

Non-Signaling Chemokine Receptor CCRL1 and Its Active Counterpart CCR7 in Prostate Cancer

Authors : Yiding Qu, Svetlana V. Komarova

Abstract : Chemokines acting through their cognate chemokine receptors guide the directional migration of the cell along the chemokine gradient. Several chemokine receptors were recently identified as non-signaling (decoy), based on their ability to bind the chemokine but produce no measurable signal in the cell. The function of these decoy receptors is not well understood. We examined the expression of a decoy receptor CCRL1 and a signaling receptor that binds to the same ligands, CCR7, in prostate cancer using publically available microarray data (www.oncomine.org). The expression of both CCRL1 and CCR7 increased in an approximately half of prostate carcinoma samples and the majority of metastatic cancer samples compared to normal prostate. Moreover, the expression of CCRL1 positively correlated with the expression of CCR7. These data suggest that CCR7 and CCRL1 can be used as clinical markers for the early detection of transformation from carcinoma to metastatic cancer. In addition, these data support our hypothesis that the non-signaling chemokine receptors actively stimulate cell migration.

Keywords : bioinformatics, cell migration, decoy receptor, meta-analysis, prostate cancer

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