

Expression Profile of Long Noncoding RNAs, lnc-Cox2, and HOTAIR in Rheumatoid Arthritis Patients

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Abstract

Despite the increased proof that long noncoding RNAs (lncRNAs) can control gene expression and broadly affect the normal physiological and disease conditions, the part of lncRNAs in rheumatoid arthritis (RA) is not well known. This study aimed to assess the serum expression levels of lnc-Cox2 and HOTAIR in RA and to investigate their role as novel noninvasive biomarkers in diagnosis of RA. Also, their relations with the levels of interleukin (IL)-6 and matrix metalloproteinase (MMP)-9 and with other clinicolaboratory data in RA patients were analyzed. lncRNAs-Cox2 and HOTAIR expression levels were detected in serum by real-time quantitative polymerase chain reaction. Both IL-6 and MMP-9 levels in serum were measured by enzyme-linked immunosorbent assay. The mRNA expression of lncRNA-Cox2 and HOTAIR was significantly upregulated in RA patients compared with healthy controls. Serum levels of both IL-6 and MMP-9 were significantly higher in RA patients than in healthy subjects ($P < 0.001$ each). Receiver operating characteristic (ROC) curve demonstrated that lncRNA-Cox2 and HOTAIR could discriminate RA patients from healthy controls. HOTAIR (not lnc-Cox2) was observed to be an independent predictor for RA using multiple logistic regression analysis. We concluded that lnc-Cox2 and HOTAIR serum expression levels can be used as novel noninvasive biomarkers for the diagnosis of RA.