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Nano-mechanics of prostate cancer cells on nano-scaffolds LYNDON BASTATAS, JAMES MATTHEWS, Texas Tech University, JOOD HASHEM, SOUAD SENNOUNE, RAUL ZANGUILLAN-MARTINEZ, Texas Tech University - Health Science Center, SOYEUN PARK, Texas Tech University — We investigated the nano-mechanics of lowly metastatic (LNCaP) and highly metastatic (CL-1) prostate cancer cells cultured on nano-scaffolds by performing AFM indenting experiments. The functionalized nano-scaffolds allowed us to control the cell-to-substrate adhesion, hence the focal adhesion. We measured the elastic moduli at the center of the cell at different adhesion sizes of the nano-arrays. The obtained mechanical signature indicates that smaller focal adhesion could elicit apoptosis. This study, in general, demonstrates that nano-scaffolds could be used as a tool for adhesion assay and as a metastatic indicator.

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