The Effects of APC Loss on Response to Chemotherapy in Ovarian Cancer Cells

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Hypothesis: APC knockdown in ovarian cancer cells (APCKD cells) using CRISPR will result in decreased chemotherapy-induced apoptosis. Description of procedure: Protein was isolated from non-targeted control lines (NTCs) and APCKD OVCAR5 cells. To confirm APC knockdown, APC/Actin western blot analysis was performed. APCKD cell lines with lower APC expression than the NTCs were selected for further evaluation, and treated for 24 hours with either DMSO, 1uM PTX, H20, or 8uM DOX. DMSO and PTX treated cells were collected after incubation, stained with AnnexinV/PI, then analyzed using flow cytometry to determine the number of cells in early or late apoptosis. H20 and DOX treated cells underwent protein isolation and the lysates analyzed using Cleaved Caspase 3 (CC3)/Actin western blots. Three independent experiments were performed. Statement of results: The level of apoptosis in the drug-treated APCKD cells were compared to the non-targeted controls for each sample. APCKD cells saw a decrease in DOX and PTX-induced apoptosis in comparison to NTC cells. Conclusions: The results of our study suggest that APC may be a prognostic marker to determine chemoresistance in ovarian cancers.

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