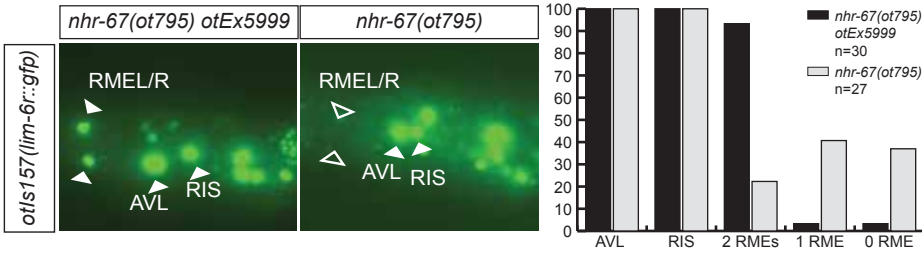
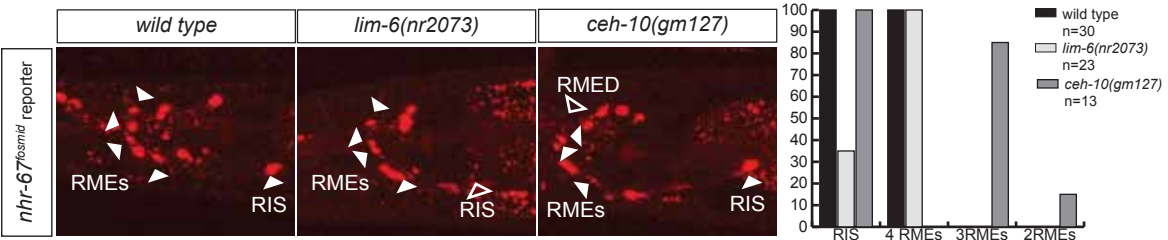


