Abstract Submitted
for the OSS21 Meeting of
The American Physical Society

Single molecule force spectroscopy to determine specific receptor densities on live cancer cells under varying conditions[1] RAMESH TRIPATHI, PETER HOFFMANN, Wayne State University — We have used atomic force microscopy to study the single-molecule interaction between the ligand and receptors in live cancer cells under different vitro conditions. We focused our study on discoidin domain receptors (DDR), a cardinal player in cancer metastasis. DDRs are receptors that dimerize in response to collagen and initiate a signaling path within the cell. We constructed hydrogel substrates of varying stiffness and collagen concentration. The goal of the research is to determine receptor levels, dynamics, and interactions as a function of cell type and environment. Using an improved AFM analysis method, we were able to determine not only binding probability and kinetic parameters, but also densities of the ligands. We will present preliminary results from this research.

[1]We acknowledge the Richard Barber foundation and Wayne State University for funding for this research.

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Date submitted: 30 Mar 2021 Electronic form version 1.4