

Abstract Submitted
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The Effect of Polymer-Clay Nano-Composites on Human Dermal Fibroblasts LOURDES COLLAZO, HILANA LEWKOWITZ-SHPUNTOFF, MARY CATHERINE WEN, MIRIAM RAFAILOVICH, Stony Brook University — The effect of polymer-clay nano-composites on the proliferation of Human Dermal Fibroblasts (HDF) as a function of clay content was investigated. Polybutadiene with different clay concentrations were spun cast on glass substrates. HDF cells were cultured on these substrates and growth curves were generated for a period of 2 weeks. The results show that the optimal growth occurred on Polybutadiene films with nano-composites that consisted of 90% polymer and 10% clay. The relative modulus of these polymer-clay nano-composites films were measured by Scanning Modulus Force Microscopy (SMFM) 1 and showed a linear increase with clay concentration, indicating that the nano-composites became harder with increased clay concentration. Confocal microscopy revealed that the morphology of the F-Actin fibrils is a function of the matrix modulus. In addition more focal adhesion points were found on the harder substrates. This adaptation of normal fibroblasts will be compared to cancer fibroblasts as well as protein distribution by western blotting. Reference: Shouren Ge et al. PRL (2000) 85(11) 2340-2343

Lourdes Collazo
Stony Brook University

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