

Searching for the caveolin-1 and cyclooxygenase 2 genomic markers for kidney, ureter, bladder and prostate cancers in Taiwan

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Abstract. High expression of cyclooxygenase 2 (Cox-2) and caveolin-1 (CAV-1), which plays a regulatory role in hormonal metabolism and signaling pathways respectively, are positively correlated with higher risk, cell metastasis capacity and poor prognosis, but the contribution of Cav-1 genetic variants during carcinogenesis is still largely unrevealed. In this report, we will summarize the updated findings of Terry Fox Cancer research laboratory in Taiwan focusing on the genomic contribution of polymorphisms on COX-2 [G-1195A (rs689466), G-765C (rs20417), T+8473C (rs5275), intron 1 (rs2745557), intron 5 (rs16825748), and intron 6 (rs2066826)] and CAV-1 [C521A (rs1997623), G14713A (rs3807987), G21985A (12672038), T28608A (rs3757733), T29107A (rs7804372), and G32124A (rs3807992)] to urological cancers in Taiwan. The overall investigations in four cancers include renal cell carcinoma (kidney cancer), ureter, bladder and prostate cancers will be summarized and discussed. The novel biomarkers are useful for further studies in other populations and the mechanism investigations are needed in personalized pharmacogenomics.