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Alteration of cxcr7 expression mediated by tlr4 promotes tumor cell proliferation and migration in human colorectal carcinoma

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The link between inflammation and colorectal carcinoma has been acknowledged. However, the impact of bacterial lipopolysaccharide (LPS) binding to Toll-like receptor 4 (TLR4) on chemokine receptors in human colorectal carcinoma cells still remains to be elucidated. The present study shows that exposure to LPS elevated CXC chemokine receptor 7 (CXCR7) expression in colorectal carcinoma cell line SW480 expressing TLR4/ myeloid differential protein (MD-2). CXCR7/CXCL12 is associated with SW480 cell proliferation and migration. However, exposure of SW480 cells to LPS had no effect on CXCR4 expression. To further support the above results, the expression of TLR4, MD-2, and CXCR7 was analyzed in human colorectal carcinoma tissues. Higher rates of TLR4 (53%), MD-2 (70%), and CXCR7 (29%) expression were found in colorectal carcinoma tissues than in normal tissues. We demonstrated that the recombination of TLR4, MD-2 and CXCR7 strongly correlated with tumor size, lymph node metastasis and distant metastasis in colorectal carcinoma tissue samples ($p = 0.037$, $p = 0.002$, $p = 0.042$, resp.). Accordingly, simultaneously examination of the expression of TLR4, MD-2 and CXCR7 in cancer tissues of colorectal carcinoma may provide valuable prognostic diagnosis of carcinoma growth and metastasis. Interplay of TLR4, MD-2 and CXCR7 may be of interest in the context of novel immunomodulatory therapies for colorectal carcinoma.

Biography

Huanbai Xu is presently working on her PhD at the age of 34 years at Shanghai Jiao Tong University School of Medicine China. She is also an outstanding physician. At present, she is studing tumor immunology. Her works involve with the interdisciplinary research for oncology, immunology, endocrinology, celluar and molecular biology.