Hanayuki Okura, J Biotechnol Biomater 2016, 6:3(Suppl)
http://dx.doi.org/10.4172/2155-952X.C1.052

Therapeutic potential of human adipose tissue-derived multi-lineage progenitor cells in non-alcoholic fatty liver disease

Hanayuki Okura
National Institutes of Biomedical Innovation, Health and Nutrition, Japan

Nonalcoholic fatty liver disease (NAFLD) is an increasing cause of chronic liver disease and broadly defined by the presence of steatosis with inflammation and progressive fibrosis. Recently, we have reported the therapeutic potential of adipose tissue-derived multi-lineage progenitor cells (ADMPCs) in liver fibrosis using CCl4-induce chronic mice model. These findings lead us to plan next study, whose aim was to assess the effectiveness of ADMPCs in improving NAFLD. ADMPCs were isolated from inguinal adipose tissues of C57 BL/6 mice and expanded. NAFLD model was induced by a single subcutaneous injection of 200 μg STZ 2 day-after birth followed by feeding a high fat diet beginning at 4 weeks of age. After randomization of animals, the NAFLD mice received ADMPCs or placebo control via tail vein injection at an age of 6 weeks and were applied for histological and blood examination at an age of 9 weeks. NAFLD model mice with ADMPCs injection exhibited a significant reduction in liver fibrosis and inflammation areas as evidenced by Sirius red staining. Moreover, blood examination showed that plasma adiponectin levels in ADMPCs-treated NAFLD model mice were higher than those in placebo controls. *In vitro* production of anti-inflammatory cytokines, fibrinolytic enzymes and hepato-protective cytokines examined by ELISA were higher than those of and BM-MSCs, suggesting the mode of action of ADMPCs. These results showed the mode of action and proof of concept of systemic injection of ADMPCs in NAFLD, which is a promising therapeutic intervention for the treatment of patients with NAFLD.

Biography

Hanayuki Okura has completed her PhD degree from Osaka University, Graduate School of Medicine. She is the Deputy Director of Platform of Therapeutics for Rare Diseases, National Institute of Biomedical Innovation, National Institute of Biomedical Innovation, Health and Nutrition, Japan.

msgproject@yahoo.co.jp

Notes: