

DIFFERENCE IN THE SENSITIVITY BETWEEN MALE AND FEMALE NEONATES OF *DAPHNIA MAGNA* TO CHEMICAL COMPOUNDS

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Daphnia magna usually reproduce female offspring by parthenogenesis, therefore only female neonates are used to evaluate the environmental toxicity to chemicals. On the other hand, this species reproduce male neonates when environmental conditions are exacerbated. This fact strongly suggests that evaluation of the sensitivity of male daphnid to chemicals is important for conservation of species and ecosystems, as well as female one. In this study, we performed the acute immobility test of several chemicals with male and female neonates of daphnid in order to clarify the sex difference of sensitivity to chemicals. At first, adult female daphnids were exposed to juvenile hormone (methyl farnesoate, MF) for 24 h including the period of sex determination for getting male neonates, and 100% male-productive concentration was determined. Thereafter, the male and female neonates of within 24 h after being born were exposed to the test solutions containing potassium dichromate according to the OECD Test Guideline 202, and EC₅₀ (50% effective concentration) of the test substance was determined. The 100% male-reproductive concentration of MF by adult female was 50 µg·L⁻¹. As the results of the immobility test, the EC₅₀ of male and female neonates after 24-hour exposure were 1.439±0.150 mg·L⁻¹ and 1.157±0.065 mg·L⁻¹, respectively. After 48-hour exposure, the EC₅₀ of male and female neonates were 0.923±0.072 mg·L⁻¹ and 0.781±0.057 mg·L⁻¹, respectively. There is a significant difference between male and female neonates in the EC₅₀ after 24-h exposure ($P < 0.05$). However, there is no significant sex difference after 48-h exposure. These results suggest that male neonates have higher tolerance to the action of potassium dichromate than female counterparts on at least 24 h after being born.