

**Table S1. Insertion position and loss- or gain-of-function analysis of targeted genes**

Gene	EP line	Position into targeted gene	Loss-or gain-of function analysis towards GG17
<b>A. Ras, Rac and Rho signalling proteins</b>			
<i>MESR4</i>	EP(2)386	-575 bp from mRNA start	Behaves like UAS-MESR4 (Huang and Rubin, 2000).
<i>AKAP200</i>	EP(2)2072	-43 bp from mRNA start	Behaves like UAS-MESR2 (Huang and Rubin, 2000).
<i>MESR2</i>	EP(2)2254	-114 bp from mRNA start	
<i>DC3G</i>	EP(1)1613*	In first intron, -475 bp from AUG start codon	UAS-DC3G lines (Ishimaru, 1999) similarly enhanced GG17 (see text).
<i>CG31012</i>	EP(3)3700	-14 bp from mRNA start	<i>P{SUP-or-P}CG31012P<sup>[KG05741]</sup></i> has no effect
<i>pbl</i>	EP(3)3415*	5'UTR, -457bp from AUG start codon	Described as gof in (Prokopenko et al., 1999). <i>pbl<sup>5</sup></i> has no effect (see text).
<i>GEF(64C)</i>	EP(3)3035 EP(3)3322*	In first untranslated exon (+26bp) -469 from mRNA start	UAS-GEF (64C) line (Bashaw, 2001) enhanced GG17. <i>GEF</i> mutants have no effect (see text).
<i>grp</i>	EP(2)587	In first intron of transcript CG17161-RA, - 16 kb from AUG start codon	Described as gof (Abdelilah-Seyfried et al., 2000). <i>grp<sup>[06034]</sup></i> has no effect.
<i>CG7097</i>	EP(2)2445	-44 bp from mRNA start	<i>Df(2R)P34</i> (55E-56C) has no effect.
<i>SNF4Aγ</i>	EP(3)648	-40 bp from mRNA start of <i>SNF4Aγ</i> transcript CG17299-RH	<i>P{SUPor-P}SNF4Aγ<sup>[KG00325]</sup></i> has no effect.
<b>B. Cytoskeletal control and membrane trafficking</b>			
<i>Myo31DF</i>	EP(2)2491	-28 bp from mRNA start	<i>P{lacZ}l(2)k09116</i> has no effect
<i>Beach1</i>	EP(2)2299*	In first intron, + 194 bp downstream of AUG start codon; may generate a Nter truncated protein.	Described as gof in (Abdelilah-et al, 2000; Kraut et al., 2001). <i>Df(2L)c17</i> (25E-26A) has no effect.
<b>C. Chromatin remodelling factors</b>			
<i>kis</i>	EP(2)474	In first intron of <i>kis</i> CG3696-RA transcript, - 5 kb from CTG start codon	Described as gof in (Kraut et al., 2001; Pena-Rangel et al., 2002). <i>kis<sup>l</sup></i> has no effect.
	EP(2)563	- 1kb from start of <i>kis</i> CG3696-RB transcript	
<i>dom</i>	EP(2)2371	-23 bp from mRNA start	<i>dom<sup>[K08108]</sup></i> has no effect.
<i>Dp1</i>	EP(2)2422	In first intron, -1152 kb from AUG start codon	<i>P{GTI}Dp1<sup>[BG01405b]</sup></i> and <i>P{GTI}Dp1<sup>[BG02288]</sup></i> have no effect.
<b>D. Spermatogenesis</b>			
<i>poe</i>	EP(2)349 EP(2)737	-18 bp from mRNA start -18 bp from mRNA start	EP737 described as gof in (Kraut et al., 2001). <i>poe<sup>[03420]</sup></i> has no effect.
<i>TMS1d</i>	EP(3)807	-24 bp from mRNA start	<i>Df(3L)st-e4</i> (72D-73A) enhanced GG17 (see text).
<i>cdi</i>	EP(3)3319	In first non coding exon	Described as gof in (Kraut et al., 2001) <i>cdi<sup>47</sup></i> has no effect.
<b>E. Others</b>			
<i>Traf2</i>	EP(1)325	- 257 bp from mRNA start	<i>Df(1)GE202</i> (7D12-7E3) has no effect
<i>wun2</i>	EP(2)652	-4,6kb from mRNA start may affect <i>wun</i> UAS+/-	May affect <i>wunen</i> . <i>wun<sup>EMS4</sup></i> and <i>P{lacW}wun<sup>K10201</sup></i> have no effect.
CG14959	EP(2)714 EP(2)3139	Both EPs inserted -7,6 kb from mRNA start	Described as gof (Tseng and Hariharan, 2002; Pena-Rangel et al., 2002). <i>P{SUP-or-P}KG0365</i> has no effect
CG5261	EP(2)816	-3kb from mRNA start	Described as gof (Abdelilah-Seyfried et al., 2000; Pena-Rangel et al., 2002).
		May affect <i>chameau</i> ( <i>chm</i> ) (3' to <i>chm</i> )	<i>P{GTI}chm<sup>[BG02254]</sup></i> has no effect
CG3624	EP(2)827	- 40 bp from mRNA start	<i>P{SUPor-P}CG3624<sup>[KG05061]</sup></i> has no effect
<i>rho-6</i>	EP(2)2023	-958 bp from mRNA start	<i>P{SUPor-P}rho-6<sup>[KG09603]</sup></i> has no effect
CG6701	EP(2)2054	5'UTR, -251 bp from AUG	Described as gof (Tseng and Hariharan, 2002; Pena-Rangel et al., 2002). <i>P{SUPor-P}CG6701<sup>[KG00917]</sup></i> has no effect
CG8740	EP(2)2233	-36 pb from mRNA (GH05582) start	/
<i>numb</i>	EP(2)2455	- 520 bp from <i>numb</i> transcript CG3779-RA	<i>numb<sup>l</sup></i> has no effect
<i>cpo</i>	EP(3)3395 EP(3)3608	Both in second intron of <i>cpo</i> transcript, -2,2 kb from CUC start codon	<i>cpo<sup>01432</sup></i> has no effect
CG2017	EP(3)3503	5' UTR, - 40 bp from AUG start codon	Described as gof (Kraut et al 2001). <i>Df(3R)Tpl10,DpDfd[rv1]</i> has no effect

Note that Gal4-dependent regulation can be functional at considerable distance of up to 10 kb (Nicolai et al., 2003).

#### References

- Nicolai, M., Lasbleiz, C. and Dura, J. M. (2003). Gain-of-function screen identifies a role of the Src64 oncogene in Drosophila mushroom body development. *J. Neurobiol.* 57, 291-302.
- Pena-Rangel, M. T., Rodriguez, I. and Riesgo-Escovar, J. R. (2002). A misexpression study examining dorsal thorax formation in Drosophila melanogaster. *Genetics* 160, 1035-1050.
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