**第209回 臨時生物科学セミナー**

**日時：　　3月10日（月）16:40-18:10**

**演者：　Clinton Whipple（Brigham Young University）**

**演題:** **"Evolution of developmental pathways regulating flower and inflorescence　development in the grasses: Bract suppression and B class genes”**

1. Assembling a novel developmental network: bract suppression in maize and the grasses

We have been taking a forward genetic approach to identify maize bract suppression genes, while simultaneously investigating transcriptional changes associated with bract growth. While the transcriptomic work is still underway, our genetic screens have revealed several insights and suggest that bract suppression in the grasses is regulated by a complex network that has little if any overlap with bract suppression in the Brassicaceae.

1. Conservation and divergence of function in grass B class genes

We have recently characterized a mutant in the maize PI ortholog Zmm16, which we call sterile tassel silky ear1 (sts1). This mutant has a canonical b-class phenotype in the ear (female florets), but not in the tassel where stamens are transformed into lemma/pelea-like organs rather than carpels. Our characterization of sts1 provides some unexpected insight into the maize sex determination pathway and zygomorphy. Additionally, in maize the B class proteins interact as obligate heterodimers that auto-regulate as has been demonstrated in eudicots. Interestingly, our investigations indicate that obligate heterodimerization evolved independently in the grasses. Furthermore, switches from homodimerization to obligate heterodimerzation have occurred frequently throughout the Poales.

**参考文献:**

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Whipple, C.J., Hall, D.H., DeBlasio, S., Taguchi-Shiobara, F., Schmidt,R.J., and Jackson, D.P. (2010). A conserved mechanism of bract suppression in the grass family. Plant Cell 22, 565-578.

Whipple, C.J., Zanis, M.J., Kellogg, E.A., and Schmidt, R.J. (2007). Conservation of B class gene expression in the second whorl of a basal grass and outgroups links the origin of lodicules and petals. Proc Natl Acad Sci USA 104, 1081-1086.

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