Cell Immortality Revoked: Novel Method for Removing Gene Inhibitors from DNA to Induce Apoptosis to Kill Cancer Cells

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Cell immortality sounds good but is root cause of most cancers. This happens when certain functional tags attach to DNA periphery, suppressing apoptosis (self-dead), allowing uncontrollable cell replication. What if functional groups can be removed chemically from DNA, allowing cancer cell to act like normal cells and induce self-death? My idea uses valproic acid (VPA) sodium-salt, to remove gene inhibitors suppressing apoptosis in DNA of cancer cells. Literature shows VPA can re-express certain genes suppressed by DNA methylation. I studied pancreatic and brain cancer cells, both grown for 4 weeks with biweekly growth media change. Next, VPA cells treatment was done, dose ranged 3x10^5 to 0.3 µg/mL in steps of 0.1 dilution; followed by addition of fluorescent marker. Most cancer cells were live (90-91%) prior to VPA treatment as per marker color observed under an optical microscope. After VPA treatment, majority of both types of cancer cells died. At 3x10^5 µg/ml VPA dose, live cancer cells dropped to 31-33%. Optical and confocal laser scanning microscope images showed cell blebbing, C-shaped and cell-fragmentation, all signs of cell apoptosis. Flow cytometry also supported apoptosis by reduction in front-side-scatter area of the cells at higher VPA dose due to cell fragmentation. The results were very positive and open a new method of treating cancer by changing the molecular configuration of DNA of the cancer cell to self-destruct instead of using brute force to kill cancer cells by chemotherapy or radiation which also kills normal healthy cells.

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