

DROSDEL CROSSES

Flip Out **RS w⁺ --> w⁻**

Chromosome 2

♀ y w 70FLP_{iso}; Sco/SM6a; 3_{iso}

X ♂ w_{iso}; P{FRT, w⁺}RS; 3_{iso}

-> heat shock

♂ y w 70FLP_{iso}; P{FRT, w⁺}RS/SM6a; 3_{iso}

X ♀ y w 70FLP_{iso}; Sco/SM6a; 3_{iso}

->

single w⁻ ♂ y w 70FLP_{iso}; P{FRT, w⁻}RSr/SM6a; 3_{iso}

X ♀ y w 70FLP_{iso}; Sco/SM6a; 3_{iso}

-> stock

Chromosome 3

Same as 2, but using y w 70FLP_{iso}; 2_{iso}; TM2/TM6C; to balance.

Chromosome X

♂ w¹¹¹⁸_{iso}; Sco/SM6b, 70FLP; 3_{iso}

X ♀ w¹¹¹⁸ P{FRT, w⁺}RS; 2_{iso}; 3_{iso}

-> heat shock

♂ w¹¹¹⁸ P{FRT, w⁺}RS; SM6b, 70FLP/2_{iso}; 3_{iso}

X ♀ FM7_{iso}; 2_{iso}; 3_{iso}

->

single non-virgin w⁻ ♀ FM7/w¹¹¹⁸ P{FRT, w⁻}RSr; 2_{iso}; 3_{iso}

X ♂ FM7_{iso}; 2_{iso}; 3_{iso}

->

♂ w¹¹¹⁸ P{FRT, w⁻}RSr; 2_{iso}; 3_{iso}

X ♀ FM7/w¹¹¹⁸ P{FRT, w⁻}RSr; 2_{iso}; 3_{iso}

-> stock

Chromosome 4

♀ y w 70FLP_{iso}; 2_{iso}; 3_{iso}; ci^D/ey^D

X ♂ w¹¹¹⁸_{iso}; 2_{iso}; 3_{iso}; P{FRT, w⁻}RS

-> heat shock

♂ y w 70FLP_{iso}; 2_{iso}; 3_{iso}; P{FRT, w⁺}RS/ci^D

X ♀ y w 70FLP_{iso}; 2_{iso}; 3_{iso}; ci^D/ey^D

->

single w⁻ ♂ y w 70FLP_{iso}; 2_{iso}; 3_{iso}; P{FRT, w⁻}RSr/ci^D

X ♀ y w 70FLP_{iso}; 2_{iso}; 3_{iso}; ci^D/ey^D

-> stock

Flip In RS3r, w⁻/RS5r, w⁻ --> Df w⁺

Chromosome 2

y w 70FLP_{iso}; P{FRT, w⁻}RS3r; 3_{iso}

♂ y w 70FLP_{iso}; P{FRT, w⁻}RS3r/ P{FRT, w⁻}RS5r; 3_{iso}

single w⁺ ♂ w¹¹¹⁸_{iso}; P{FRT, w⁺}RS3r--RS5r/SM6a; 3_{iso}

X y w 70FLP_{iso}; P{FRT, w⁻}RS5r; 3_{iso}

-> heat shock

X ♀ w¹¹¹⁸_{iso}; Sco/SM6a; 3_{iso}

->

X ♀ w¹¹¹⁸_{iso}; Sco/SM6a; 3_{iso}

-> stock

Chromosome 3

Same as 2, but using w¹¹¹⁸_{iso}; 2_{iso};TM2/TM6C to balance.

Chromosome X

♂ w¹¹¹⁸_{iso}; Sco/SM6b, 70FLP; 3_{iso}

♂ w¹¹¹⁸ P{FRT, w⁻}RS3r; SM6b, 70FLP/2_{iso}; 3_{iso}

♀ w¹¹¹⁸ P{FRT, w⁻}RS3r/w¹¹¹⁸ P{FRT, w⁻}RS5r; SM6b, 70FLP/2_{iso}; 3_{iso}

single w⁺ ♀ w¹¹¹⁸ P{FRT, w⁺}RS3r--RS5r/FM7i; 2_{iso}; 3_{iso}

X ♀ w¹¹¹⁸ P{FRT, w⁻}RS3r; 2_{iso}; 3_{iso}

->

X ♀ w¹¹¹⁸ P{FRT, w⁻}RS5r; 2_{iso}; 3_{iso}

-> heat shock

X ♂ FM7i_{iso}; 2_{iso}; 3_{iso}

->

X ♂ FM7i_{iso}; 2_{iso}; 3_{iso}

-> stock

Chromosome 4

y w 70FLP_{iso}; 2_{iso}; 3_{iso}; P{FRT, w⁻}RS3r/ci^D

y w 70FLP_{iso}; P{FRT, w⁻}RS3r/P{FRT, w⁻}RS5r; 3_{iso}

single w⁺ ♂ w¹¹¹⁸_{iso}; 2_{iso}; 3_{iso}; P{FRT, w⁺}RS3r--RS5r

X y w 70FLP_{iso}; 2_{iso}; 3_{iso}; P{FRT, w⁻}RS5r/ci^D

-> heat shock

X w¹¹¹⁸; 2_{iso}; 3_{iso}; ci^D/ey^D

->

X ♀ w¹¹¹⁸; 2_{iso}; 3_{iso}; ci^D/ey^D

-> stock

Heat shock protocol

Flip out: Heat shock for 1 hour at 37°C 48-72 hours after egg-laying (AEL).

Flip in: Heat shock for 1 hour at 37°C 48-72 hours AEL.

It may be necessary to heat shock again 48 hours later when making deletions on the X or larger autosomal deletions (>600kb).

References

Golic, K.G., Golic, M.M. Engineering the *Drosophila* genome: chromosome rearrangements by design. *Genetics* 1996 144(4):1693—1711

Edward Ryder*, **Fiona Blows***, **Michael Ashburner***, **Rosa Bautista-Llacer***, **Darin Coulson***, **Jenny Drummond***, **Jane Webster***, **David Gubb***, **Nichola Gunton***, **Glynnis Johnson***, **Cahir O’Kane***, **David Huen***, **Heiko Baisch†**, **Janet Schulze†**, **Maria Kube†**, **Kathrin Kittlaus†**, **Gunter Reuter†**, **Christoph Hugentobler**, **Åsa Rasmuson-Lestander**, **Karin Ekström**, **Bernard M. Mechler**, **Hugo Stocker**, **Janos Szidonya**, **John Roote*** and **Steven Russell***.

The DrosDel collection: a set of *P*-element insertions for generating custom chromosomal aberrations in *Drosophila melanogaster*. *Genetics* (2004) 167(2):797-813