



▼ POST GRADUATES ABSTRACTS

PG -07 : MOLECULAR PROFILING OF SATURATED AND UNSATURATED FREE FATTY ACIDS ON INFLAMMATORY MARKERS OF ADIPOCYTES AND MACROPHAGES

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Background: Obesity, is an important public health burden is characterized by an excessive accumulation of fat mass in adipose tissue. White adipose tissue is the most vital site of chronic inflammation in obesity as indicated by the expression of proinflammatory

cytokines and infiltration of various immune cells. Circulating high levels of free fatty acids (FFAs) contribute to inflammation and oxidative stress, thus leading to the production of free radicals.

Aim: To profile saturated and unsaturated free fatty acids on inflammatory markers of adipocytes and macrophages. **Methods:** 3T3-L1 adipocytes and RAW 264.7 macrophages were incubated for 24, 48, 72 hrs with the following FFA: monounsaturated fatty acid (Oleic acid), saturated fatty acid (Palmitic acid, Stearic acid and Myristic acid) at the concentration of 500 μ M and the mRNA expression of cytokines and chemokines was determined by Real time PCR.

Results: The results showed that the conditioned media of differentiated 3T3-L1 cell were subjected to RAW264.7 cells exploring the resident macrophage expression in adipocytes that are prone to inflammation.

Hence, the pro-inflammatory cytokines in the in vitro conditions mimics obesity, thereby contributing to macrophage infiltration.

Conclusion: Pre-adipose 3T3-L1 cell line, a convenient model to establish the molecular mechanisms for adipogenesis has been studied. During adipogenesis, high levels of free fatty acid (FFA) contribute to inflammation and oxidative stress, thereby leading to the production of free radicals. Our results indicate that saturated and unsaturated FFA's may induce AT inflammation through proinflammatory stimulation of macrophages.