Several long non-coding RNAs are significantly underexpressed in patients with pancreatic cancer

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Abstract

The prevalence and mortality of pancreatic cancer (PC) are high. Pancreatic cancer patients and medical professionals are unable to diagnose the disease in its early stages as patients don't exhibit precise and clinical symptoms until the later stages of the disease. Although oxidative stress has been proposed as one of the disease's causes, its primary cause has not yet been identified. New targets for the detection and therapy of diseases like cancer, neurological disorders, autoimmune conditions, and inflammation include long non-coding RNAs (lncRNAs). Additionally, lncRNAs are involved in controlling oxidative stress. In the current study, for the first time, the expression levels of lincRNA-p21, SCAL1 (LUCAT1), RMST, FOXD3, and MT1DP lncRNAs in the PBMC from PC patients and controls were examined. The findings of this study show that PC patients have considerably lower expression levels of lincRNA-P21 and RMST lncRNAs. Compared to TNM stage I–II patients, the expression of the lncRNA RMST was significantly higher in TNM stage III–IV patients. A substantial positive correlation was found between potential lncRNA expression and expression. Last but not least, lincRNA-p21 (AUC=0.60) and RMST (AUC=0.61) had biomarker values that were nearly significant according to ROC curve analysis among the five stated genes, and their biomarker roles may be explored in future studies.

Keywords: RMST, lincRNA-p21, stress oxidative, pancreatic cancer, biomarker, lncRNA