

Figure S1 Representative unprocessed confocal images for Figures 4A'-C'; Figures 5A-C and Figures 6A-C. Confocal microscopy was performed using Olympus Microscope with fluoview acquisition software (Olympus, Center Valley, PA). Images were displayed as projections of 1uM serial Z- sections. Consecutive subsets of the Z-stacks were utilized for the final projections.

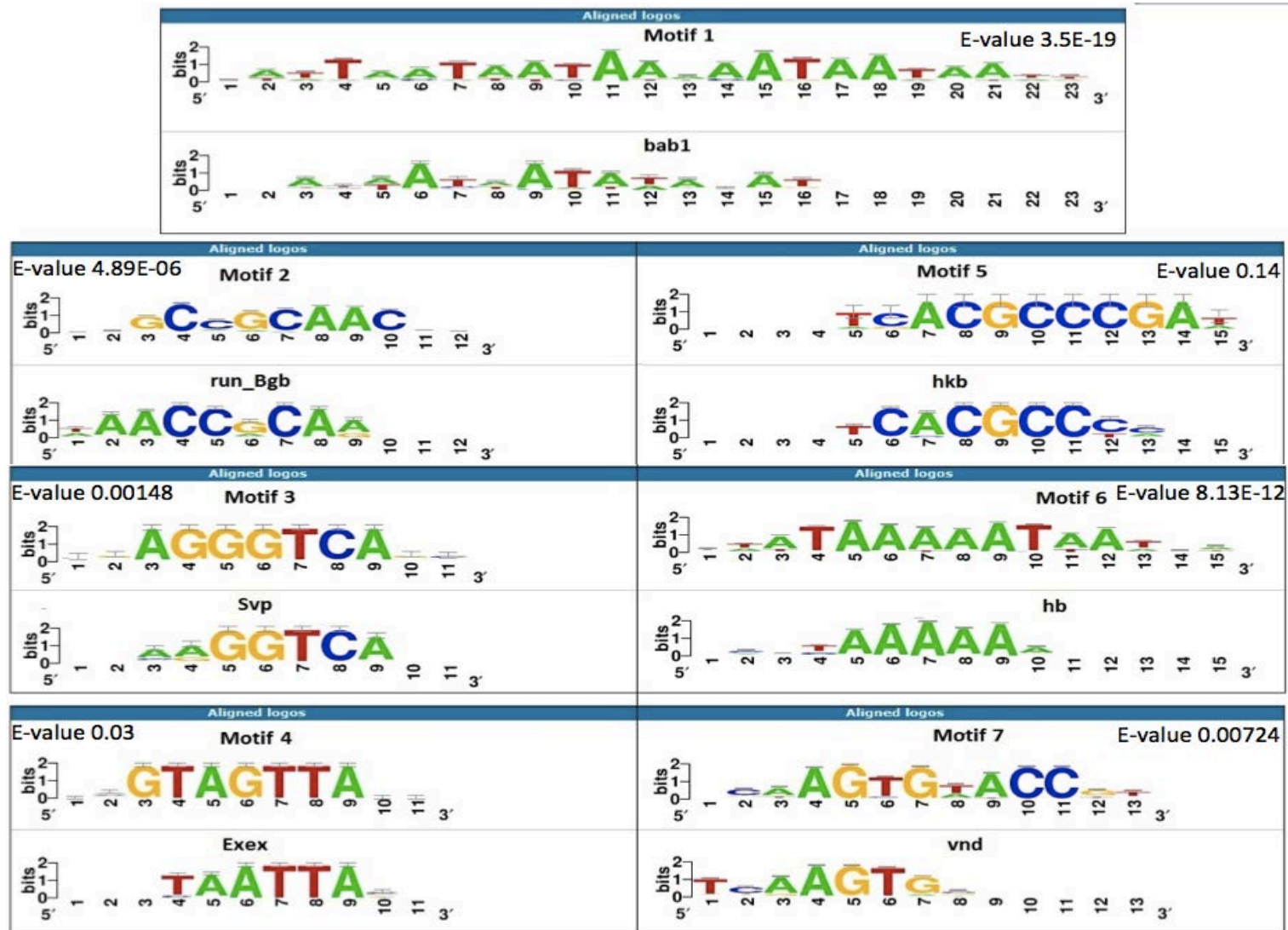


Figure S2 Transcription factor (TF) motifs enriched in Tip60 neuronal gene promoters. TF motifs were identified using the MEME-Chip platform. . Significance values for each discovered motif are represented as E-value (false discovery rate for each pattern search), and matching TF is shown below each match. TFs are bab1 (bric a brac 1) that functions in dendrite arborization, Run-Bgb (big brother), a *Drosophila* CNS TF, Svp (seven up) that functions in CNS development, Exex (extra-extra) that functions in neuroblast development, Hkb (huckebein) that functions in CNS development, Hb (hunchback) that functions in neuroblast fate repression and Vnd (ventral nervous system defective) that functions in brain development.

