Richard Cheng-An Chang et al., Metabolomics 2014, 4:2
http://dx.doi.org/10.4172/2153-0769.S1.025

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference and Exhibition on
Metabolomics & Systems Biology
March 24-26, 2014 Hilton San Antonio Airport, San Antonio, USA

exRNAs regulated adipogenesis and obesity associated adipocyte function

Richard Cheng-An Chang, Hui Song, Taylor Splawn, Wei Ying, Haiqing Wang, Srikanth Kanameni and **Beiyan Zhou**
Texas A&M University, USA

Adipose tissue is a critical cytokine-releasing organ in regulating metabolic homeostasis, thus it has been a major target for the development of therapeutic strategies in mitigate obesity associated metabolic disorders. Compelling evidence indicates that adipose-tissue-resident macrophages (ATMs) are an important chaperon to regulate adipocyte functions including adipokine secretion, lipolysis, and adipogenesis. New evidence of extracellular RNAs (exRNAs) revealed by profiling studies opened a new avenue to understand the cell-cell interaction between ATMs and adipocytes in regulating adipose tissue functions. In human, exRNAs have been reported in body fluids such as blood and saliva, moreover, changes in their levels are associated with various disease conditions and have be developed as biomarkers for diagnosis. However, why these exRNAs are produced and how they function is yet to be determined. We recently profiled exRNAs in the plasma from obese and lean mice and identified a group non-coding RNAs that are differentially presented. To understand the source of these exRNAs and the underlying mechanisms of their action in the context of obesity associated adipose tissue function, we first determined a subgroup of exRNAs contributed by ATMs and investigated their function on mature adipocyte function with respect to cytokine/adipokine secretion and metabolic processes. Taken together, we studies not only identified a group of exRNAs as biomarkers but also provided a potential targets that can be applied to therapeutic intervention to mitigate obesity associated metabolic syndrome.

Biography

Richard Cheng-An Chang has completed his MS from Physiology Institute, National Yang-Ming University, Taiwan, and he is now a Ph.D. candidate at Biomedical Science in Department of Veterinary Physiology and Pharmacology in Texas A&M University from July 2013. In recent years, he has focused on investigating the relation between inflammation and metabolic syndromes by studying adipocyte tissue macrophages and adipocytes in adipose tissue.

CChang@cvm.tamu.edu