DANDRITE
Danish Research Institute of Translational Neuroscience
Nordic EMBL Partnership for Molecular Medicine

DANDRITE Topical Seminar
by Kim Furbo Rewitz

Tuesday , October 20th 2015
11:00-11:45am

Conference room (1170-248)
Ole Worms Alle 3, Aarhus

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A genome-wide *in vivo* RNAi screen in *Drosophila* identifies regulators of cholesterol-dependent steroid production

During development steroid signaling induces a switch from juvenile growth to sexual maturation. This is a tightly controlled process, requiring the assessment of checkpoints depending on nutrient levels and growth status to decide whether to release steroids that trigger maturation or continue juvenile development. Progression to the adult stage only occurs once the developmental timing program is aligned with checkpoints that activate neuroendocrine circuits promoting maturation-inducing steroid pulses. This flexibility allows animals to reach a genetically predetermined body size under different nutritional conditions by adjusting the duration of the juvenile growth period. The two important parameters are growth rate, controlled by insulin/IGF, and the duration of growth, determined by the release of steroids. To coordinate growth and maturation, insulin/IGF therefore converges on the neuroendocrine system to control timing of steroid release.
The basic strategy for regulating steroid signaling and the timing maturation is remarkably conserved in metazoans, from flies to humans. By using the genetic model system *Drosophila*, we aim to uncover cellular mechanisms and neuroendocrine circuits required for the regulation of steroid signaling. We aim to uncover cellular mechanisms and neuroendocrine circuits required for the regulation of steroid signaling. We are currently using molecular genetic approaches in combination with genome-wide RNAi, transcriptomic and proteomic strategies. Given the high degree of conservation, we believe that genetic studies on *Drosophila* will provide fundamental insight that may provide a paradigm for understanding how diseases, including metabolic disorders like obesity and diabetes, affect steroid signaling and timing of puberty in humans.

Host: Anne von Philipsborn, DANDRITE.
If you'd like to talk to Kim, fell free to contact the host, avp@mb.au.dk