Invited lecture:

An endocytic network mediates environmental interactions with Notch signalling in Drosophila

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Hour: 1:00 p.m.

Room: Institute of Parasitology, Boardroom

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You're welcome!

Notch signalling plays a crucial role in development and in adult homeostasis. Alongside the core ligand activated Notch signalling pathway a network of endocytic routes can tune Notch signalling up or down by controlling the endosomal sorting of Notch through the action of ubiquitin ligase proteins that bind and modify the Notch intracellular domain. In Drosophila development we found that compensatory changes within this endocytic network acts as a robustness module, to help stabilise Notch signalling across the wide physiological temperature range over which Drosophila can develop normally. In contrast the same trafficking components appear to confer nutritional-dependent adaptive plasticity of the ovary stem cell niche. These examples illustrate how the regulation of Notch signalling is deeply embedded in the physiology of the cell and how a flexible regulatory network can be tuned to provide either stability or responsiveness to environmental conditions.

