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VITAMIN D AND CANCER PREVENTION: THE OBSERVATION OF VDR AND CELL CYCLE RELATED PROTEIN MODULATIONS BY HIGH VD CONCENTRATIONS IN PANCREATIC CELLS

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Many *in vitro* studies support the general idea that vitamin D plays a protective role against cancer. Increased doses of daily supplementary vitamin D have been widely used by people for the potential anti-cancer benefits of vitamin D. However, despite substantial epidemiological research, no consistent conclusion has been reached to support use of vitamin D as a cancer preventive or treatment agent. In the herein reported study, we checked the effects of 1,25-dihydroxyvitamine D3 concentrations on expression level of vitamin D receptor (VDR) and cell cycle related proteins CDKN1A (p21) and CDK1 in pancreatic cells and a poor differentiated pancreatic cancer cell line Panc-1. We found that VDR, CDKN1A, and CDK1 are up-regulated by increase of 1, 25-dihydroxyvitamine D3 concentration in normal pancreatic cell but not in Panc-1 cells. Further rising 1, 25-dihydroxyvitamine D3 concentration up above physiological range significantly down-regulates the expression of VDR, indicating VDR is modulated by VDR levels to maintain the normal function at circumstances of dramatic VD concentration variations. By increasing the level of cell cycle inhibitory and promoting proteins p21 and CDk1, vitamin D theoretically has both preventive and promoting effects on cell division of pancreatic cell.

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