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Ape1-mediated Redox signaling in pancreatic cancer stem cell

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Pancreatic cancer often has a poor prognosis due to the difficulty to detect and diagnose early. Currently, there are different treatments available for patients with pancreatic cancer, including surgery, radiation therapy and drug therapy, however, for all stages combined, the 1-year relative survival rate is 25%, and the 5-year survival is estimated as less than 5% to 6%. The phenotype of pancreatic cancer stem cells (PCSC) has been identified separately by a research group in University of Michigan in USA and another research group in Germany in 2007; and it has been suggested that PCSC are involved in pancreatic cancer metastasis. The hedgehog pathway is associated with cancer stem cell (CSC) signaling. Combined treatment with gemcitabine and cyclopamine induced tumor regression and decrease in CSC markers and hedgehog signaling. Direct tumor xenografts are a valid platform to test multicompartment therapeutic approaches in pancreatic cancer. We recently reported that Ape1-mediated redox signaling is associated with pancreatic cancer cell growth and migration. Our further study demonstrated that Ape-1 mediated redox signaling is also important is PCSC growth. Consequently, Ape1 redox inhibitor, E3330, might be a candidate in pancreatic cancer therapy through inhibition both pancreatic cancer cell and pancreatic cancer stem cell growth.

Biography

Gang-Ming Zou has completed his Ph.D in 2001 from Paris VI University in France and postdoctoral studies from Johns Hopkins University School of Medicine. He is the professor and principal investigator in Shanghai Cancer Institute, Shanghai Jiaotong University in China. He is the Chief of Section of Stem Cell Biology in the National laboratory of Oncogene and Related Genes in Shanghai Cancer Institute. He has published more than 25 papers in reputed journals, including PNAS, Blood, Oncogene, and Stem Cells etc, His accomplishment include that he identified the relevance between Pu.1 level and early B cell development, and Redox factor Ape1 in stem cell differentiation etc.