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TEMASEK LIFESCIENCES LABORATORY

26 May 2015 (Tuesday), 4pm
The Auditorium (Level 1)
Hosted by: Dr Jedd Gregory Jeremiah

Coordination of fungal development and secondary metabolism

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Differentiation and secondary metabolism are correlated processes in fungi that respond to various external triggers. The velvet family of regulatory proteins plays a key role in coordinating secondary metabolism and differentiation processes as asexual conidia formation or the formation of resting structures. Such overwintering structures are associated with a specific bioactive secondary metabolism presumably for defense against other organisms of the habitat. The velvet domain family shares a DNA binding protein domain that is present in most parts of the fungal kingdom. Velvet domain proteins interact with several epigenetic methyltransferases which affect fungal secondary metabolism. This complex genetic network includes additional levels as protein stability or localization control and will be discussed.

Dr. Gerhard Braus studied Biology at University of Freiburg. PhD degree (1987) and habilitation (1992) at ETH Zürich. Appointed as Assoc. Professor of Biochemistry at University of Erlangen (1993) and Full Professor of Microbiology & Genetics in Göttingen (1996). Additional periods: Biocenter in Basel, University of Georgia in Athens GA, and BMS Institute of Functional Genomics, Princeton NJ.

Recent Publications:

1. Sarikaya-Bayram Ö, Bayram Ö, Feussner L, Kim JH, Kim HS, Kaever A, Feussner I, Chae KS, Han DM, Han KH, **Braus** GH (2014) The membrane-bound VapA-VipC-VapB methyltransferase complex guides signal transduction for epigenetic and transcriptional control of fungal development. Dev. Cell 29, 1-15. [Journal Cover]
2. Ahmed YL, Gerke J, Park HS, Bayram Ö, Neumann P, Ni M, Dickmanns A, Kim SC, Hyuk JH Yu#, **Braus** GH#, Ficner R# (2013) Fungal velvet regulators contain a DNA binding domain reminiscent of NF-κB. PLoS Biol. 11: e1001750 (# corresponding authors). [Synopsis to the paper in: PLoS Biol. 11, e1001751.
3. Christmann M, Schmaler T, Gordon C, Huang X, Bayram Ö, Schinke J, Stumpf S, Dubiel W, **Braus** GH (2013). Control of multicellular development by the physically interacting deneddylases DEN1/DenA and COP9 signalosome (2013) PLoS Genet. 9: e1003275.