

## Studies of Cell Culture and Cytotoxicity Using Docetaxel

Miranda Luque\* and Xiaowei Dong\*\*

\*Department of Biology at California State University, Northridge 18111 Nordhoff St, Los Angeles, CA 91330; \*\*Department of Pharmaceutics, UNT Health Science Center College of Pharmacy, University of North Texas Health Science Center, Fort Worth TX 76107

Cell studies are prominent in biological-related researches. Cell culture is the basis for producing a successful cell study. In cancer research, cytotoxicity studies are used to evaluate the potency of cellular compounds based on the measurement of cell viability. The objective of this project is to learn and conduct cell culture and cytotoxicity study for Docetaxel using a MTT assay in prostate cancer cells. Prostate cancer cell lines, including sensitive PC3 cell line and Docetaxel-resistant PC3 cell line, were used. The sensitive PC3 cells were cultured in Dulbecco Modified Eagle medium with 10% Fetal Bovine Serum and 1% penicillin-streptomycin. For the resistant PC3 cell cells, 5 nM Docetaxel was added into the cell culture medium to maintain the resistant properties. Normal cell culture procedures were followed. MTT assay was conducted to measure the IC50 of Docetaxel in the resistant cells. Aseptic operation was correctly followed. Both sensitive and resistant cell lines were cultured over several passages with keeping the original cell properties. Dose-dependent responses were observed after MTT assay, indicating the correct performance on cytotoxicity studies. The PC3 sensitive and resistant cell line was successfully cultured. Cytotoxicity study based on MTT assay was correctly conducted..