A



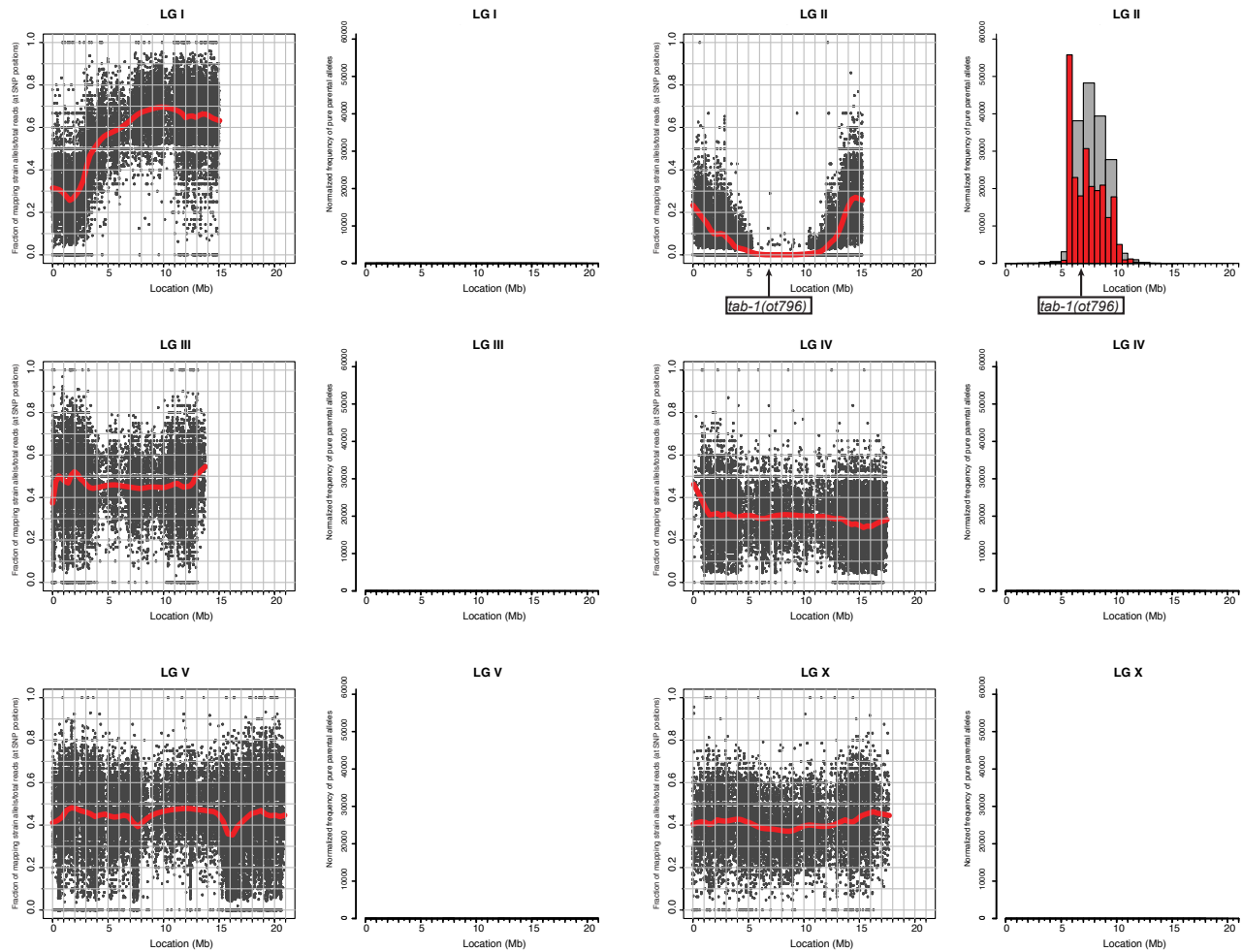
B



Suppl. Figure S1: Regulatory relation of *nhr-67* and other homeobox genes

A: *lim-6* expression is regulated by *nhr-67* in RMEL/R but not in RIS or AVL.

B: *nhr-67* fosmid expression is controlled by *ceh-10* in RMED and by *lim-6* in RIS.



Suppl.Fig.S2: Whole genome sequencing data for *tab-1* mutant identification. A previously described mapping/sequencing approach was used (Doitsidou et al., 2010), employing the CloudMap data analysis pipeline (Minevich et al., 2012).

Suppl. Table S2: GABA-negative, *unc-47*/*VGAT*-expressing neurons

Cells	anti-GABA	<i>unc-47</i> fosmid reporter	<i>unc-46</i> fosmid reporter	other neurotransmitter
AIB	-	+/-	-	Glu
AIN	-	++	-	Glu
AIY	-	+	-	ACh
ALN	-	+	-	ACh
ASE	-	+	-	Glu
AUA	-	+/-	-	none
AVG	-	+	-	none
AVK	-	+	-	Glu
CEPV	-	+	-	dopamine
DVA	-	++	-	ACh
FLP	-	+	-	Glu
IL1	-	+	-	Glu
OLL	-	+/-	-	Glu
PLN	-	+	-	ACh
RIA	-	+/-	++	Glu
RID	-	++	-	none
RIF	-	++	-	ACh
RIM	-	+/-	-	Glu
RIV	-	+	-	ACh
RMDD/V	-	-	++	ACh
SIA	-	++	-	ACh
URX	-	++	-	ACh
URY	-	+/-	-	Glu
MI	-	++	-	Glu
M1	-	+	-	ACh
M2	-	+	+	ACh
M3	-	+	-	ACh
M4	-	++	-	ACh
M5	-	+	-	ACh/Glu
I2	-	++	-	Glu
I4 or I6	-	++	-	none
I5	-	+	-	Glu
NSM	-	+	-	5HT

Suppl. Table S2: Summary of expression of GABA_A receptors

gab-1, *lgc-37*, *lgc-38* expression is from this paper (Fig.4), *exp-1* is from Beg et al., 2003, *lgc-35* from Jobson et al., 2015 and *unc-49* from Bamber et al., 1999.

cell type	<i>gab-1</i>	<i>lgc-37</i>	<i>lgc-38</i>	<i>exp-1</i>	<i>lgc-35</i>	<i>unc-49</i>
A/B MNs						
ADE						
AIB						
AIN						
AIY						
AIZ						
ASH						
AVA						
AVD						
AVE						
CEP						
DVA						
DVA						
FLP						
HSN						
IL2						
M3						
MC						
MI						
PDA						
PLM						
PLN						
PVC						
PVR						
PVT						
PVW						
RID						
RIV						
RMF						
SABD						
SIA						
SMD						
URA						
URB						
URX						
muscle						

