

Final report to Pneumoconiosis Compensation Fund Board (PCFB)

Project title: **A new mesothelioma cell line from local Chinese patient:
molecular characterization for research and therapeutic application**

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Abstract of research (on original application and approval)

The prevalence and epidemiology of malignant pleural mesothelioma(MPM) in Hong Kong has been reported. Other than tobacco smoking, there is increasing recognition that other environmental, occupational and genetic factors including asbestos, radon and silica are potential causes of thoracic cancer. MPM is considered one type of asbestos-related lung cancer(ARLC). The long latency from exposure to disease onset means that we are starting to see increasing incidences, thus an imminent need for better therapeutics.

MPM could be difficult to be distinguished from other lung cancers on the basis of histopathology alone and most MPM also have significant history of tobacco-smoking. Uncertainty surrounding the biological interactions between asbestos and tobacco and lack of available biomarkers, makes attribution of the cause of lung cancer in people exposed to both asbestos and tobacco sometimes difficult for compensation review board.

Through characterization of this new MPM cell line and comparison with other lung cancer cell line and immortalized bronchial epithelial lines, this project will demonstrate that ARLC have distinct patterns of mutation and gene expression compared with other thoracic cancers. The characterization of this new MPM cell line and the candidate biomarkers identified would reveal potential targets for further research in MPM and drug development.

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