JASMIN THARAKAN, SHELBY SHAJIMON, DANICA WILSON, Department of Biology, Shepherd University, Shepherdstown, WV 25443, QING WANG, Department of Computer Sciences, Mathematics and Engineering, Shepherd University, Shepherdstown, WV 25443, and ROBERT WARBURTON, Department of Chemistry, Shepherd University, Shepherdstown, WV 25443. Developing a Three-Dimensional Cell Culture Assay to Assess the Effects on Paclitaxel on the Human Breast Cancer Cell Line Hs578T

Although much research has been carried out on the efficacy of possible breast cancer drug treatments in two-dimensional *in vitro* cell cultures, these may not adequately represent the response of tumors observed *in vivo*. As an alternative, multicellular three-dimensional spheroids provide an *in vitro* microenvironment that more closely resembles tumors *in vivo.* The objective of this study was to develop a 3-dimensional spheroidal cell culture assay using the triple-negative human breast cancer cell line, Hs578T. The results of the project provide a better understanding of the variables of the spheroid culture technique, including cell morphology and viability. It is hoped that future experiments will provide a better understanding of the impact of one anti-proliferative chemotherapy agent, Paclitaxel, on spheroidal Hs578T cells that will, ultimately, provide a model that more closely resembles *in vivo* cancer growth.

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