Table S2: List of all neurotransmitters

Class	Neuron	Neurotransmitter	Cotransmitter	Comments
ADA	ADAL	Glu		
	ADAR	Glu		
ADE	ADEL	DA		
	ADER	DA		
ADF	ADFL	ACh	5HT	
	ADFR	ACh	5HT	
ADL	ADLL	Glu		
	ADLR	Glu		
AFD	AFDL	Glu		
	AFDR	Glu		
AIA	AIAL	ACh		
	AIAR	ACh		
AIB	AIBL	Glu		
	AIBR	Glu		
AIM	AIML	Glu	5HT	
	AIMR	Glu	5HT	
AIN	AINL	ACh		
	AINR	ACh		
AIY	AIYL	ACh		
	AIYR	ACh		
AIZ	AIZL	Glu		
	AIZR	Glu		
ALA	ALA	GABA		
ALM	ALML	Glu		
	ALMR	Glu		
ALN	ALNL	ACh		
	ALNR	ACh		
AQR	AQR	Glu		
AS	AS1	ACh		
	AS2	ACh		
	AS3	ACh		
	AS4	ACh		
	AS5	ACh		
	AS6	ACh		
	AS7	ACh		
	AS8	ACh		
	AS9	ACh		
	AS10	ACh		
	AS11	ACh		
ASE	ASEL	Glu		
	ASER	Glu		
ASG	ASGL	Glu		
	ASGR	Glu		
ASH	ASHL	Glu		
	ASHR	Glu		
ASI	ASIL	Unknown (orphan)		
	ASIR	Unknown (orphan)		
ASJ	ASJL	ACh		
	ASJR	ACh		
ASK	ASKL	Glu		
	ASKR	Glu		
AUA	AUAL	Glu		
	AUAR	Glu		
AVA	AVAL	ACh		also GABA, but usage unclear
	AVAR	ACh		also GABA, but usage unclear
AVB	AVBL	ACh		also GABA, but usage unclear
	AVBR	ACh		also GABA, but usage unclear
AVD	AVDL	ACh		
	AVDR	ACh		
AVE	AVEL	ACh		
	AVER	ACh		
AVF	AVFL	GABA		Clearance neuron
	AVFR	GABA		Clearance neuron
AVG	AVG	ACh		
AVH	AVHL	Unknown (orphan)		GABA, but usage unclear
	AVHR	Unknown (orphan)		GABA, but usage unclear
AVJ	AVJL	Unknown (orphan)		
	AVJR	Unknown (orphan)		
AVK	AVKL	Unknown (orphan)		
	AVKR	Unknown (orphan)		
AVL	AVL	GABA		
AVM	AVM	Glu		
AWA	AWAL	Unknown (orphan)		
	AWAR	Unknown (orphan)		
AWB	AWBL	ACh		
	AWBR	ACh		
AWC	AWCL	Glu		
	AWCR	Glu		
BAG	BAGL	Glu		
	BAGR	Glu		
BDU	BDUL	Unknown (orphan)		
	BDUR	Unknown (orphan)		
CAN	CANL	unknown MA (cat-1)		
	CANR	unknown MA (cat-1)		
CEP	CEPDL	DA		
	CEPDR	DA		
	CEPVL	DA		
	CEPVR	DA		
DA	DA1	ACh		
	DA2	ACh		
	DA3	ACh		
	DA4	ACh		
	DA5	ACh		
	DA6	ACh		
	DA7	ACh		
	DA8	ACh		
	DA9	ACh		
DB	DB1/3	ACh		
	DB2	ACh		
	DB3/1	ACh		
	DB4	ACh		
	DB5	ACh		
	DB6	ACh		
	DB7	ACh		
DD	DD1	GABA		
	DD2	GABA		

	DD3	GABA		
	DD4	GABA		
	DD5	GABA		
	DD6	GABA		
DVA	DVA	ACh		
DVB	DVB	GABA		
DVC	DVC	Glu		
FLP	FLPL	Glu		
	FLPR	Glu		
HSN	HSNL	ACh (minor)	5HT	
	HSNR	ACh (minor)	5HT	
IL1	IL1DL	Glu		
	IL1DR	Glu		
	IL1L	Glu		
	IL1R	Glu		
	IL1VL	Glu		
	IL1VR	Glu		
IL2	IL2DL	ACh		
	IL2DR	ACh		
	IL2L	ACh		
	IL2R	ACh		
	IL2VL	ACh		
	IL2VR	ACh		
LUA	LUAL	Glu		
	LUAR	Glu		
OLL	OLLL	Glu		
	OLLR	Glu		
OLQ	OLQDL	Glu		
	OLQDR	Glu		
	OLQVL	Glu		
	OLQVR	Glu		
PDA	PDA	ACh		
PDB	PDB	ACh		
PDE	PDEL	DA		
	PDER	DA		
PHA	PHAL	Glu		
	PHAR	Glu		
PHB	PHBL	Glu		
	PHBR	Glu		
PHC	PHCL	Glu		
	PHCR	Glu		
PLM	PLML	Glu		
	PLMR	Glu		
PLN	PLNL	ACh		
	PLNR	ACh		
PQR	PQR	Glu		
PVC	PVCL	ACh		
	PVCR	ACh		
PVD	PVDL	Glu		
	PVDR	Glu		
PVM	PVM	Unknown (orphan)		
PVN	PVNL	ACh		
	PVNR	ACh		
PVP	PVPL	ACh		
	PVPR	ACh		
PVQ	PVQL	Glu		
	PVQR	Glu		
PVR	PVR	Glu		
PVT	PVT	Unknown (orphan)		
PVW	PVWL	Unknown (orphan)		
	PVWR	Unknown (orphan)		
RIA	RIAL	Glu		
	RIAR	Glu		
RIB	RIBL	GABA	ACh (minor)	
	RIBR	GABA	ACh (minor)	
RIC	RICL	Octopamine		
	RICR	Octopamine		
RID	RID	Unknown (orphan)		
RIF	RIFL	ACh		
	RIFR	ACh		
RIG	RIGL	Glu		
	RIGR	Glu		
RIH	RIH	ACh	5HT	
RIM	RIML	Glu	Tyramine	
	RIMR	Glu	Tyramine	
RIP	RIFL	Unknown (orphan)		
	RIFR	Unknown (orphan)		
RIR	RIR	ACh		
RIS	RIS	GABA		
RIV	RIVL	ACh		
	RIVR	ACh		
RMD	RMDDL	ACh		
	RMDDR	ACh		
	RMDL	ACh		
	RMDR	ACh		
	RMDVL	ACh		
	RMDVR	ACh		
RME	RMED	GABA		
	RMEL	GABA		
	RMER	GABA		
	RMEV	GABA		
RMF	RMFL	ACh		
	RMFR	ACh		
RMG	RMGL	Unknown (orphan)		
	RMGR	Unknown (orphan)		
RMH	RMHL	ACh		
	RMHR	ACh		
SAA	SAADL	ACh		
	SAADR	ACh		
	SAAVL	ACh		
	SAAVR	ACh		
SAB	SABD	ACh		
	SABVL	ACh		
	SABVR	ACh		
SDQ	SDQL	ACh		
	SDQR	ACh		
SIA	SIADL	ACh		
	SIADR	ACh		
	SIAVL	ACh		
	SIAVR	ACh		
SIB	SIBDL	ACh		
	SIBDR	ACh		
	SIBVL	ACh		

