



CDB SEMINAR

Andy Groves

Department of Cell and Molecular Biology, House Ear Institute, Los Angeles

Tuesday, July 18

16:00~17:00 C1F CDB Auditorium

Development and Regeneration of the Inner Ear: The Beginning and the End

Summary

The vertebrate inner ear is a highly complex sensory structure in which auditory and vestibular sensory epithelium are arranged precisely in space and connected to the brainstem by bipolar vestibulo-acoustic neurons. Both the neurons and the sensory hair cells that they innervate are derived from the anlagen of the inner ear, the otic placode. In the first part of my presentation, I will discuss recent work on the origin of neurons and hair cells in the inner ear, and will present a model for how transcription factors regulate the process by which neurogenesis is gradually replaced by sensory hair cell production in the vestibular system.

The loss of auditory sensory hair cells with age or after damage is a leading cause of sensorineural hearing loss. In mammals, sensory hair cells are never replaced following injury. In other vertebrates, however, sensory hair cells can be regenerated throughout life by the division and transdifferentiation of glial-like supporting cells. In the second part of my presentation, I will present work showing that mammalian supporting cells do indeed retain the capacity to divide and generate hair cells, and that these processes are negatively regulated in part by the cell cycle inhibitory protein p27Kip1, and the Notch signaling pathway.

Speaker Profile

Andy Groves is one of the foremost scientists working on inner ear development, looking at early induction to later differentiation. Andy did his PhD in London, with Mark Noble. From there he moved to the US, to Caltech, working with David Anderson and later, Marianne Bronner-Fraser before taking his current position in 1999 as Section Chief of Molecular Development at the House Ear Institute.

Host:

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