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Title: Measuring Elasticity of Force sensing proteins using Single Molecule Force Spectroscopy

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Abstract: Mechanotransduction is one of the major processes that facilitate hearing. Proteins that are involved in mechanotransduction are known as tip-links and mutations in these proteins cause hearing-loss. We plan to understand how mutations alter the mechanical stability of the proteins using single molecule force spectroscopy using Atomic Force Microscopy. To do, we first developed an enzymatic stapling protocol to make a polyprotein of I27 and sandwiched our protein of interests. In this thesis work, I prepared the constructs of I27 and the terminal extracellular domain of Cadherin-23 (a tip-link protein) and its mutant which can be used for molecular stapling.


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