Vasudev, V. & N.B. Krishnamurthy. University of Mysore, India. Non-induction of II-III translocation by cadmium chloride in D.melanogaster.

Environmental pollution due to cadmium is increasing due to its multifaceted usage. It has been shown that cadmium causes drastic effects in different test systems. Further it has been demonstrated that cadmium is toxic (Sorsa & Pfeifer 1973; Vasudev & Krishnamurthy 1981) but not mutagenic (Vasudev & Krishnamurthy 1982) in Drosophila melanogaster. The present communication reports the effect of cadmium chloride on the induction of II-III translocation in D.melanogaster.

Oregon-K strain of D.melanogaster and mutant stock of 'Oster' having the genetic constitution In (1) sc^{SIL} sc^{8R}+dl-49, y sc^{SI} sc^{8} bw:st formed the materials for the present studies. II-III translocation test was analyzed following the procedure of Wurgler et al. In these experiments, after continuous larval feeding, the males that emerged out of the sub-lethal doses of 30, 40 & 50 ppm of cadmium chloride and normal medium were used. All the experiments were carried out at a constant temperature of 23±1°C.

Table. Frequency of II-III translocations induced by cadmium chloride in Drosophila melanogaster (larval feeding).

Conc.	No. of chromosomes tested	No. of II-III translocations	%II-III translocations
Control	3125	-	-
30 ppm	3500	-	-
40 ppm	3275	-	-
50 ppm	3675	-	-

The test for translocation is capable of identifying the reciprocal translocations involving chromosomes 2 & 3, thereby detecting breakage and chromosome rearrangement (Zimmering 1975). The results of 2-3 translocation test are present in the table. From this table it is clear that none of the concentrations are able to induce II-III translocations. By this, it is opined that, cadmium chloride is unable to break the chromosome and to rearrange. In par with this O' Riordan et al. (1978) in the blood lympocytes of man occupationally exposed to cadmium, Suter (1975) and Sutou et al. (1980) in mice have demonstrated the non-clastogenic nature of cadmium. In contrast to the above results, clastogenic nature of this chemical has proved in different test systems (Shiraishi et al. 1972; Shiraishi & Yoshida 1972; Bauchinger et al. 1976; Kumaraswamy & Rajasekarasetty 1977; Bleyl & Lewerenz 1981). Even in D.melanogaster Vasudev & Krishnamurthy (1979) have shown the clastogenic nature of cadmium using dominant lethal test. Hence the results of the present findings supports the view of Wurgler et al. (1977), wherein they have pointed out that the frequency of translocations are not high after chemical treatment.

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