Czank, Andreas, and Eric Kubli. 2001. *forever young*: a gene facilitating the study of the third larval instar of *D. melanogaster*.. *Dros. Inf. Serv*. 84: 175.

forever young: a gene facilitating the study of the third larval instar of *D. melanogaster*.

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In our study of the gene *sarah* (genetic symbol *sra*; synonym *nebula*, genetic symbol *nla*; publication in preparation), we discovered two alleles of the gene *forever young* (genetic symbol *fey*). When balanced over *TM6B, Tb e*, homozygous *fey* larvae are identifiable by their Tb^+ phenotype. *Tubby* (*Tb*) causes short, thick individuals; the phenotype is visible in larvae, pupae and adults. fey^1 homozygotes, fey^2/*Df(3R)sbd* (see below), and fey^1/fey^2 trans-heterozygotes develop to the third instar larvae. Some eventually pupate. Homozygous fey^2 animals die at an earlier stage.

The *fey* phenotype allows studies on behavior and tumorigenesis of third instar larvae. When placed on food containing 20-hydroxyecdysone (1 µg/ml), most *fey* homozygotes pupate though morphogenesis is arrested early. Mixed in the substrate, any chemical can be studied for its potential of inducing pupation.

The two *fey* alleles were obtained from a P-element reversion experiment where the P-elements in the *sra* alleles sra^{P1} and sra^{P2} were removed. Originally, fey^1 and fey^2 had been referred to as sra^{l1} and sra^{l2}, respectively, (Czank 1998) as the result of the fact that P-element removal was a "*sra* allele" that was homozygous lethal and had a *sra* phenotype in trans-heterozygous *sra*/sra^{l1} or *sra*/sra^{l2} animals. A genomic rescue with a construct containing the *sra* genomic DNA including the 5' regulatory sequences was performed. This rescue construct reverted the *sra* phenotype (studied in trans-heterozygotes) but not the lethality. Therefore, we believe that the original P-element removal was imprecise and thus causing a mutant *sra* allele, and, as an additional effect, caused a mutation in *fey*. This is possible as the P-elements in sra^{P1} and sra^{P2} have inserted in the large *sra* intron that might harbor regulatory sequences for *fey*. However, we cannot exclude that our rescue construct was lacking stage specific regulatory sequences for *sra*. If so, *fey* would be a lethal *sra* allele.

The two genes, *fey* and *sra*, lie in the same genomic region 89B12. When fey^1 or fey^2 is crossed to flies with $Df(3R)sbd^{26}$, $Df(3R)sbd^{45}$ or $Df(3R)sbd^{104}$, no adult *fey*/*Df(3R)sbd* trans-heterozygotes are found. These *sbd* deletions also uncover *sra*. Two stocks are available, UM3 and UM4, the flies have the genotype *cn*; *ry* fey^1 sra^3/*TM6B, Tb e* and *w*; fey^2 sra^4/*TM6B, Tb e*, respectively.

References: Czank, A., 1998, *sarah*, a novel gene affecting reproduction of *Drosophila melonogaster* females: Phenotype analysis and cloning. Ph.D. thesis, University of Zurich, Switzerland.