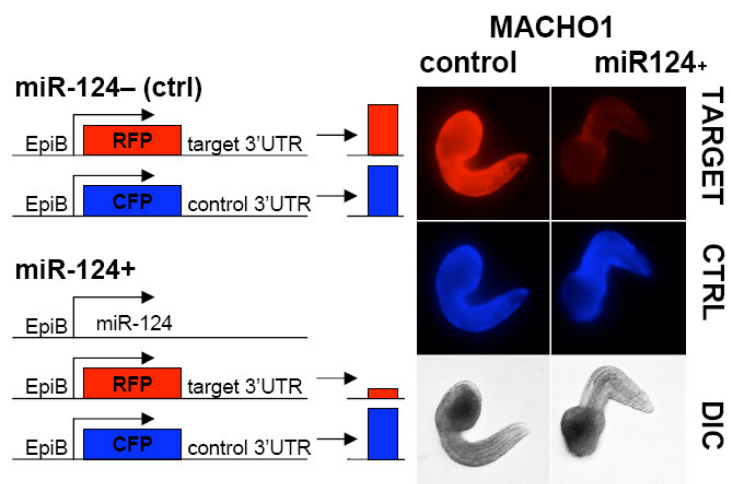
ところ： 総合研究棟 2階, 会議室 3

題目：

MicroRNA-124 function in the nervous system of the ascidian larva



MicroRNAs (miRs) have important roles in plant and metazoan gene regulation and are expressed from RNA polymerase Pol II promoters. After processing to short ~22 nt long fragments, one of the miR strands is loaded into the multi-protein RISC complex which then uses this small strand of RNA to locate target genes through productive base-pairing interactions in the 3' UTR of target genes. miR-124 is an evolutionarily conserved miR expressed in the nervous system of all animals in which it has been characterized. In ascidians, miR-124 is transcribed from a non-coding gene and is localized to the central and peripheral nervous systems. Here we show that *Ciona* miR-124 targets many genes involved with neuronal differentiation as has been suggested for other species. We developed an in vivo transgenic assay to show that miR-124 potently down-regulates over two dozen tested target genes. Our results show that miR-124 targets components of the cell cycle, probably to cause neuronal cells to exit the cell cycle, and the RNA splicing machinery to likely cause a shift in neuronal-specific alternative splicing. These pathways are also targets of vertebrate miR-124. We also show that there are a number of ascidian-specific miR-124 targets including the Notch pathway that is important for proper nervous system development. Our results show that in addition to its conserved roles in nervous system development, *Ciona* miR-124 also has a number of ascidian-specific roles required for proper nervous system development.



お問い合わせは、理学部応用理学科・藤原 (tatataa@kochi-u.ac.jp) まで