Synergistic Solutions Prove Promising in the Fight Against Squamous Cell Carcinoma Cancer

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The second most common skin cancer, Squamous Cell Carcinoma, is a persistent problem that threatens the lives of thousands, yearly. Cellular reproduction is a factor allowing these cancerous cells to grow and spread. It is also key to look at for prevention and treatment of Squamous Cell Carcinoma. Several passageways are involved in the reproduction of cells. To actively prevent reproduction, one must inhibit multiple passageways that work together, such as the Meki and IMPDH passages to hinder cancerous cell growth. Cobimetinib and Ribavirin are FDA approved drugs that target Meki and IMPDH passageways respectively. The combination of Cobimetinib and Ribavirin significantly reduces cancerous cell survival compared to their individual treatments. Through research, experiments, and data collection we tested what concentration of RBV best complemented Cobi's drug concentration. The experiments were performed on a mouse squamous cell carcinoma cell line named SCC-7. The mouse cell line was used to mimic drug performance on human cells. Experimental factors such as cell density, length of experiment, and cell line remained consistent throughout the study. Upon the completion of this study, it was proven that synergy, or cooperation of Cobi and RBV together produced a greater combined effect than the individual results of the drugs – which is the objective of this study. As RBV and Cobi further complement each other the combination can effectively hinder cancerous cell growth. In the future the RBV and Cobi combinations studied could best be used in clinical trials, topical, and systemic treatments to hinder cancerous cell growth.