

## **PALM GAMMA-T3 AS AN EFFECTIVE AGENT IN TARGETING PROSTATE CANCER STEM CELL-LIKE POPULATION**

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Emerging evidences support that prostate cancer is originated from a sub-population of cells- prostate cancer stem cells (CSCs). Conventional therapies for prostate cancer are believed to target mainly the majority of differentiated tumor cells but spare CSCs, which may account for the subsequent disease relapse after the treatment. Therefore, successful elimination of CSCs may be an effective strategy to archive complete remission from this disease. Tocotrienols (T3) are vitamin-E constituents that naturally found in palm oil and have been shown to have anticancer effect against a wide-range of human cancers. Recently, we have reported that gamma-T3, one of the four T3 isomers, was the most potent form of T3 against prostate cancer. Meanwhile, we found that gamma-T3 treatment not only inhibits prostate cancer cell invasion, but also sensitizes the cells to Docetaxel-induced apoptosis, suggesting that gamma-T3 may be an effective therapeutic agent against advanced stage prostate cancer. Here, we demonstrate for the first time that gamma-T3 can down-regulate the expression of prostate cancer stem cell markers (CD133/CD44) in androgen independent (AI) prostate cancer cell lines (PC-3 & DU145), as evident from Western blotting and flow cytometry analysis. Meanwhile, spheroid formation ability of the prostate cancer cells was significantly hampered by gamma-T3 treatment. More importantly, pre-treatment of PC-3 cells with gamma-T3 was found to interfere with the tumor initiation ability of the cells. Our data suggest that gamma-T3 may be an effective agent in targeting prostate CSCs, which may account for its anti-cancer and chemosensitizing effects reported in previous studies.