Maryam Ranjpour Aghmiouni et al., J Biotechnol Biomater 2018, Volume 8
DOI: 10.4172/2155-952X-C5-100

Elevated expression of cytosolic phospholipase A_2 delta is associated with hepatocellular carcinoma progression: Animal study validated with sera of liver cancer patients

Maryam Ranjpour Aghmiouni and **S K Jain**
Jamia Hamdard University, India

Liver cancer is the third common cancer to cause maximum death among patients diagnosed with cancers. The search for new biomarker discovery is necessary as none of the identified biomarkers alone are enough sensitive toward hepatocellular carcinoma (HCC). In order to find out novel biomarkers that can diagnose HCC at very early stage, we have developed a rodent model using chemical carcinogens, N-Nitrosodiethylamine (DEN) and 2-aminoacetylfluorine (2AAF). The disease progression was monitored by histological evaluation. Proteomic approaches such as 2D-Electrophoresis, LCMS/MS and Western blot analyses have been used to analyze the differentially expressed proteins in carcinogen-treated animals vis-a-vis controls. The total serum proteins were isolated, solubilized and resolved on 2D-Gel Electrophoresis using broad pH range IPG strips. PD-Quest analysis revealed proteins that are differentially expressed in serum of the carcinogen-treated rats as compared to controls. Some of these proteins have been identified by LCMS/MS. Histological analysis confirmed liver inflammation and disease initiation at one month and tumorigenesis at four months after carcinogen treatment. One of the differentially expressed proteins, namely, cytosolic phospholipase A_2 delta was significantly up-regulated at very early stage of cancer development and continued to remain elevated with disease progression up to tumor stage. The increase in its expression has been confirmed by Western blot analysis. Further, the analysis of serum of liver cancer patients also showed elevated expression of this protein that validated our experimental data. The study suggests that elevation in cytosolic phospholipase A_2 delta expression is associated with progression of HCC.

Biography

Maryam Ranjpour Aghmiouni has completed her PhD from Jamia Hamdard University. She has applied for Post-doctoral position at Illinois University and her application is under process. She has published two manuscripts and three more manuscripts are under re-revision status at high repute journals.

maryam_o2001@yahoo.com

Notes: