

5th World Congress on **Cell & Stem Cell Research**

March 23-25, 2015 DoubleTree by Hilton Chicago - North Shore, USA

Thromboxane in smoking-induced lung carcinogenesis – Potential new pathways for intervention

George G Chen, Yi Liu, Ming-Yue Li, Calvin SH Ng, Innes YP Wan, Angel Kong, Malcolm J Underwood
The Chinese University of Hong Kong, China

As a leading cancer in the world, 85-90% of lung cancer cases are attributable to cigarette smoking directly or indirectly. Although cigarette smoking is preventable, the incidence of tobacco smoking remains very high in some parts of the world and such a situation is likely to remain in the foreseeable future due to sociocultural factors and other issues. There is not an effective treatment that is specially developed for smoking-related lung cancer, contributing to the high mortality of this malignancy. Using cultured lung epithelial cells, human lung cancer tissues, and the mouse lung tumor model, we studied roles of thromboxane A₂ (TXA₂), thromboxane synthase (TXS) and its receptors (TP α and TP β) in smoking-induced lung tumorigenesis and analyzed potential molecules for targeting therapy against this cancer. We have detailed how the involvement of TXS and TXA₂ in smoking-induced lung cancer cell proliferation, growth, resistance to apoptosis, and we have identified a novel auto-regulatory feedback loop for TP α activation. We conclude that smoking promotes lung tumor growth via inducing TXS and TP α , which constitutes an auto-positive feedback loop to exaggerate the growth. Therefore, TP α and TXS appear to be the ideal targets against smoking-related lung cancer.

Biography

George G Chen is a professor in the Department of Surgery, Director of Surgical Research Laboratories, the Chinese University of Hong Kong, China. He is also served as a principle investigator at the Hong Kong Cancer Institute. He has extensive experience in cancer research, particularly in the area of hepato- and lung-carcinogenesis. He has authored or co-authored more than 180 papers and has written a number of books or book chapters. He is currently a member of editorial boards or a guest editor of a number of scientific journals and a regular peer-reviewer for several grant agents.

gchen@cuhk.edu.hk

Notes: