Technique Notes

Lindsley, D.L. and L.M. Wickline. Department of Biology, University of California, San Diego, La Jolla, CA 92093. A *Y* chromosome duplicated for salivary regions 14A, B, F, and 15, and chromosome 4, and carrying, among other normal alleles, y^+ and f^+.

In investigations of lethals in regions 14 and 15 of the *X* chromosome, lethal-bearing males are kept in combination with $Dp(1;4)r^+$ or derivatives thereof. In order to follow this duplication, which carries f^+, in crosses, all other alleles of *f* must be mutant. As soon as there is a second f^+ element in the cross, one loses track of the duplication, and its presence in flies must be determined by individual test crosses. This problem plagued us in a mapping exercise involving lethal mutations in regions 14A and B; accordingly, we decided to append a derivative of *Dp(1;4)r+* to the *Y* chromosome so that the regular segregation of the Y could allow us to follow the duplicated segment of the *X*. The derivative used was a *Df(1)81h24b,* a deletion of *para* generated by D. Falk; $Dp(1;4)r^+$ extends from 14A2 through 16A7; *Df(1)81h24b* deletes material between 14B9 and 14E.

Females carrying $C(1)DX, y\ w\ f/B^S Y y^+/Dp(1;4)r^+$ were irradiated with 4000 rads of X rays and crossed to *y cv v f* males. Progeny which had lost one of the terminal Y markers and had retained f^+ were selected and crossed to *C(1)DX, y w f/Y* sisters. Of 70*cv v* sons (i.e., which had lost B^S), 12 were fertile (the remainder had presumably lost more of *YL* than its terminal euchromatic marker); of these only one proved to have f^+ appended to a fertile *Y*; in the remainder of cases, f^+ continued to segregate at random with respect to y^+ on the *Y*. Of 24 *y cv v* B^S males recovered, five were fertile and in every case f^+ segregated at random from B^S.

The new order of the duplicated *Y* is as follows:
1A|14A2—14B9|14E—16A7|102F2—101A|YL.YS
We designate this derivative *Dp(1;4;Y)81h24b.*

Kotliarevski, Deema Israel. Laboratory of Optimal Aerosol Application of Pesticides. Institute of Chemical Kinetics and Combustion. 630090 Novosibirsk. Russia. e-mail: naber@kinetics.nsk.su. The simplest low-cost medium for rearing *Drosophila melanogaster*.

The author has developed a very simple and cheap rearing medium for the fruit-fly, *Drosophila melanogaster*.

The medium consists of 30% oat flour and 70% water. The flour is put in the rearing tubes, then water is added. The tubes are closed with cotton plugs and are placed in the boiling water-bath for 45 minutes. After cooking these tubes are dried a little in a drier (80-100°C for 20-30 minutes), then they are cooled in the drier to room temperature. This medium was compared with a common medium consisting of agar, yeast, sugar and semolina. Three species of *Drosophila* were taken in the experiment including wild-type and four mutant lines of *Drosophila melanogaster* (kindly given by Dr. B.F. Tchadov from the Institute of Cytology and Genetics, Novosibirsk). The mutant lines were reared on the medium for at least ten generations, and no deviations from the norm (as compared with the common medium mentioned above, which served as a control) in dimensions, development and fecundity were observed. The proposed medium is at least ten times less expensive than the common medium and is free of expensive agar, sugar and yeast (and it is not inoculated with yeast). It is dense enough for flies. The residues of the medium are removed (during washing tubes) not so easily as in the case of agar-containing media, but the problem is solved by mechanical washers. Also the medium is proposed composed of 5% oat flour and 0.8-1% agar.

Wickline, L.M., and D.L. Lindsley. Department of Biology, University of California, San Diego; La Jolla, CA 92093. Construction of a *sog* ^+Y.

