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Title:	Deciphering the mechano-elastic behavior of tip-link proteins involved in hearing
Authors:	Kumar, Anuj (/jspui/browse?type=author&value=Kumar%2C+Anuj)
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Abstract:	The inner ear consists of hair cells which contains stereocilia and are thought to act as mechanosensors. The are known to convert mechanical stimuli into electrochemical signals which provide us sense of hearing. The taller stereocilia is connected to shorter stereocilia by a tip-link which is proteinaceous in nature. The tip-link is formed by two proteins, Cadherin23 (Cdh23) and Protocadherin15 (Pcdh15). Cdh23 and Pcdh15 are localized on the taller and shorter stereocilia respectively and it is known that ion that the opening of ion channel is a single step process. We hear sound intensity ranging from 5dB to 120dB, but if 5dB intensity of sound is sufficient for the opening of ion channel, then how the extra amount of force gets dissipated when a 120dB intensity of sound is heard. What we hypothesis that these proteins are elastic in nature. To address this problem we clone, express and characterize the elastomeric properties of these proteins. We use single molecule force spectroscopy to characterize the elastic properties of these proteins.
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