

## **Abstract**

Brown adipose tissue (BAT) is a specialized type of adipose tissue that plays an important role in non-shivering thermogenesis which is induced most often after cold acclimation. However, many studies have also highlighted the role of BAT in influencing the cardiovascular system and thus obesity, diabetes mellitus type 2, atherosclerosis, and insulin resistance. BAT has a protective effect against oxidative stress and recent studies suggest that it also has a potential therapeutic relevance for the treatment of cancer and osteoporosis, while it may also play a role in the body's immunomodulatory effects.

Key words: brown adipose tissue, non-shivering thermogenesis, cold acclimation,  $\beta$ -adrenergic receptors, therapeutic potential