We have generated a male-fertile *Y* chromosome, marked with y^+ and B^S, which carries a normal allele of *sog*: short gastrulation (at 13D/E). This duplication sog^+Y was made by irradiating a recombinant between the proximal element of *T(1;Y)B32* and *C(1;Y)XYL*YS129-16* (see Figure 1). A stock was generated in which males carried this recombinant compound chromosome. Such males were irradiated with 4000 rads and crossed to various free-*X*-bearing females. In

males carrying a *T(1;Y)* and no free *Y*, the two elements of the translocation segregate from one another regularly (Nicoletti and Lindsley, 1960). So, from this cross, the only viable progeny were those in which the majority of the X euchromatin had been deleted from the translocated element. Of these surviving progeny, B^S males were selected. These males were then tested for fertility and for the ability of the duplication to cover *sog*.

Of 219 B^S males recovered, only one was both fertile and able to cover *sog*. This duplication does not cover *sd*, *exd* or *baz*.

This $Dp(1;Y)B^S sog^+ y^+$ has been used to cover the recessive lethality of *sog* so that complementation tests between alleles could be completed, as well as to simplify various crossing schemes involving *sog*.

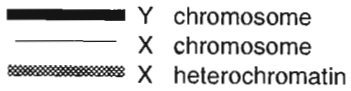


Figure 1a

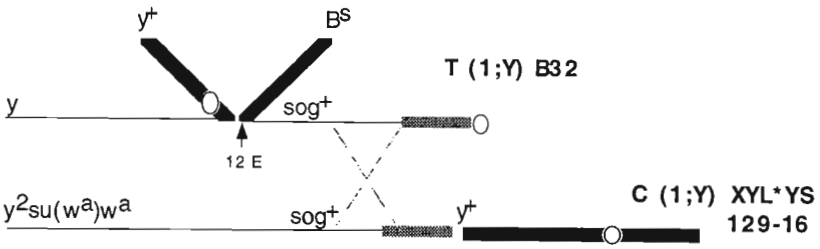
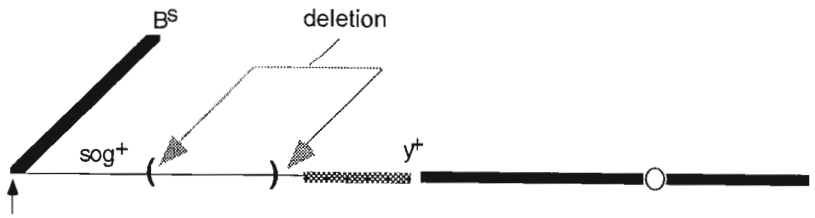


Figure 1b



References: Brosseau, G.E., B. Nicoletti, E.H. Grell, and D.L. Lindsley 1961, Genetics 46: 339-346; Nicoletti, B., and D.L. Lindsley 1960, Genetics 45: 1705-1722.

Eisses, K.Th., and M. Santos. Universitat Autònoma de Barcelona, Departament de Genètica i de Microbiologia, 08193 Bellaterra (Barcelona), Spain. E-mail: IBGF2 or IBGF1@cc.uab.es. Easy and reliable distinction between females of *Drosophila melanogaster* and *Drosophila simulans* from a Spanish population based on abdominal pigmentation patterns.

Since the discovery of Sturtevant (1919) that *Drosophila melanogaster* has a closely resembling sibling species *D. simulans*, both species turned out to be cosmopolitan and coexistent (Lachaise *et al.*, 1988). The two species are mainly distinguished by checking the male offspring of isofemale lines because of different genital arches (Coyne, 1983; Shorrocks, 1972). Based on measurements of eye sizes of *D. melanogaster* and *D. simulans* it is possible to make a distinction between the females (Burla, 1951; Gallo, 1973; McNamee and Dytham, 1993) but it is a painstaking job when large numbers of flies have to be examined. A high number (up to 45%) of misqualifications of *D. melanogaster* have been reported, based on different eye size definitions (McNamee and Dytham, 1993 and references therein). Based on a paper by Gallo (1973) we decided to examine whether morphological distinction through differences in abdominal pigmentation patterns was applicable in our population of *D. melanogaster* and *D. simulans*.