



## E015 - Olfactory receptor 984: a new target for obesity in rats and humans?

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**Aims:** Obesity is a complex multifactorial and heterogeneous condition with an important genetic component matched with behavioral and environmental factors. Feeding behavior and body weight are controlled through complex interactions between the central nervous system (CNS) and peripheral organs. The aim of the present study was to identify and functionally characterize candidate gene/s involved in the development of resistance to diet-induced obesity (DIO) in rats.

**Methods:** RNA Chip-Technology and genotype analysis was done in 10 visceral adipose tissue samples of DR (n=5) and DIO (n=5) rats. The most promising candidate gene, OR6C3 (orthologous with the rat Olf984 and mouse Olf788) was measured by quantitative real-time PCR in adipocytes and stromal vascular fraction (SVF) from paired samples of human visceral and subcutaneous adipose tissue (AT) (n=225). Moreover, Olf788 expression in 3T3-L1 adipocytes was measured after treatment with various hormones and cytokines.

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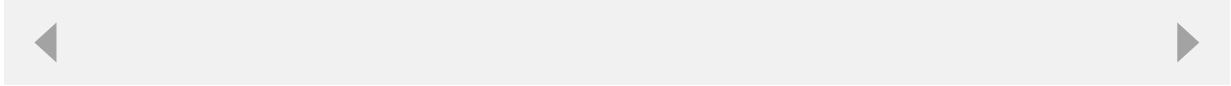
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**Conclusions:** Olr984 is a novel candidate gene related to diet-induced obesity in rats. Moreover, variation in human mRNA expression in AT is related to obesity parameters and glucose homeostasis, which might be attributed to the regulatory role of insulin on the Olr984.



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