

# International Conference on Diabetes and Endocrinology (ICDE-2025)

Conference Proceeding

May 08, 2025 (Virtual)

## **In-Vitro Combo Treatments of Human Melanoma Cell Lines (BLM, 1205Lu, WM238) with Curcumin, Steroids and Vitamins**

**Pandurangan Ramaraj**

Professor of Biochemistry Dept. of Biomedical Sciences, Baptist University College of Osteopathic Medicine, USA

Results of our previous in-vitro studies on the inhibition of human melanoma cell growth by steroids (progesterone (P), RU-486), curcumin (cur) and vitamins (A and D3), gave the idea for a combination treatment of melanoma cells in-vitro. The aim was to study the combined effects of curcumin, vitamins (D3 and A), and steroids (P4 and RU-486) on human melanoma (BLM, 1205Lu, WM238) cell growth and interleukin-8 (IL-8) secretion in vitro. Human melanoma cells were incubated in a 96-well plate with a single (solo) compound or a double combo of the compounds or a triple combo of the compounds in various combinations. Supernatants were subjected to Elisarray and quantitation of the cytokine IL-8 secreted by the cells. Results from the three cell lines (BLM, 1205Lu and WM238) were compared. Solo or single compound treatment of Cur, P, RU, A and D3 resulted in 40 to 57% of BLM cell growth compared to its untreated control cell growth at 100%. Similarly, 1205Lu cell line treatments resulted in 37 to 59% cell growth compared to its untreated control cell growth at 100%. A double combo of compounds such as Cur+D3, Cur+P treatments resulted in 19 to 42% of BLM cell growth and 17 to 37% of 1205Lu cell growth. Whereas WM238 cell line showed 18 to 22% cell growth. A triple combo such as Cur+P+RU, treatments resulted in 21 to 30% of BLM cell growth and 19 to 30% of 1205Lu cell growth. Whereas WM238 cell line showed 19 to 20% cell growth. Elisarray of the supernatants pointed to the two combo treatments A+RU and Cur+P+RU as having a basal secretion profile of various proinflammatory cytokines by the three cell lines with IL-8 secretion significantly suppressed. Hence, IL-8 in the supernatants of the two combo treatments was quantitated by Elisa. IL-8 secretion by the BLM cell line was 46.1 pg/ml and 31.08 pg/ml respectively in the supernatants of the combos A+RU and Cur+P+RU. Whereas IL-8 secretion by the 1205Lu cell line was 17.5 and 8.0 pg/ml respectively and IL-8 secretion by the WM238 cell line was 0.515 and 0.926 pg/ml respectively.

### **Conclusion**

Measurements based on cell growth, Elisarray and IL-8 quantitation indicated the two combos A+RU and Cur+P+RU worked well on three melanoma cell lines in decreasing cell growth and IL-8 secretion, suggesting a combination of compounds was more effective in decreasing melanoma cell growth than an individual treatment of a compound. Moreover, these studies highlighted the potential of natural and biocompatible compounds in decreasing melanoma cell growth in-vitro.