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*The Effects of Lipid Production on Caenorhabditis elegans by the Inhibition of the Gene IKKE*

The purpose of this project was to first “knock down” the gene IKKE in *Caenorhabditis elegans* by feeding iRNA IKKE *E. coli* HT115 to the specimens. Upon completion of knocking down the gene, the researcher investigated the effect on lipid accumulation as well as overall health of the specimens by measuring length and number of progeny. The “knock down” group was fed a strain of bacteria that reduced the effectiveness of the IKKE gene. The control group was fed the wild type strain and the IKKE gene was fully expressed. The first and second generation nematodes were put through a lipid staining process and fat accumulations were recorded. Length and number of progeny were also collected. The researcher can conclude that the gene IKKE does contribute to the lipid accumulation in *C. elegans*. In the average nematode count, the experimental group exposed to the iRNA *E. coli* HT115 had a higher average of nematodes in all three trials compared to the control group. Trial 2 had the biggest differences between groups, the experimental had an average of 6.6 nematodes and the control had an average of 1 nematode per 5 one centimeter squares. The next test was average length. In all three trials, the experimental group had a higher average. Trial 3 had the highest length for the experimental group with a .49 millimeter average compared to the control’s .12 millimeter average. The final most important test was the lipid accumulation test. In this test, trials 1 and 2 for experimental were both significantly lower than the control.