

EARLY SEX DETERMINATION STEPS IN THE MEDITERRANEAN FRUITFLY *CERATITIS CAPITATA* AND ITS MANIPULATION FOR PRODUCTION OF A MALE-ONLY PROGENY

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In the agricultural pest insect *Ceratitis capitata*, the Mediterranean fruitfly, (Medfly) the sex determination is controlled by a Y-linked male determining factor which influences, either directly or indirectly, the state of activity of the female determining master gene *Cctra*^{ep} (*Cctra epigenetic*) at 5-7 hours from oviposition. We have developed a *Ceratitis* transgenic sexing strain able to produce male-only progeny (95% efficiency) by transgene-mediated RNAi against the female determiner *Cctra*^{ep} gene. *Ceratitis capitata* XX pseudo-males are apparently fully fertile and hence selected XX male flies can be crossed with XX females leading to female only XX progeny. We have prepared polyA+ RNA from XX embryos and from mixed XX/XY embryos, both collected at 5.7 hours from oviposition. We have used a molecular subtractive approach to identify differential expressed genes in XY versus XX at embryonic stages. We will present the molecular strategy employed to approach this problem and preliminary data describing the identification of 8 male-biased cDNA positive clones presently under analysis. Embryonic RNAi experiments are underway to investigate the function exerted by these genes during early embryogenesis of *Ceratitis*.