Singapore Developmental Biology Club

SEMINAR ANNOUNCEMENT

2 May 2013, Thursday
Breakthrough Theatrette, Level 4, Matrix, Biopolis
5:30PM – 6.30PM

Dr. Freek van Eeden
Senior Lecturer, Department of Biomedical Science,
The University of Sheffield, UK

Seminar Title: Zebrafish as a model for VHL function and hypoxic signaling

Von Hippel Lindau disease (VHL), is caused by heterozygosity for loss-of-function mutations in the VHL gene. Inactivation of the remaining allele in somatic cells is responsible for disease symptoms. Loss of VHL protein leads to inappropiate stabilisation of Hypoxia Inducible Factor (HIF), and this is necessary, but not sufficient for tumourigenesis. Mortality in VHL patients mainly results from clear cell renal cell carcinoma (ccRCC). We have created a fish knockout in *vhl* in order to create animal model to study this disease and hypoxic signaling . We found that in zebrafish, vhl heterozygous animals are prone to form proliferating lesions in the kidney, but as in current mouse vhl models, these do not lead to ccRCC. In an attempt to understand the function of human VHL better, we inactivated the second vhl-like gene in zebrafish. Surprisingly, we found that mutation of this gene has a strong effect on genome stability, but does not compromise viability. We established that this function is also present in the human gene, and may help to explain the tumor supressor role of the human gene. In the course of our work we also established a number of useful tools that, for instance, may be useful to analyse genome stability and DNA damage responses in vivo in zebrafish.

No registration required.
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