Table 4. Summary of RNAi phenotypes

Gene	RNAi line	MB defects*				Total, %	AL defects, %(*n*)†	OL defects, %(*n*)†	No. of brains	Phenotypes
		(-), % (*n*)	(±), %(*n*)	(+), %(*n*)	(++), %(*n*)					
CG4842	18814R-1	80 (16)	5 (1)	10 (2)	5 (1)	20	5 (1)	0 (0)	20	Aberrant α-lobes (1). β-Lobe missing (1). Faint medial lobe (2). KCs group misshaped (1). Faint ALs (1).
CG13297	13297R-2	100 (20)	0 (0)	0 (0)	0 (0)	0	0 (0)	0 (0)	20	None
CG32473	8775R-3	90 (18)	5 (1)	0 (0)	5 (1)	10	0 (0)	0 (0)	20	Large calyx (1). Aberrant KC grouping (2).
CG12866	12866R-1	95 (19)	0 (0)	0 (0)	5 (1)	5	0 (0)	0 (0)	20	Faint α-lobe (1). Aberrant medial lobes (1). Thick peduncle (1). Aberrant KCs (1).
CG5476	5476R-3	82 (18)	5 (1)	14 (3)	0 (0)	18	0 (0)	0 (0)	22	β-Lobe fusion (4). Ectopic GFP punctuates (1).
Hr46	11823R-4	70 (45)	16 (10)	8 (5)	6 (4)	30	0 (0)	0 (0)	64	α-Lobe misshaped (5). Ectopic GFP signals near α-lobe (1). β-Lobe fusion (7). β'-Lobe crossing (1). β-Lobe faint or misshaped (7). Split peduncle (1).
Dhod	9741R-2	90 (18)	10 (2)	0 (0)	0 (0)	10	0 (0)	0 (0)	20	β-Lobe fusion (2).
CG14446	14446R-2	88 (21)	13 (3)	0 (0)	0 (0)	12	0 (0)	0 (0)	24	Aberrant α-lobe (3).
CG2267	2267R-3	88 (15)	0 (0)	6 (1)	6 (1)	12	0 (0)	0 (0)	17	β-Lobes fusion (1). Aberrant peduncle and calyx (2).
CG3371	3371R-2	90 (18)	5 (1)	5 (1)	0 (0)	10	0 (0)	0 (0)	20	β-Lobe fusion (2).
trio	18214R-1	86 (19)	9 (2)	5 (1)	0 (0)	14	0 (0)	0 (0)	20	Thin peduncle (1). β-Lobe misshaped (2).
CG7945	17014R-4	86 (18)	0 (0)	5 (1)	10 (2)	14	0 (0)	0 (0)	21	β-Lobe fusion (2). Split peduncle (1). Irregular calyx (1). Aberrant KCs (1).
jing	9403R-2	97 (34)	3 (1)	0 (0)	0 (0)	3	0 (0)	0 (0)	35	β-Lobe fusion (1).
CG7846	7846R-2	95 (18)	0 (0)	0 (0)	5 (1)	5	0 (0)	0 (0)	19	β-Lobe fusion (1). α-Lobe missing (1).
CG12301	12301R-2	70 (14)	30 (6)	0 (0)	0 (0)	30	0 (0)	0 (0)	20	Elongated α-lobe (2). β-Lobe fusion (4).

