

Anti-Obesity Effects of Probiotic *Pediococcus pentosaceus* OZF on 3T3-L1 Adipocytes

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Since adipocyte differentiation and subsequent extend in fat accumulation is closely related to the occurrence of various diseases, inhibiting the proliferation and differentiation of fatcells is thought to be an important strategy in the treatment of obesity. Therefore, it is the aim of this study to investigate the anti-adipogenic effect of probiotic *P. pentosaceus* OZF isolated from human breastmilk on 3T3-L1 (ATCC CL-173TM) preadipocytes, as an *in vitro* model of adipogenesis. 3T3-L1 cells (2×10^3 cell/well) were cultured and allowed to differentiate with different concentrations of lyophilized viable cells as well as cell free supernatant for 10 day under 5% CO₂ conditions. Following incubation, XTT assay was used to determine the cellular growth and cytotoxicity. The cellular lipid content was also assessed by OilRed-O staining. Proliferation and differentiation of adipocyte cells were shown to be inhibited by *P. pentosaceus* OZF as assessed by reduction both in the number of lipid-containing rounded cells and lipid accumulation in fully differentiated 3T3-L1 adipocytes. Our findings suggested that *P. pentosaceus* OZF might be used as an important strategy for the potential treatment of obesity and further *in-vivo* studies are needed to elucidate the mode of action.

Biography:

Harun Onlu is graduated from the Biology department of Yuzuncu Yil University and he completed his master degree in the same university. Later, he was started his PhD in Biology Department of Ankara University in 2011 under the supervision of Prof. Dr. OzlemOsmangaoglu. During the years between 2011-2016, he worked as a research assistant in this department. While he was doing his PhD, he went to Belgium as a researcher in the University catholique de Louvain, Institute of life science Pascal Hols group by getting scholarship from the Scientific and Technological Research Council of Turkey (TUBİTAK) between the years of 2015-2016, to carry out some experiments of his PhD thesis. His PhD works are still continuing. He is currently research assistant in the MuşAlparslan University, Department of Molecular Biology and Genetics. His working areas are about probiotic bacteria, bacteriocins, molecular genetics, cloning and knock-out of lactic acid bacteria and lactic acid production.