

7<sup>th</sup> International Conference on

# TISSUE ENGINEERING & REGENERATIVE MEDICINE

October 02-04, 2017 Barcelona, Spain

## Determination of the effect of saffron on liver regeneration after partial hepatectomy via Pi3K/Akt/mTOR signal pathway

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Liver repairs itself by its ability and has more advantages than any other organ in the body. In case of damage to the liver due to various reasons, replication and proliferation towards completing the functional mass start. Surgical removal of a portion of the liver lobe, known as partial hepatectomy (PHx) and hepatocyte damage from viruses or chemicals, cause an increase in hepatocyte replication. Replication and proliferation response is realized by a number of signaling pathways. PI3K/Akt/mTOR pathway has many functions; such as cell growth, proliferation, survival, differentiation, and the regulation of cytoskeletal changes. After 70% partial hepatectomy PI3K/Akt/mTOR is activated and allows the growth of hepatocytes. In recent years; many diseases such as cancer or metabolic disorders PI3K/Akt/mTOR pathway has been associated with abnormal activity. The development of dietary supplements that can help prevent or delay the onset of nutrition-related diseases in specific population groups. Saffron (*Crocus sativus L*), antioxidant, anti-inflammatory, anti-atherosclerotic, neuroprotective and preventing high-fat diet-induced insulin resistance (and so on.) effects are known. In our study, by gavage method to rats for 15 days of 100 mg/kg diet saffron have been applied. At the end of the diet, have been stimulate hepatocyte proliferation by 70% partial hepatectomy process. These procedures with saffron 0-6-12 and 24 hours effect on hepatocyte proliferation; PI3K/Akt/mTOR pathway have been determined through the pathway. According to our results; we determine that saffron has protective and proliferative effect on liver.

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