Table S1 Tip60 gene targets

Gene Symbol	FlyBase ID	Gene Symbol	FlyBase ID	Gene Symbol	FlyBase ID
2mit	FBgn0260793	CG10910	FBgn0034289	CG17514	FBgn0039959
4EHP	FBgn0053100	CG10947	FBgn0032857	CG17839	FBgn0036454
5.8SrRNA:CR40454	FBgn0250731	CG11360	FBgn0039920	CG2121	FBgn0033289
Ac78C	FBgn0024150	CG11873	FBgn0039633	CG30069	FBgn0050069
AGO3	FBgn0250816	CG12061	FBgn0040031	CG30116	FBgn0028496
alpha4GT2	FBgn0039378	CG12502	FBgn0035171	CG30389	FBgn0050389
alpha-Man-I	FBgn0259170	CG12535	FBgn0029657	CG30438	FBgn0050438
Appl	FBgn0000108	CG12541	FBgn0029930	CG31038	FBgn0051038
atms	FBgn0010750	CG12885	FBgn0039523	CG31221	FBgn0051221
bab1	FBgn0004870	CG13300	FBgn0035699	CG31324	FBgn0051324
bab2	FBgn0025525	CG13541	FBgn0034841	CG31619	FBgn0051619
bbg	FBgn0087007	CG13954	FBgn0033405	CG31702	FBgn0051702
beat-IV	FBgn0039089	CG14190	FBgn0030979	CG32373	FBgn0052373
beat-Vb	FBgn0038092	CG14431	FBgn0029922	CG32406	FBgn0052406
bol	FBgn0011206	CG14459	FBgn0037171	CG32486	FBgn0052486
bs	FBgn0004101	CG14636	FBgn0037217	CG32699	FBgn0052699
bxd	FBgn0020556	CG15465	FBgn0029746	CG32700	FBgn0052700
Cap-G	FBgn0259876	CG15831	FBgn0040034	CG32816	FBgn0052816
Ccn	FBgn0052183	CG16781	FBgn0029661	CG32850	FBgn0052850
Cda4	FBgn0052499	CG17018	FBgn0039972	CG32944	FBgn0052944
CR40571	FBgn0085746	CG5036	FBgn0028743	ken	FBgn0011236
CR40572	FBgn0085747	CG6051	FBgn0039492	kirre	FBgn0028369
CR40573	FBgn0085748	CG7369	FBgn0037188	kl-2	FBgn0001313
CR40574	FBgn0085749	CG7564	FBgn0036734	kl-3	FBgn0001314
CR40581	FBgn0085750	CG8861	FBgn0037676	kl-5	FBgn0001315
CR40582	FBgn0085751	CG9766	FBgn0037229	laccase2	FBgn0259247
CR40594	FBgn0085752	CHKov1	FBgn0045761	Lar	FBgn0000464
CR40597	FBgn0085754	chn	FBgn0015371	Lasp	FBgn0063485
CR40611	FBgn0085755	Con	FBgn0005775	lilli	FBgn0041111
CR40613	FBgn0085756	CR32010	FBgn0052010	Liprin-gamma	FBgn0034720
CR40621	FBgn0085757	CR33496	FBgn0053496	LpR2	FBgn0051092
CR40629	FBgn0085505	CR40461	FBgn0058461	luna	FBgn0040765
CR40640	FBgn0085759	CR40502	FBgn0085737	MESR3	FBgn0032694
CR40642	FBgn0085761	CR40503	FBgn0085738	MFS17	FBgn0058263
CR40668	FBgn0085764	CR40508	FBgn0085740	MRP	FBgn0032456
CR40677	FBgn0085765	CR40528	FBgn0085741	mtd	FBgn0013576
CR40679	FBgn0085766	CR40546	FBgn0085742	Muc26B	FBgn0040950
CR40712	FBgn0085768	CR40560	FBgn0085743	Muc30E	FBgn0053300
CR40728	FBgn0085769	CR40561	FBgn0085744	Muc68Ca	FBgn0036181
CR40734	FBgn0085770	CR40565	FBgn0085745	Muc68E	FBgn0053265
su(w[a])	FBgn0003638	SMSr	FBgn0052380	Ppr-Y	FBgn0046697
sxc	FBgn0261403	Snap25	FBgn0011288	pros	FBgn0004595
Syn1	FBgn0037130	Soxl00B	FBgn0024288	Prosap	FBgn0040752
Syt1	FBgn0004242	SPoCk	FBgn0052451	Ptp99A	FBgn0004369
tai	FBgn0041092	spok	FBgn0086917	px	FBgn0003175
Tequila	FBgn0023479	Ste:CG33240	FBgn0053240	raw	FBgn0003209
Tg	FBgn0031975	Ste:CG33241	FBgn0053241	Rbp6	FBgn0260943
timeout	FBgn0038118	Ste:CG33242	FBgn0053242	rl	FBgn0003256
TM4SF	FBgn0020372	SteXh:CG42398	FBgn0259817	roX1	FBgn0019661
toc	FBgn0015600	stnA	FBgn0016976	rut	FBgn0003301
tok	FBgn0004885	Su(Ste):CR42405	FBgn0259836	RYa-R	FBgn0004842
Trim9	FBgn0051721	Su(Ste):CR42407	FBgn0259838	sca	FBgn0003326
twin	FBgn0011725	Su(Ste):CR42418	FBgn0259849	Sdic2	FBgn0053497
Su(Ste):CR42440	FBgn0259871	Sgs1	FBgn0003372	pk	FBgn0003090

