



Development time of stocks containing different doses of *Suppressor of underreplication* (*Su(UR)ES*) gene in *Drosophila melanogaster*.

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*Su(UR)ES* is a recently discovered gene whose mutation results in suppression of DNA underreplication both in intercalary (IH) and pericentric (PH) heterochromatin of salivary gland polytene chromosomes. The mutation leads to loss of weak points in the IH and the appearance of new polytenized regions in the PH (Belyaeva *et al.*, 1998). Increasing the dosage of *Su(UR)ES*<sup>+</sup> has the opposite effect – four and six *Su(UR)ES*<sup>+</sup> doses increase ectopic conjugation, the frequency of breaks, and the total number of “weak spot” sites are dramatically increased. So, the wild allele of the *Su(UR)ES* gene is an enhancer of underreplication (Zhimulev *et al.*, 2000). We discovered that *Su(UR)ES* is a weak dose-dependent modifier of position effect variegation (in preparation). It was shown earlier (Michailidis *et al.*, 1988) that the extent of variegation may depend on development time. To examine a possible role of this factor in modification of PEV by *Su(UR)ES*, we determined the development time of stocks containing different doses of the *Su(UR)ES* gene.

The following stocks were analysed: *Oregon-R*, *y w* and *ru h*, as controls, mutant *Su(UR)ES*, and transgenic stocks containing 4 and 6 doses of *Su(UR)ES*<sup>+</sup>. Strains with four and six doses of the *Su(UR)ES*<sup>+</sup> gene contained 2 and 4 copies of a transposon comprising a genomic fragment with the functional *Su(UR)ES*<sup>+</sup> gene (I.V. Makunin *et al.*, in preparation) alongside two genomic copies. Males and females were allowed to mate for 5 days after emergence at 25°C. Then flies were transferred to bottles for 1 hour for egg laying. Development time was measured as time between oviposition and eclosion in two samples for each stock. All flies emerging during 3-hour intervals were scored and expressed in percentage (%). Results of this investigation are shown in Figure 1. As shown in the histograms, most of the flies (more than 90%) hatch between 206 and 230 hours after oviposition. We can conclude that neither homozygotes for the *Su(UR)ES* mutation nor flies with additional *Su(UR)ES*<sup>+</sup> doses show changes in development time.

References: Belyaeva, E.S., *et al.*, 1998, Proc. Natl. Acad. Sci. USA 95: 7532-7537; Michailidis, *et al.*, 1988, Genet. Res. 52: 119-123; Zhimulev, I.F., *et al.*, 2000, Genetics, submitted.

Figure 1 (next page). Development time of stocks: a) *Oregon-R*; b) *y w*; c) *ru h*; d) *ru h Su(UR)ES*; e) 4 doses of *Su(UR)ES*<sup>+</sup>; f) 6 doses of *Su(UR)ES*<sup>+</sup>. Abscissa: The time (h) between oviposition and eclosion in two samples for each stock (in rectangular - number of eggs for sample). Ordinate: Frequencies (%) of flies eclosing during 3-hour intervals.

