

ROBERT WARBURTON, SHELBY SHAJIMON, DANICA WILSON, and QING WANG, Department of Chemistry, Shepherd University, Shepherdstown, WV, 25443, Department of Computer, Mathematics & Engineering, Shepherd University, Shepherdstown, WV, 25443. **A study to develop methods for the use of spheroidal three-dimensional cell culture to assess the effects of paclitaxel on the human breast cancer cell line hs578t.**

Paclitaxel, a natural lipophilic diterpenoid, is currently used in chemotherapy for treatment of some cancers. Paclitaxel acts by blocking the cell cycle at the G1 and M phases and prompts apoptosis. Previously reported studies (Fowler, et al., 2000; McCloskey, et al., 1996) showed that paclitaxel is effective in the treatment of breast cancer and can mediate growth-inhibitory impact of anti-proliferative agents. In our current project we are determining methods to develop and apply 3-dimensional spheroidal cell cultures of the human breast cancer cell line, Hs578T, as a means to investigate the effects of paclitaxel on Hs578T. These methods will be utilized to study, over time, cell viability and morphology in an attempt to more closely mimic in vivo cancer growth under in vitro conditions (Morales & Alpaugh, 2009).

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