

Article

Lactobacillus Attenuate the Progression of Pancreatic Cancer Promoted by Porphyromonas Gingivalis in *K-ras*^{G12D} Transgenic Mice

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Simple Summary: Pancreatic cancer is aggressive and lethal with a five year survival rate of only 5–9%. While the exact pathogenesis of pancreatic cancer is not fully understood, oral pathogens associated with periodontitis, such as *Porphyromonas gingivalis* (*P. gingivalis*), are linked to the disease. The aim of our study was to investigate the causal association between exposure to *P. gingivalis* and subsequent carcinogenesis, and the potential modulatory effects of probiotics. We demonstrated that oral exposure to *P. gingivalis* can accelerate the development of pancreatic ductal adenocarcinoma in mouse models. In addition, the transforming growth factor- β (TGF- β) signaling pathway may be involved in the cancer-promoting effect of *P. gingivalis* and the suppressive effects of probiotics. Further understanding of the mechanisms of tumor-promoting or tumor-suppressing effects of TGF- β signaling may have potential as a treatment for pancreatic cancer.

Abstract: Accumulating evidence suggests that there is a link between the host microbiome and pancreatic carcinogenesis, and that *Porphyromonas gingivalis* (*P. gingivalis*) increases the risk of developing pancreatic cancer. The aim of the current study was to clarify the role of *P. gingivalis* in the pathogenesis of pancreatic cancer and the potential immune modulatory effects of probiotics.