

**Table S1. Subtle effects of *Ral* or *Ral*<sup>CA</sup> overexpression in R4**

<b>Ommatidial phenotypes (five eyes)</b>			
Genotype	Number symmetrical	Number reversed	Number wild type
(R3>R4) <i>Ral</i> <sup>PG69</sup> ; 1 <i>XUAS-Ral</i>	3	0	1089
<i>Ral</i> <sup>PG69</sup> ; 2 <i>XUAS-Ral</i>	4	0	1144
(R3~R4) <i>ro-gal4</i> ; 1 <i>XUAS-Ral</i>	4	0	1037
<i>ro-gal4</i> ; 2 <i>XUAS-Ral</i>	33	3	1073
(R3>R4) <i>Ral</i> <sup>PG69</sup> ; 1 <i>XUAS-Ral</i> <sup>CA</sup>	*Lethal		
(R3~R4) <i>ro-gal4</i> ; 1 <i>XUAS-Ral</i> <sup>CA</sup>	2	0	1077
<i>ro-gal4</i> ; 2 <i>XUAS-Ral</i> <sup>CA</sup>	32	6	1006

\*Overexpression of *Ral*<sup>CA</sup> outside of the eye with *Ral*<sup>PG69</sup> is lethal. Expression of *Ral*<sup>CA</sup> with *ro-gal4* is eye specific, and thus viable flies are obtained.