Table 4. Summary of RNAi phenotypes   2/3

CG10505	10505R-1	85 (17)	5 (1)	5 (1)	5 (1)	15	0 (0)	0 (0)	20	β-Lobe misshaped (1). β-Lobe fusion (2). Faint lobes and KCs (1).
CG31559	31559R-3	85 (17)	15 (3)	0 (0)	0 (0)	15	0 (0)	0 (0)	20	Elongated α-lobe (1). β-Lobe fusion (1). Aberrant KCs (1).
CG6372	6372R-2	57 (8)	14 (2)	21 (3)	7 (1)	43	0 (0)	0 (0)	14	α-Lobe disfigured (1). β-Lobe misshaped (1). β-Lobe missing (1). β-Lobe fusion (2). Thick peduncle (1).
Brf	4155R-1	88 (14)	0 (0)	13 (2)	0 (0)	12	0 (0)	0 (0)	16	KCs group misshaped (1). Faint medial lobes (1).
CG13604	13604R-1	95 (21)	5 (1)	0 (0)	0 (0)	5	0 (0)	0 (0)	22	β-Lobe fusion (1).
RluA-1	13143R-3	85 (17)	10 (2)	0 (0)	5 (1)	15	0 (0)	0 (0)	20	α-Lobe missing (1). β-Lobe fusion (3).
CG11178	11178R-3	95 (19)	5 (1)	0 (0)	0 (0)	5	0 (0)	0 (0)	20	Ectopic GFP signals (1).
CG8412	8412R-1	90 (18)	5 (1)	5 (1)	0 (0)	10	0 (0)	0 (0)	20	Ectopic GFP punctates (1). Aberrant KCs (1).
CG17221	17221R-1	70 (14)	10 (2)	10 (2)	10 (2)	30	0 (0)	0 (0)	20	Aberrant α-lobe (2). α-Lobe missing (1). β-Lobe fusion (3). Aberrant peduncle and calyx (1).
CG9296	9296R-3	75 (15)	5 (1)	15 (3)	5 (1)	25	0 (0)	75 (15)	20	Aberrant α-lobe (3). Faint medial lobes (1). β-Lobe fusion (3). OL degeneration (15).
CG13879	13879R-3	100 (20)	0 (0)	0 (0)	0 (0)	0	0 (0)	0 (0)	20	None
Itp-r83A	1063R-2	76 (16)	19 (4)	5 (1)	0 (0)	24	5 (1)	0 (0)	21	β-Lobe fusion (1). Aberrant KCs (4). Faint ALs (1).
CG6083	6083R-1	65 (13)	5 (1)	25 (5)	5 (1)	35	0 (0)	0 (0)	20	Short α-lobe (2). β-Lobe fusion (6).
PP2A-B'	7901R-2	92 (23)	8 (2)	0 (0)	0 (0)	8	0 (0)	0 (0)	25	Aberrant KCs (1). Thin β-lobe (1).
elk	5076R-2	90 (18)	5 (1)	0 (0)	5 (1)	10	0 (0)	0 (0)	20	β-Lobe fusion (1). Faint KCs and calyx (1).
CG4853	4853R-1	76 (13)	12 (2)	12 (2)	0 (0)	24	6 (1)	0 (0)	17	β-Lobe fusion (2). Thick medial lobe (1). Faint ALs (1).
CG10948	10948R-1	97 (29)	0 (0)	0 (0)	3 (1)	30	0 (0)	0 (0)	30	Aberrant KCs (1)

Table 4. Summary of RNAi phenotypes 3/3

Nep1	5894R-1	100 (20)	0 (0)	0 (0)	0 (0)	0	10 (2)	0 (0)	20	Ectopic neuropil near AL (2).
CG10880	10880R-1	95 (19)	0 (0)	0 (0)	5 (1)	5	0 (0)	0 (0)	20	Split peduncle (1). Faint β-lobe (1).
CG10083	10083R-3	90 (18)	5 (1)	5 (1)	0 (0)	10	0 (0)	0 (0)	20	β-Lobe fusion (2).
mod (mdg4)	7836R-2	91 (19)	10 (2)	0 (0)	0 (0)	9	0 (0)	0 (0)	21	Thin β-lobe (1). Irregular peduncle (1).
usp	4380R-1	80 (16)	20 (4)	0 (0)	0 (0)	20	0 (0)	0 (0)	20	Faint α-lobe (1). β-Lobe fusion (1). Thin peduncle (1). Ectopic GFP sgnals (1).
CG7328	7328R-3	79 (15)	15 (3)	5 (1)	0 (0)	21	5 (1)	0 (0)	19	Ectopic cells (1). Thin α-lobe (1). β-Lobe fusion (1). Medial lobes misshaped (1). Faint ALs (1).
CG2915	2915R-3	83 (15)	11 (2)	6 (1)	0 (0)	17	0 (0)	0 (0)	18	α-Lobe terminal misshaped (1). Swollen γ-lobe (1). Irregular peduncle (2).
CG9248	9248R-4	85 (17)	0 (0)	10 (2)	5 (1)	15	0 (0)	0 (0)	20	Thin β-lobe (2). Aberrant KC grouping (2).

Anatomical MB defects caused by transgenic RNAi. Forty genes were examined. Expression of UAS-RNAi was driven by OK107, which expresses Gal4 in most MB neurons and subsets of AL and OL neurons. For each gene, two independent RNAi lines were generated and examined for structural brain defects. Data of the lines that caused higher MB defects are listed. MB defects were examined by confocal microscopy using mCD8::GFP as a reporter.

*MB defects were categorized based on severities: (-), no defect; (±), weak defect; (+), moderate defect; and (++), strong defect. Number of brains belonging to each category is shown in parentheses. Total, percentage of brains exhibiting ±, +, and ++ defects.

†Structural defects in ALs and OLs in the same sample sets. Note that AL defects were rare and weak. OL degeneration was caused by only CG9296.