

# **Nuclear membrane mechanical statistical analysis of Human Induced Pluripotent Stem Cell-derived cardiomyocytes**

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Understanding the mechanical properties of the nuclear envelope of normal cells and diseases is a key challenge. Atomic Force Microscopy (AFM) has been widely used to probe individual cells and nuclei using various AFM tips. In this method, the stiffness of the cell and nuclei are directly measured on the cell itself without entering the cell. A recent technique, nanoendoscopy-AFM, has been developed to explore the inside of the cell. This process is like endoscopy, where a thin tube with a camera is inserted into organs to visualize inside them. With this technique, obtaining a 3D map of the interior of cells and extracting the mechanical properties of the nucleus membrane is possible. In this communication, I will introduce our recent results regarding nuclear stiffness measurement of beating hiPSC derived-cardiomyocytes and cardiomyopathy cells by nanoendoscopy-AFM.