Expression of HOXC8 is inversely related to the progression and metastasis of pancreatic ductal adenocarcinoma.

The transcription factor HOXC8 regulates many genes involved in tumour progression. This study was to investigate the role of HOXC8 in pancreatic ductal adenocarcinoma (PDAC) growth and metastasis. The Hoxc8 expression was determined in 15 PDAC cell lines and human specimens by RT-polymerase chain reaction and/or immunohistochemistry. The effects of HOXC8 silencing by RNA interference were investigated by functional tests. The Hoxc8 mRNA expression in PDAC cell lines was negatively related to their growth in vivo. Except for Suit2-007 cells, only those with low Hoxc8 mRNA expression grew in nude rats. Successful down-regulation of HOXC8 expression caused increased proliferation, migration (P<= 0.05) and colony formation (P<= 0.05) in Suit2-007, Panc-1 and MIA PaCa-2 PDAC cells, respectively. The Hoxc8 mRNA levels in diseased human pancreas tissues were significantly increased over normal in PDAC and autoimmune chronic pancreatitis specimens (P<0.01, respectively), but negatively related to tumour stage (P=0.09). In primary and metastatic tumour samples, immunohistochemical staining for HOXC8 was stronger in surrounding than in neoplastic tissues. Furthermore, grading of primary carcinomas was negatively associated with HOXC8 staining (P=0.03). Liver
metastases showed the lowest HOXC8 expression of all neoplastic lesions. These data indicate that HOXC8 expression is inversely related to PDAC progression and metastasis.