

# 3<sup>rd</sup> International Conference and Exhibition on Cell & Gene Therapy

October 27-29, 2014 Embassy Suites Las Vegas, USA

## Cell based therapies on acute and chronic liver failures: Distinct disease, different choice

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Cell-based therapies (CBTs) are considered the effective approaches to treat liver failure. However, which cell type is the most suitable source of CBTs for acute liver failure (ALF) or chronic liver failure (CLF) remains unclear. Mature hepatocytes in adult liver (adult HCs), fetal liver cells (FLCs), induced hepatic stem cells (iHepSCs) and bone marrow derived mesenchymal stromal cells (BMSCs) were used to CBTs for ConA-induced ALF and Fah-deficient induced CLF in mice. Biochemical analysis was performed to detect the serum levels of liver injury indicators. qPCR was utilized to examine mRNA expressions of inflammation-associated factors. H&E staining and immunohistochemical staining of Fah were used to evaluate the changes of pathological structure and liver regeneration resulting from exogenous cells, respectively. Only BMSCs remitted liver damage and rescued ALF in ConA-treated mice. In this process, BMSCs inhibited ConA-induced inflammatory response by decreasing the RNA expressions of TNF- $\alpha$ , IFN- $\gamma$  and FasL and increasing IL-10 mRNA expression. However, in CLF model, not BMSCs but adult HCs transplantation lessened liver injury, recovered liver function and save the life of Fah-/- mice after NTBC withdrawal. Further study showed that adult HCs offered more effective liver regeneration compared to FLCs, iHepSCs and BMSCs in Fah-/- mice without NTBC. These results demonstrated that BMSCs and adult HCs are the optimal sources of CBTs for ConA-induced ALF and Fah-deficient induced CLF in mice, respectively. This founding deepens our understanding about how to choose a proper CBT for different liver failure.

### Biography

L X Wei has received PhD from the Second Military Medical University (SMMU), Shanghai, China in 1997, and continued his Postdoctoral studies in the University of Medicine of New Jersey for two years. He has been a Professor and the Director of Tumor Immunology & Gene Therapy Center, Eastern Institute of Hepatobiliary Surgery, SMMU since 2004. He has published more than 60 papers in reputed journals.

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