ABSTRACT

Obesity is a serious worldwide problem of modern society. Current state is at epidemic level not just in the developed world. It is no more „western disease“ or „disease of affluence“ as obesity used to be called. Determination of mechanisms that regulate energy balance in the human organism is necessary for further development of obesity drugs. Prolactin-releasing peptide (PrRP) is anorexigenic (food intake lowering) neuropeptide, which acts centrally in hypothalamus. Lipidized analogs of PrRP are promising tools in obesity and type-two diabetes mellitus treatment.

This work is focused on impact of palmitoylated analog of prolactin-releasing peptide (palm^{11}-PrRP31) in a diet induced rat model of obesity after chronical administration.

Body weight and cumulative food intake was monitored during the experiment. Administration of palm^{11}-PrRP31 markedly lowered food intake which caused decrease of body weight compared to obese control group on high-fat diet. This reduction correlated with significantly lower amount of intraperitoneal fat compared to group on high fat-diet.

Also, high-fat diet worsened studied metabolic parameters including glucose tolerance. Palm^{11}-PrRP31 lowered leptin plasma level and improved glucose tolerance both compared to the high-fat fed. Therefore, palm^{11}-PrRP31 is potential anti-obesity compound.