TITLE: 5-FLUOROURACIL (5-FU) AS A POTENTIAL SUBSTITUTE FOR FLUORODEOXYURIDINE (FUDR) IN *CAENORHABDITIS ELEGANS* CULTURE.

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The use of invertebrate models in research has been growing over the years due to its ease of cultivation, low cost and possibility of extrapolation for animal models. The nematode *Caenorhabditis elegans* was first used in the 1960s and has since become a recognized model for different molecular studies, thanks to its rapid life cycle, physiological simplicity, genetically identical progeny production and being accepted as Universal model of cytotoxicity. In trials using *C. elegans*, fluorodeoxyuridine (FUdR) is commonly used to inhibit nematode replication. However, its use presents a high cost, justifying the search for analogues. 5-Fluorouracil (5-FU) is an antimetabolic drug currently used in the treatment of colorectal, stomach and breast cancer. Studies have shown that this drug is capable of inducing chromosomal aberrations, infertility and teratogenicity in animals, being a potential substitute for FudR in *C. elegans* model due to its activity. Thus, this work aimed to evaluate different concentrations of 5-FU capable of inhibiting ovulation of *C. elegans* without interfering with the growth of *C. albicans*. In the *C. elegans* model, the N2 Bristol and gcn-2 strains were used and for *C. albicans* assays the reference strain ATCC 5314 was used. To determine the cytotoxicity of the drug, the L1 forms of *C. elegans* N2 And gcn-2 and the ATCC 5314 strain of *C. albicans* were exposed to concentrations of 0.2; 0.6; 1.2 and 1.8 µg / mL 5-FU. Subsequently, after a 24 hour incubation, a reduction test of 3- (4,5-dimethylthiazol-2-yl) -2,5-diphenyltetrazolium bromide (MTT) was performed. At the end, a test was performed to determine whether 5-FU had fungicidal or fungistatic activity against the concentrations tested. The results showed that the worms were not feasible in all tested concentrations, making it impossible to evaluate the oviposition. For *C. albicans*, the concentrations tested did not present fungistatic or fungistatic activity. Thus, 5-FU was shown to have cytotoxicity for *C. elegans*, but did not interfere with the growth of C. albicans. However, further analysis should be performed to identify possible concentrations of 5-FU that are capable of inhibiting *C. elegans* oviposition, without interfering with its development.

Keywords: Cell viability, 5-Fluorouracil, C. elegans, C. albicans, Fluorodeoxyuridine.

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