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Gα15 Potential as a Biomarker for Pancreatic Carcinoma

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Context Pancreatic carcinoma still lacks specific markers. Earlier diagnosis could benefit many patients anticipating resection or other potential cures that today have palliative effects. In addition, differential diagnosis of suspect lesions obtained by imaging could spare resections of benign tumors. Here, we analyzed Gα15 as a potential diagnostic marker. Gα15 is an intracellular signaling protein that we previously found to be ectopically expressed in the pancreas upon transformation. **Objective** To establish a correlation between the presence of malignant cells in human pancreas and Gα15 mRNA expression in biopsies and in the blood. **Methods** Microarray studies available in Oncomine analyzing pancreatic cancer were selected; all data sets including human pancreatic cancer cases paired to adjacent healthy tissue were taken in consideration, for a total of 54 pairs of samples. Furthermore, free RNA was extracted from serum of patients affected by pancreatic cancer. First-strand cDNA was generated retrotranscribing with random hexamers. RT PCR was performed using TaqMan gene-specific primers and probe specific for Gα15 sequence. **Results** All three microarrays datasets, normalized to compare neoplastic to normal tissues, report Gα15 overexpression in neoplastic tissue with higher Gα15 mRNA levels in 49/54 patients. The presence of circulating Gα15 mRNA was assessed in the serum of 8 adenocarcinoma patients showing a significant increase over samples obtained from 8 healthy donors. **Conclusions** Gα15 mRNA appearance in neoplastic pancreas or in the blood stream should be explored to assess its potential as an indicator of the presence of malignant cells.