

Myeloid Zinc Finger 1/Ets-Like Protein-1/Protein Kinase C Alpha Associated with Poor Prognosis in Patients with Hepatocellular Carcinoma

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Abstract : Protein kinase C alpha (PKC α) is a key signaling molecule in human cancer development. As a therapeutic strategy, targeting PKC α is difficult because the molecule is ubiquitously expressed in non-malignant cells. PKC α is regulated by the cooperative interaction of the transcription factors myeloid zinc finger 1 (MZF-1) and Ets-like protein-1 (Elk-1) in human cancer cells. By conducting tissue array analysis, herein, we determined the protein expression of MZF-1/Elk-1/PKC α in various cancers. The data show that the expression of MZF-1/Elk-1 is correlated with that of PKC α in hepatocellular carcinoma (HCC), but not in bladder and lung cancers. In addition, the PKC α down-regulation by shRNA Elk-1 was only observed in the HCC SK-Hep-1 cells. Blocking the interaction between MZF-1 and Elk-1 through the transfection of their binding domain MZF-160-72 decreased PKC α expression. This step ultimately depressed the epithelial-mesenchymal transition potential of the HCC cells. These findings could be used to develop an alternative therapeutic strategy for patients with the PKC α -derived HCC.

Keywords : protein kinase C alpha, myeloid zinc finger 1, ets-like protein-1, hepatocellular carcinoma

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