Meetings International SciTechnol

International Conference on
NUTRITION & OBESITY PREVENTION
&
International Conference on
GLOBAL MEDICINAL CHEMISTRY & GPCR SUMMIT

J Pharm Sci Emerg Drugs 2018, Volume: 6
DOI: 10.4172/2380-9477-C7-024

October 01-02, 2018
Las Vegas, USA

Controlling obesity by targeting adipose tissue cell populations

Mikhail G Kolonin
Institute of Molecular Medicine, University of Texas Health Science Center, USA

Changes in the relative abundance of thermogenic beige adipocytes and lipid-storing white adipocytes in adipose tissue underlie the progression of obesity and metabolic disease. We have discovered that mouse and human adipose tissue contains distinct beige and white adipocyte progenitor populations marked by PDGFRα or PDGFRβ expression, respectively. Our recent report [1] suggests that adipocyte lineage specification and metabolism can be modulated through PDGFR signaling. We have also developed 'hunter-killer' peptides, composed of a cell surface receptor-binding domain and a pro-apoptotic domain, for targeted ablation of cells in adipose tissue. A hunter-killer peptide D-WAT, targeting PDGFRβ+ white adipocyte progenitors, suppresses high fat diet-induced obesity development and enabled maintenance of active metabolism [2-5]. Another compound, Adipotide, targeting endothelial cells and adipocytes in white fat, reverses obesity in several animal models [6] and has shown promise in a clinical trial. In unpublished studies, we have developed a hunter-killer compound D-BAT, based on a peptide that targets brown fat tissue [7], which may relieve hypermetabolic conditions. New experimental approaches to fat tissue composition and function control will be discussed.

Mikhail.G.Kolonin@uth.tmc.edu