Organoselenium compounds, diphenyl diselenide and p-chloro-diphenyl diselenide, reduce food intake by inducing conditioned taste aversion in rats

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INTRODUÇÃO: The conditioned taste aversion (CTA) test is routinely used to assess the anorexigenic consequences of anorexic agents, including potential pharmacological treatments for obesity. Thus, the aim of the present study was to investigate the possibility of diphenyl diselenide (PhSe)$_2$ and p-chloro-diphenyl diselenide (p-ClPhSe)$_2$ reducing food intake by an aversive mechanism using CTA.

MATERIAL E METODOS: Sibutramine (10 mg/kg, positive control), (PhSe)$_2$ and (p-ClPhSe)$_2$ (0.1-10 mg/kg) were administered to male Wistar rats by intraperitoneal (i.p.) route before the dark phase and the food intake was measured. In order to perform CTA, the rats were first trained to a 1 h water drinking period during 7 days. On the conditioning day, all animals were given a 0.05% saccharin solution during their 1h drinking period and after this time they received an i.p. injection of vehicle, LiCl (45 mg/kg; positive control), (PhSe)$_2$ or (p-ClPhSe)$_2$ (0.1-10 mg/kg). On the recovery day, water was again offered. During the post-treatment day, water and the saccharin solution were simultaneously offered during the 1h drinking period and the consumption of both fluids was measured.

DISCUSSÃO E RESULTADOS: Similar to sibutramine (p<0.05), (PhSe)$_2$ and (p-ClPhSe)$_2$ at a dose of 10 mg/kg (p<0.001) were effective in reducing the food intake of rats in the dark phase, demonstrating their anorexic potential. Regarding the CTA test, there were no differences in the body weight, water and saccharin intake in the days before treatments. However, during the post-treatment day a marked reduction on % of saccharin preference was observed in animals that received (PhSe)$_2$ or (p-ClPhSe)$_2$ at doses of 1 and 10 mg/kg (p<0.001) similarly to LiCl (p<0.001), producing aversive reactions to the saccharin solution.

CONCLUSAO: Therefore, (PhSe)$_2$ and (p-ClPhSe)$_2$ caused a significant food intake reduction in rats, which is partly explained by a CTA.

Palavra chave: Organoselenium, Anorexic Agents, Conditioned Taste Aversion

Patrocínio: CNPq and CAPES