PRELIMINARY STUDIES OF THE EFFECTS OF ULTRA-SONICS ON EMBRYONIC DIFFERENTIATION IN BRACHYDANIO RERIO

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Embryos of *Brachydanio rerio* (Zebra fish) were exposed to ultra-sonic vibrations of 450 kilocycles for five or ten seconds at varying intensities of from 0.1 to 1.5 kilovolts. An Ultrason U-300 with circulating oil cooling system was used. The embryos were exposed by placing them in test tubes containing tap water and lowering these into the machine while the crystal was in vibration. Embryos in early cleavage or gastrulation were found to be more susceptible to the lethal effects of ultra-sonic vibrations at 450 kilocycles than were embryos 24 to 48 hours older. All embryos exposed to 0.5 kilovolts or higher were killed. Some embryos of all ages were able to survive exposures of 0.1, 0.2, and 0.3 kilovolts for five to ten seconds. Of the embryos which survived exposure and hatched, some 20% showed abnormalities. Most of these abnormalities affected the caudal regions of the embryo. Exposure to ultra-sonic vibrations appeared to increase susceptibility to fungus infection.