1. Record Nr. UNINA9910220051303321

Autore	Michael E. Smith
Titolo	Sensory Hair Cell Death and Regeneration
Pubbl/distr/stampa	Frontiers Media SA, 2016
Descrizione fisica	1 online resource (266 p.)
Collana	Frontiers Research Topics
Soggetti	Neurosciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

Sommario/riassunto

Sensory hair cells are the specialized mechanosensory receptors found in vertebrate auditory, vestibular, and lateral line organs that transduce vibratory and acoustic stimuli into the sensations of hearing and balance. Hair cells can be damaged due to such factors as aging, ototoxic chemicals, acoustic trauma, infection, or genetic factors. Loss of these hair cells lead to deficits in hearing and balance, and in mammals, such deficits are permanent. In contrast, non-mammalian vertebrates exhibit the capability to regenerate missing hair cells. Researchers have been examining the process of hair cell death and regeneration in animal models in an attempt to find ways of either preventing hair cell loss or stimulating the production of new hair cells in mammals, with the ultimate goal of finding new therapeutics for human sensorineural hearing and balance deficits. This has led to a wide array of research on sensory hair cells- such as understanding the factors that cause hair cell loss and finding agents that protect them from damage, elucidating the cell signaling pathways activated during hair cell death, examining the genes and cellular pathways that are regulated during the process of hair cell death and regeneration, and characterizing the functional sensory loss and recovery following acoustic or ototoxic insults to the inner ear. This research has involved cell and developmental biologists, physiologists, geneticists, bioinformaticians, and otolaryngologists. In this Research Topic, we have collated reviews of the past progress of hair cell death and

regeneration studies and original research articles advancing sensory hair cell death and regeneration research into the future.