XXIII Congreso Argentino de Toxicología
XL Jornadas Interdisciplinarias de Toxicología
IV Jornadas Iberoamericanas de Toxicología
III Encuentro Latinoamericano de Residentes
GENERANDO CONOCIMIENTO PARA UNA SALUD EQUITATIVA E INCLUSIVA

Protective effects of $(m\text{-}CF_3\text{-}PhSe)_2$ in *C. elegans* exposed to a high-caloric diet

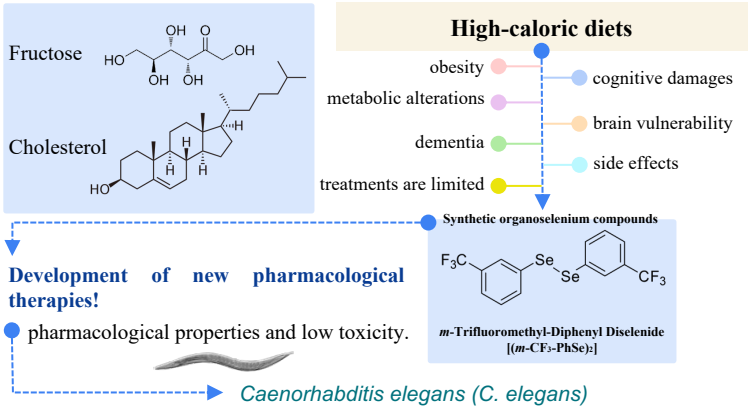
Efectos protectores de $(m\text{-}CF_3\text{-}PhSe)_2$ en *C. elegans* expuestos a una dieta hipercalórica

Jardim, Natália S.[1]; Guerra, Matteus T.[1]; Pelissão, Luiz Eduardo B[1]. Lutz, Guilherme.[2]; Zeni, Gilson.[2]; Benedetto, Alexandre[3]; Avila, Daiana S.[1]

[1] Universidade Federal do Pampa. BR 472 - Km 585. Uruguaiana. Rio Grande do Sul. Brasil.
[2] Federal University of Santa Maria, Santa Maria, RS, 97105-900, Laboratory of Synthesis, Reactivity, Pharmacological and Toxicological Evaluation of Organochalcogen Compounds, Department of Biochemistry and Molecular Biology, Center of Natural and Exact Sciences.
[3] Lancaster University, Lancaster, United Kingdom LA1 4YW. Division of Biomedical and Life Sciences.

nataliasjardim@gmail.com

Introduction



Objective: Considering the properties of $(m\text{-}CF_3\text{-}PhSe)_2$ and the necessity to develop new strategies to address adverse effects resulting from excessive consumption of high-calorie foods, this study aimed to assess the protective effects of $(m\text{-}CF_3\text{-}PhSe)_2$ and its mechanisms of action in *C. elegans* after exposure to an excess of fructose and cholesterol through the diet.

Methodology

Strains: N2 Bristol (wild-type) MD701 (bcIs39 [lim-7p::ced-1::GFP + lin-15(+)]); CF1553 (muIs84 [(pAD76)sod-3p::GFP + rol-6(su1006)]); BY200 (vtIs1 [dat-1p::GFP; rol-6(su1006)]).

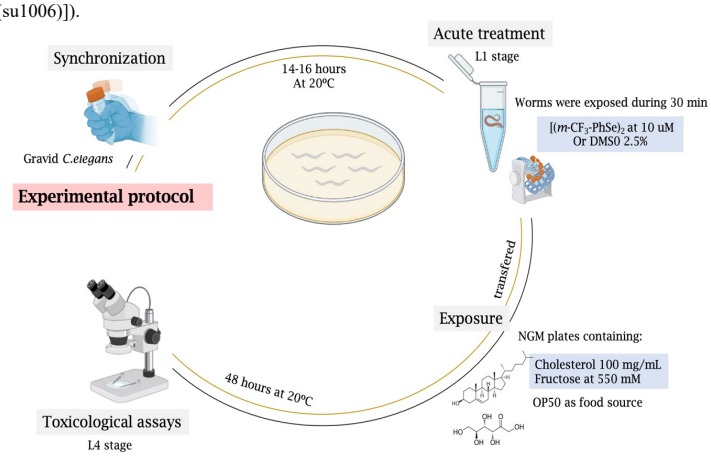


Figure 1. Experimental protocol of this study. NGM: Nematode Growth Medium; OP50 (*Escherichia coli* OP50); L1 and L4 (larval stage 1 and 4).

Results

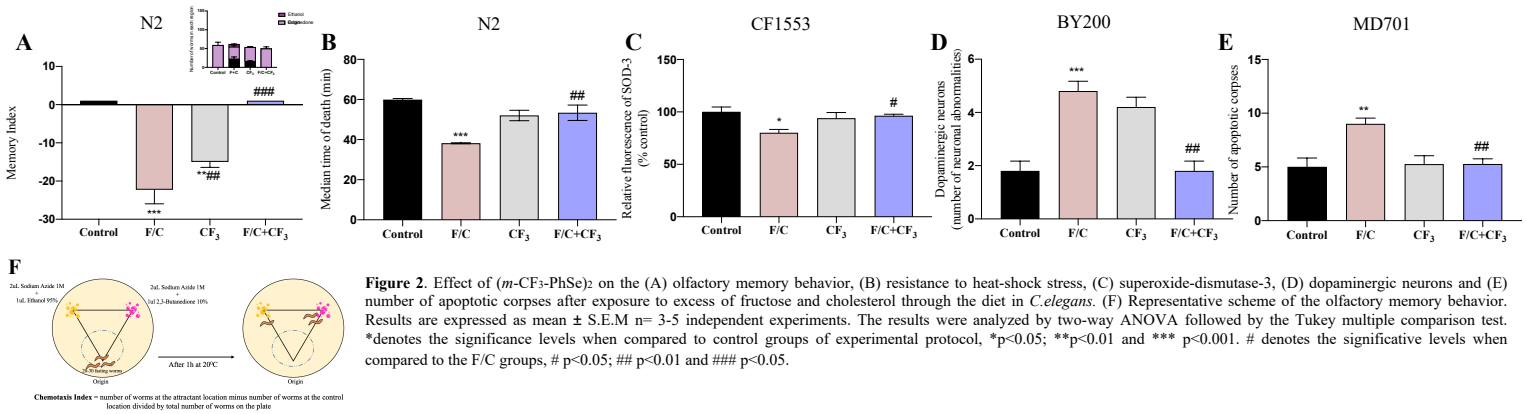


Figure 2. Effect of $(m\text{-}CF_3\text{-}PhSe)_2$ on the (A) olfactory memory behavior, (B) resistance to heat-shock stress, (C) superoxide-dismutase-3, (D) dopaminergic neurons and (E) number of apoptotic corpses after exposure to excess of fructose and cholesterol through the diet in *C.elegans*. (F) Representative scheme of the olfactory memory behavior. Results are expressed as mean ± S.E.M n= 3-5 independent experiments. The results were analyzed by two-way ANOVA followed by the Tukey multiple comparison test. *denotes the significance levels when compared to control groups of experimental protocol, *p<0.05; **p<0.01 and *** p<0.001. # denotes the significative levels when compared to the F/C groups, # p<0.05; ## p<0.01 and ### p<0.05.

Conclusion

In summary, organic selenium compounds hold great potential in alleviating the negative consequences of a high-calorie diet, as illustrated by their effectiveness in the alternative *C. elegans* model.

Financial Support

CAPES
unipampa Universidade Federal do Pampa
CNPq