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The *mei* mutations intensify rDNA mobility in polytene nuclei of *Drosophila melanogaster*.

In a *Drosophila melanogaster* polytene nucleus, all chromosomes are gathered in a structure called a chromocenter. Two nucleolus organizers (NOs) of the nucleus, located either on the X or on the Y chromosome, are united together and form a single nucleolus. Nucleoli non-associated with the NOs, but connected to various chromosomal sites, have also been observed to occur with definite frequency in the wild type polytene nuclei (Semionov *et al.*, 1978). The ribosomal DNA (rDNA) of such mobile nucleoli contains all types of the ribosomal gene repeats (Semionov and Kirov, 1986) and displays active replication and transcription (Ananiev *et al.*, 1981).

Our previous data (Semionov and Kirov, 1986; Toshev and Semionov, 1987) show that the frequency of formation of mobile nucleoli is substantially increased under conditions of rDNA dose compensation, which provoke intensive recombination in rDNA (Tartof, 1971). The results presented here (Table 1) reveal that conditions of repair deficiency lead to the same effect. The formation of mobile nucleoli is enhanced by genotypes deficient either in the excision repair (alleles *mei-9* and *mei-9^a*) or in the post-replicative repair (alleles *mei-41* and *mei-41^{195}*), as compared to the wild-type (Canton-S males and females). The combinations of the repair deficiency and the rDNA dose compensation condition (genotypes *Xmei-41^{195}/O* and *Xmei-41/Y^{bb-}*) do not show cumulative effect on the feature analysed (Table 1).

Table 1. Frequency of the salivary gland cells with mobile nucleoli in wild-type and in mutant genotypes.

Genetic constitution	Number of nuclei analysed	Frequency of nuclei with mobile nucleoli (% ± 2 SEM)
X/Y	931	40.3 ± 3.2
X/X	608	39.3 ± 4.0
Xmei-9/Y	829	70.8 ± 3.2
Xmei-9^a/Y	768	68.9 ± 3.3
Xmei-41/Y	771	70.7 ± 3.3
Xmei-41/Xmei-41	500	67.8 ± 4.2
Xmei-41^{195}/Y	638	65.8 ± 3.8
Xmei-41^{195}/O	419	67.5 ± 4.6
Xmei-41/Y^{bb}	574	53.8 ± 4.2

The distribution of the rDNA-specific insertion sequence type 1 (see Glover, 1981), revealed by the *in situ* hybridization within polytene nuclei of the mutant genotypes, was very similar to that found earlier in the compensating *Drosophila* (Semionov and Kirov, 1986). In particular, numerous labeled inter- and intrachromosomal ectopic fibers, asterisk-like shaped nucleoli scattered throughout the genome sited, where only a part of the chromosome diameter is labelled, were observed.

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Preliminary results from an allozyme survey of *Drosophila phalerata* using cellulose acetate electrophoresis.

This paper reports early results obtained from screening three distinct laboratory stocks of *Drosophila phalerata* for allozymic variation across nineteen enzyme systems. Some preliminary data from F1 rearings of individuals from natural populations are also presented. This is the first allozymic study of this species, and the first reported use of cellulose acetate (CA) electrophoresis with a *quinaria*-group species

Since their initial use in the 1960s (*e.g.*, Lewontin and Hubby, 1966) electrophoretic variation in allozymes has proved to be a valuable tool for studying genetic population structure. Starch gels and polyacrylamide gels have been the most widely used media, although more recently cellulose acetate membranes have been gaining in popularity, due to their easier preparation and reduced run-times (Easteal and Boussy, 1987).

Stocks of *D. phalerata*, of three separate origins, were maintained in the laboratory for at least nine months by continuous culture on cereal based media (Shorrocks, 1972). The first strain originated from wild flies collected in