A white to brown shift in human adipogenesis

The dysbalance of abnormal or excessive energy intake over energy expenditure leads to overweight and obesity. Obesity is a global epidemic with with more than 1.1 billion people overweight and at least 400 million of them clinically obese, and causes a multitude of pathological conditions such as insulin resistance, diabetes, metabolic syndrome, and cardiovascular diseases. The adipose organ consists of two distinct types of tissues: the white and the brown adipose tissue. Whereas white adipocytes store triglycerides upon abundant energy uptake, brown adipocytes dissipate energy. Owing to new data recently obtained, and in contrast to early contention, healthy adult individuals possess active and functional BAT in small quantities localized at various sites. Thus, dissecting novel mechanisms in recruitment and activation of brown adipocytes in human is a novel research field of utmost interest. Therefore, the aim of this thesis is to validate compounds that address the recruitment of human brown adipocytes.