CIRCULATING EXTRACELLULAR VESICLE-ENCAPSULATED LONG NON-CODING RNAS OBTAINED VIA LIQUID BIOPSY ARE POTENTIAL BIOMARKERS FOR PANCREATIC DUCTAL ADENOCARCINOMA

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Two novel extracellular vesicle long non-coding RNAs, LINC02280 and HEVEPA, promote tumor development in pancreatic ductal adenocarcinoma and show potential as serum biomarkers when combined with HULC and CA19-9.

KEY POINTS

- Gene expression analysis of serum extracellular vesicles identified LINC02280 and HEVEPA (LOC100507412) as the most significantly upregulated long non-coding RNAs in PDAC patients compared to healthy individuals, among 1,205 differentially expressed genes.
- LINC02280 promoted cell invasion and migration through induction of epithelial-mesenchymal transition in Panc-1 cells, as demonstrated by modulation of E-cadherin, N-cadherin, Snail, and Vimentin expression.
- HEVEPA inhibited apoptosis of PDAC cells, suggesting an oncogenic role.
- The combination of LINC02280, HEVEPA, HULC, and CA19-9 achieved an AUC of 1.00 for discriminating PDAC patients from healthy individuals and IPMN patients, superior to any single marker (individual AUCs ranged from 0.80 to 0.92).
- This study utilized serum samples from 22 PDAC patients, 23 IPMN patients, and 21 healthy individuals, with analysis by digital PCR and ROC curves.

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