effect – its treatment decreased the body weight (by 7%), relative intraabdominal adiposity (by 16%), plasma leptin (by 33%) and plasma insulin (by 25%) when compared to the control group; on the other hand, it caused an increase of locomotor activity (by 19%), core body temperature (by 0.5°C) and morning plasma corticosterone concentration (by 154%) as was noticed by Wolden-Hanson et al. (2000). Thus, MEL concentration appears to be a limiting factor of its antineoplastic activity *in vivo*. In accordance with the results from *in vitro* experiments, only physiological concentrations of MEL suppress the proliferation of MCF-7 cells. As the ideal physiological concentration that of 1 nmol could be estimated (achieved in the blood at the peak of the dark). In our experiment the lower oncostatic effect of MEL could also be explained by treatment with higher doses than physiological concentrations (1 nmol MEL = 0.232 μg MEL). Other experiments are necessary to explain the inconstant effect of MEL as an oncostatic substance. However, the value of MEL as a natural oncostatic substance *in vivo* is indisputable. Based on the evidence of antiproliferative, immunostimulatory and antioxidative effects, MEL could play a prominent role in cancer prevention. The efficacy of combination of MEL with other substances was experimentally confirmed e.g. in the case of retinyl acetate (Bojková et al., 2000) and TAM (Kothari et al., 1997) and also in clinical studies when MEL was administered together with interleukin-2 in patients with different solid tumours resistant to basic treatment (Lissoni et al., 1995). The evaluation of TAM+MEL combination efficacy in our experiment was not possible due to total mammary carcinogenesis suppression by TAM, which alone prevented the tumour appearance induced directly (NMU) or indirectly (DMBA).

The use of TAM as an adjuvant drug is clinically suitable and useful; however, because of its effects on the uterus, TAM may not be suitable for breast cancer chemoprevention in humans. In the breast cancer chemoprevention TAM can be replaced by new antioestrogens with low uterotrophic effect – especially by raloxifene. The evaluation of advantages and disadvantages of TAM and raloxifene in breast cancer treatment will be evaluated in further experimental and clinical studies.

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