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Kruppel like factor 4 and Heat Shock Protein 27: Potential biomarkers for lung and larynx cancers

Elie Hadchity

Lebanese University, Lebanon

Lung and larynx cancers are among the prevalent human cancers worldwide and no molecular markers are presently used for predicting prognosis in these cancers. Late detection and lack of standard treatment strategies result in high levels of mortality and poor prognosis. Prognostic stratification of larynx cancer patients based on molecular prognostic tumor biomarkers may lead to more efficient clinical management. Krüppel like factor 4 (KLF4) and Heat Shock Protein 27 (HSP27) are implied in tumorigenesis and are considered promising candidate biomarkers for various cancers. However, their role in larynx and lung carcinomas remains to be elucidated. Immunohistochemical and reverse transcription-polymerase chain reaction analyses in larynx and lung cancer tissue samples and normal tissue samples revealed a differential expression of KLF4 and HSP27 between normal and tumor tissues. KLF4 was significantly decreased in larynx carcinoma compared with normal tissue, whereas HSP27 was significantly overexpressed in tumor tissues compared with normal tissues, at the protein and mRNA levels. The KLF4 expression decreased gradually with tumor progression whereas HSP27 expression increased. In lung cancer, a significant decrease of KLF4 expression was observed in the Non-Small-Cell Lung-Carcinoma (NSCLC) when compared to normal tissue, while a significant over-expression was detected in the Small-Cell-Lung-Carcinoma (SCLC). KLF4 and HSP27 exhibit opposite functions and roles in the carcinogenic process. Their role in larynx or lung cancer initiation and progression highlights their use as potential future targets for prognosis and treatment. KLF4 and HSP27 expression levels may act as potential biomarkers in patients with larynx and lung cancers.

Biography

Elie Hadchity has completed his PhD from Claude Bernard University Lyon, France. He is a Professor at Faculty of Sciences and the Faculty of Medicine of the Lebanese University. He leads a Research team Antitumor Therapeutic Targeting, and his research work focused on the identification of novel therapeutic targets and novel biomarkers. He has several papers in reputed journals and an International Patent.

eliehadchity@hotmail.com

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