ROLE OF DEK IN LIVER FIBROSIS

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Introduction: In liver fibrosis, excess extracellular matrix proteins, especially collagen, replace normal tissue, resulting in cirrhosis and cancer. In spite of the fact that there are no FDA-approved treatments, understanding the molecular mechanisms responsible for fibrosis is crucial. A multifunctional nuclear protein, DEK, is down-regulated in fibrotic livers, and its deletion worsens fibrosis in preclinical mouse models. Thus, DEK may have anti-fibrotic properties, making it a potential therapeutic target. In this study, we aim to investigate the function of DEK in liver fibrosis and assess its therapeutic potential. **Methods:** Ccl4 treated DEK WT & DEK KO mice. DEK mice were injected with 0.7ul/gm Ccl4 twice/week, i.p for 2 weeks. On week 3, tissue was harvested and examined for analysis. Western blot to confirm the presence and absence of DEK between the two groups. General IHC staining was done with H&E staining. Specific IHC staining was done for Sirius red, a-SMA, and trichrome. **Results:** DEK is expressed by all types of liver cells. UMAP expression analysis of DEK in hepatocytes. DEK protein is expressed in both the nucleus & cytosol of normal hepatocytes but only in the nucleus of spleen, skeletal muscle, and lung cells. Hepatic hydroxyproline level tested in Ccl4 treated DEK WT and DEK KO mice. Hydroxyproline levels were elevated in Ccl4-treated DEK KO mice. qPCR analysis of liver fibrosis-related genes in Ccl4 treated DEK WT & DEK KO mice showed elevation of the fibrotic gene in DEK-deleted liver. **Conclusions:** DEK deletion exacerbated liver fibrosis suggesting that DEK is a potential anti-fibrotic molecule.