

Table S1 *ald* allele selection. Each *yw; ald^{excision} / TM3, Sb; pol* stock was crossed to *FM7, y w B / y⁺Y; ald¹ / TM3, Sb; pol* males. Trans-heterozygous *ald¹ / excision* female progeny were crossed to males from the tester stock and progeny scored for NDJ (see Methods). Previous sequencing characterized *ald^{excision-25}* as a precise excision while *ald^{excision-23}* retains a 130-nt fragment of *P* sequence in the 5' UTR (GILLILAND *et al.* 2007). Calculated NDJ rates are presented here, in ascending *X* rate order. The eight lines with asterisks were those selected for the main experiment to provide the greatest range of NDJ rates; the bottom three alleles were not used as they proved to be semilethal over *Df(3R)AN6*.

Excision Line	<i>X</i> NDJ (%)	4 NDJ (%)	N
*25	2.3	2.6	344
*30	6.2	7.7	1157
2	8.7	7.4	1172
38	9.3	5.7	1427
*1	9.8	12.4	266
22	12.1	3.8	943
34	12.8	3.5	313
*26	13.0	3.1	1058
5	13.3	5.0	813
31	13.9	3.7	374
18	14.8	4.2	1097
*15	14.9	8.8	308
21	15.2	2.1	1292
17	15.5	3.6	982
20	15.9	12.5	893
*14	18.6	15.0	506
*4	25.9	32.9	85
35	26.4	12.2	492
36	28.6	16.2	748
13	28.9	15.1	166
*23	29.7	9.0	619
11	32.6	14.3	926
29	37.2	22.0	468
6	41.0	22.5	356