

Gvozdev, V.A., V.T. Kakpakov and L.M. Mukhovatova. Kurchatov's Institute of Atomic Energy, Moscow, USSR. Effect of  $\beta$ -ecdysone on cell growth and synthesis of macromolecules in the established embryonic cell lines of *D. melanogaster*.

The effect of  $\beta$ -ecdysone was studied at the cellular level in the established cell lines of *Drosophila melanogaster*. The C15 medium enriched with 15% bovine fetal serum was used (Gvozdev and Kakpakov, 1968; Kakpakov et al., 1969; Kakpakov et al., 1971).

0.05-0.1  $\mu$ g per ml of  $\beta$ -ecdysone causes the efficient inhibition of cell proliferation in the diploid cell line 67j25 D (over 250 passages). 2-deoxy- $\alpha$ -ecdysone is as active as  $\beta$ -ecdysone. On the other hand,  $\alpha$ -ecdysone has no effect at a concentration of 1  $\mu$ g per ml but the concentration of 5  $\mu$ g per ml inhibits cell multiplication to 60% of control.

The inhibition of cell growth by  $\beta$ -ecdysone may be reversed after 24 hours of treatment but is irreversible after 48 hours. The pre-treatment of cells with  $\alpha$ -ecdysone has no effect on the subsequent inhibitory influence of  $\beta$ -ecdysone.

RNA synthesis measured by  $H^3$  uridine incorporation decreases 2-3 fold 24-48 hours after the addition of  $\beta$ -ecdysone. The similar inhibition of DNA synthesis estimated by  $H^3$ -thymidine incorporation was observed after 48 hours. The pronounced inhibition of RNA synthesis with no influence on DNA replication was observed in some experiments 24 hours after the addition of  $\beta$ -ecdysone. Protein synthesis measured by  $C^{14}$ -lysine incorporation does not decrease after 48 hours of hormone action.

Several other sublines (diploid, triploid and tetraploid) were also sensitive to 0.1  $\mu$ g per ml of  $\beta$ -ecdysone. The subline 67j25 Da carrying spontaneous X;3 translocation and characterized by elevated rate of cell proliferation as compared to sister cells without translocation was relatively resistant to 0.1  $\mu$ g per ml of ecdysone.

References: Gvozdev, V.A. and V.T. Kakpakov 1968 *Genetika* (Russ.) 2:129; Kakpakov, V.T., V.A. Gvozdev, T.P. Platova, L.G. Polukarova 1969 *Genetika* (Russ.) 5:67; Kakpakov, V.T. L.G. Polukarova, V.A. Gvozdev 1971 *Ontogenesis* (Russ.) 2:295.

Hennig, W. Institut für Molekularbiologie II der Universität Zürich, Switzerland. A remarkable status of *Drosophila pseudoneohydei*?

Wheeler (1972) states an unintentional naming of this *Drosophila* species by us, which was repeatedly supplied to the Max-Planck-Institut für Biologie, Tübingen, by the Austin, Texas, stock center as *D. neohydei*. It was initially suspected that a "conversion" of the lampbrush loop

morphology in the primary spermatocytes from the *D. neohydei* type (Hess and Meyer, 1963) into another morphology takes place in the new environment. But our studies (Hennig, Hennig and Stein, 1970) revealed that, in fact, another *Drosophila* species was supplied. This could more recently be substantiated by studies on the metaphase chromosomes of *D. hydei*, *D. neohydei* and *D. "pseudoneohydei"* (Hennig, Leoncini and Hennig, 1973). In addition, the genome sizes of all three species were measured by microspectrophotometry. The genome of *D. "pseudoneohydei"* is 103% of the *D. hydei* genome, while the *D. neohydei* genome is only 84% (Hennig, Leoncini, Hennig and Zacharias, in preparation). A comparison of the lampbrush loops in primary spermatocytes suggested that *D. "pseudoneohydei"* actually represents *D. eohydei*. This has been substantiated by our investigation of several strains of *D. eohydei*, kindly provided by Professor M.R. Wheeler.

In a similar way we identified a stock of *D. nigrohydei* obtained from Austin, Texas, as *D. eohydei*. Differences in the sperm length observed in two stocks of *D. nigrohydei* from Tübingen and Edinburgh could also be explained by the same error (Dr. G.F. Meyer, personal communication). It seems, therefore, that confusions of this type could be easily avoided if characters more easily accessible for recognition than the conventional morphological criteria in the *Drosophila* genus, would be provided to non-taxonomists. The karyotype, the morphology of the Y chromosome lampbrush loops in primary spermatocytes and DNA density patterns, which are known to be species specific, are obviously excellent criteria for the differentiation of taxa.

References: Hennig, W., I. Hennig and H. Stein 1970, *Chromosoma* (Berl.) 32:31-63; Hennig, W., O. Leoncini and I. Hennig 1973, In: *Heterochromatin in Man* (R.A. Pfeiffer, ed.) F.K. Schattauer-Verlag, Stuttgart - New York. p. 87-99; Hess, O. and G.F. Meyer 1963, *Portg. Acta Biol. A*, VII 29-46; Wheeler, M.R. 1972, *DIS* 48:154.