Author’s response to reviews

Title: The role of a new CD44st in increasing the invasion capability of the human breast cancer cell line MCF-7

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Dear Editor, We would like to submit the enclosed manuscript entitled “The role of a new CD44st in increasing the invasion capability of the human breast cancer cell line MCF-7” which we wish to be considered for publication in BMC cancer. CD44, a hyaluronan (HA) receptor, is a multistructural and multifunctional cell surface molecule involved in cell proliferation, cell differentiation, cell migration, angiogenesis, presentation of cytokines, chemokines and growth factors to the corresponding receptors, and docking of proteases at the cell membrane, as well as in signaling for cell survival. The CD44 gene contains 20 exons that are alternatively spliced, giving rise to many CD44 isoforms, perhaps including tumor-specific sequences. In this paper, we found that a new CD44st was expressed in multidrug resistant MCF-7/Adr, Lovo/Adr, K562/Adr and HL-60/Adr cells. Further, we show that HA could interact with the new CD44st and regulate the expression of MMP-2 and MMP-9, which could increase the invasion capability of MCF-7 cells through the Ras/MAPK signaling pathway. In summary, our results may provide a new therapeutic target for tumor invasion through the regulation of the CD44 signal pathway. In addition, expression of CD44st maybe used as a dominant selectable marker for detecting the phenotype of multidrug resistance and invasion of tumor cells.