Poster

Production of E. coli non-proliferative as culture medium for C. elegans

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Keywords: OP50; C. elegans

ABSTRACT

Motivation: The nematode and model organism Caenorhabditis elegans is normally fed with the OP50 strain of Escherichia coli B. This culture condition is widely used and is suitable for most approaches. Nonetheless, the fact that it is administered alived in proliferative state can present some problems, for example when is used to administer a drug to C. elegans and observe the consequences, the bacteria can modify it, or colonize the gut of the animal influencing its life span and the effect of the drug. For this reason, our approach to avoid these problems is to generate nonprolifetartive bacterial biomass as food for C. elegans.

Methods: Various physical treatments have been made on OP50 cultures to check their effects on bacterial viability, including drying in a vacuum hood, storage at different temperatures and different times, freezing; ultraviolet irradiation and lyophilization.

Performance of the N2 strain of C. elegans fed with treated and non-treated OP50 was analyzed.

Furthermore, with genetic engineering we will inactivate DNA repair genes (UvrB, UvrD and RecA) on E. coli B OP50 strain by P1 transduction or by homologous recombination.

Results: It has been found that the drying after giving to OP50 ultraviolet radiation is the treatment that reduced more the viability of OP50. It was also noted that the worms fed with dried OP50 take more time to hatch and grow to maturity, also were observed that some worms had gonads problems and few worms had died.

Conclusions: Physical treatments such as drying and application of ultraviolet radiation can be useful reducing the growth of bacteria, but is expected that OP50 with DNA repair genes inactivated have better results reducing bacterial viability.

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