

Students' Annual Webinar

Nuclear morphomechanics guide competitive elimination of precancerous transformed cells from Epithelia

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Epithelial tissue constantly incurs potential carcinogenic mutations such as activating HRasV12. In turn, Epithelia have devised a fundamental means to remove these mutants by mechanical competition termed as Epithelial Defence Against Cancer (EDAC). We describe a deviation in Nuclear morphomechanics of the mutant cells as the basis of EDAC. Nuclear deformation in these mutants appears as a result of competition with the normal cells and further leads to a loss in Vimentin, a key cytoskeletal intermediate filament. As a consequence of this, there is an increase in the mutant compressibility which we experimentally test by developing a novel technique termed Gel Compression Microscopy (GCM).

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5:00 PM