	SIBVR	ACh		
SMB	SMBDL	ACh		
	SMBDR	ACh		
	SMBVL	ACh		
	SMBVR	ACh		
SMD	SMDDL	ACh	GABA	
	SMDDR	ACh	GABA	
	SMDVL	ACh	GABA	
	SMDVR	ACh	GABA	
URA	URADL	ACh		
	URADR	ACh		
	URAVL	ACh		
	URAVR	ACh		
URB	URBL	ACh		
	URBR	ACh		
URX	URXL	ACh		
	URXR	ACh		
URY	URYDL	Glu		
	URYDR	Glu		
	URYVL	Glu		
	URYVR	Glu		
VA	VA1	ACh		
	VA2	ACh		
	VA3	ACh		
	VA4	ACh		
	VA5	ACh		
	VA6	ACh		
	VA7	ACh		
	VA8	ACh		
	VA9	ACh		
	VA10	ACh		
	VA11	ACh		
VB	VA12	ACh		
	VB1	ACh		
	VB2	ACh		
	VB3	ACh		
	VB4	ACh		
	VB5	ACh		
	VB6	ACh		
	VB7	ACh		
	VB8	ACh		
	VB9	ACh		
	VB10	ACh		
VC	VB11	ACh		
	VC1	ACh		
	VC2	ACh		
	VC3	ACh		
	VC4	ACh	5HT	
	VC5	ACh	5HT	
VD	VC6	ACh		
	VD1	GABA		
	VD2	GABA		
	VD3	GABA		
	VD4	GABA		
	VD5	GABA		
	VD6	GABA		
	VD7	GABA		
	VD8	GABA		
	VD9	GABA		
	VD10	GABA		
	VD11	GABA		
	VD12	GABA		
VD13	GABA			
SUMMARY STATS				
EXTRAPHARYNGEAL NEURONS				
Sensory neuron:		Sensory neuron:		
38/104 classes		ACh: 9 classes		
87/282 total neurons		Glu: 22		
Motorneuron:		GABA: 1 (ALA)		
24/104		Aminergic: 3 (all Dopa)		
118/282		Unknown: 3 (ASI, AWA, PVM)		
Not Sens/Motor:		Motor neuron:		
42/104		ACh: 17 classes		
77/282		Glu: 1 (RIM)		
		GABA: 6 (incl. SMD)		
		Aminergic: 0		
		Unknown: 1 (RMG)		
		Not Sens/Motor:		
		ACh: 19 classes		
		Glu: 11		
		GABA: 3 (RIS, RIB, AVF)		
		Aminergic: 2 (CAN, RIC)		
		Unknown: 8		
Pharyngeal neurons				
I1	I1L	ACh		
	I1R	ACh		
I2	I2L	Glu		
	I2R	Glu		
I3	I3	ACh		
I4	I4	Unknown (orphan)		
I5	I5	Glu & 5HT		
	I6	Unknown (orphan)		
M1	M1	ACh		
	M2	ACh		
M3	M2R	ACh		
	M3L	Glu		
M4	M3R	Glu		
	M4	ACh		
M5	M5	ACh	Glu	
MC	MCL	ACh		
	MCR	ACh		
MI	MI	Glu		
	NSML	5HT		
NSM	NSMR	5HT		