Reducing Effect on Weight Gain of Rats by Dietary Supplementation with Peanut Trypsin Inhibitor

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Trypsin inhibitors act increasing the secretion of cholecystokinin (CCK) which, in turn, is a putative satiety signal. We have demonstrated (data not yet published) the presence of a trypsin inhibitor in peanut paçoca (a Brazilian peanut candy) named AHTI (Arachis hypogaea trypsin inhibitor). The present study aimed to verify the effects of AHTI on the ability of digestion and assimilation of proteins as well as on satiety in rat. For this, five experimental diets were tested: S (standard, AIN-93G rodent diet), SG (water for gavage), NP (no protein), PP (70% peanut paçoca extract), AHTI (AIN-93G supplemented with 50 mg/kg peanut trypsin inhibitor for gavage). At the end of the treatment, 30 rats were placed in fasting for 12 to 15 hours, and anesthetized. Blood was collected by cardiac puncture and performed biochemical analysis. The supplementation with AHTI decreased significantly the average body weight of the rats (6.31 g) when compared to groups S (24.86 g), SG (21 g) and even PP (22.88 g) and NP (18.56 g) groups. The AHTI (5.94 g) and NP (8.24 g) groups also had a lower food intake when compared to the other groups. Biochemical changes were identified in the groups NP for glucose (93 mg/dL), AHTI for ALT (46.89 U/L), NP (13.75 U/L) and AHTI (12.74 U/L) for the AST. AHTI may have these effects by increasing secretion of CCK. Thus, these results suggest that decreased body weight associated with AHTI is due a putative satiety signal.

Word Keys: Arachis hypogaea L, Inhibitor, Peanut, Rats, Satiety

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