Gene Symbol	FlyBase ID	Gene Symbol	FlyBase ID	Gene Symbol	FlyBase ID
CG33158	FBgn0053158	CG40378	FBgn0058378	CR40741	FBgn0085771
CG33170	FBgn0053170	CG40467	FBgn0069977	CR40743	FBgn0085772
CG33267	FBgn0053267	CG40470	FBgn0058470	CR40766	FBgn0085773
CG33988	FBgn0053988	CG40813	FBgn0085521	CR40779	FBgn0085774
CG34031	FBgn0054031	CG40968	FBgn0085546	CR40959	FBgn0085777
CG34104	FBgn0083940	CG41343	FBgn0085625	CR40963	FBgn0085779
CG34106	FBgn0083942	CG41378	FBgn0085638	CR40976	FBgn0085780
CG34347	FBgn0085376	CG41520	FBgn0087011	CR41535	FBgn0085795
CG34353	FBgn0085382	CG41527	FBgn0085670	CR41539	FBgn0085796
CG34355	FBgn0085384	CG41562	FBgn0085693	CR41540	FBgn0085797
CG34356	FBgn0085385	CG42238	FBgn0250867	CR41544	FBgn0085799
CG34376	FBgn0085405	CG42249	FBgn0259101	CR41548	FBgn0085802
CG34417	FBgn0085446	CG42329	FBgn0259229	CR41550	FBgn0085803
CG3544	FBgn0031279	CG42395	FBgn0259741	CR41571	FBgn0085804
CG3726	FBgn0029824	CG42402	FBgn0259821	CR41583	FBgn0085805
CG3777	FBgn0024989	CG42534	FBgn0260487	CR41590	FBgn0085807
CG40006	FBgn0058006	CG42618	FBgn0261281	CR41591	FBgn0085808
CG40155	FBgn0058155	CG42637	FBgn0261360	CR41602	FBgn0085813
CG40160	FBgn0058160	CG4587	FBgn0028863	CR41604	FBgn0085814
CG40178	FBgn0058178	CG5004	FBgn0260748	CR41605	FBgn0085815
heph	FBgn0011224	Dop2R	FBgn0053517	CR41606	FBgn0085816
His1:CG31617	FBgn0051617	dpr6	FBgn0040823	CR41607	FBgn0085817
His1:CG33801	FBgn0053801	dpr8	FBgn0052600	CR41608	FBgn0085818
His2A:CG31618	FBgn0051618	Drip	FBgn0015872	CR41609	FBgn0085819
His2B:CG33908	FBgn0053908	ec	FBgn0000542	CR41613	FBgn0085822
His3:CG33866	FBgn0053866	ed	FBgn0000547	CR41617	FBgn0085823
His-Psi:CR31616	FBgn0051616	Eip63E	FBgn0005640	CR41618	FBgn0085824
His-Psi:CR31754	FBgn0051754	Eip75B	FBgn0000568	CR41619	FBgn0085825
His-Psi:CR33802	FBgn0053802	fd102C	FBgn0039937	CR41620	FBgn0085826
His-Psi:CR33805	FBgn0053805	fne	FBgn0086675	CR41621	FBgn0085827
hoe1	FBgn0041150	for	FBgn0000721	CR42195	FBgn0085828
InR	FBgn0013984	Fs	FBgn0259878	Cyp309a2	FBgn0041337
Ir40a	FBgn0259683	ftz-fl	FBgn0001078	d4	FBgn0033015
Ir41a	FBgn0040849	Fur1	FBgn0004509	Dbp80	FBgn0024804
Ir93a	FBgn0259215	gammaTry	FBgn0010359	Dgk	FBgn0085390
JIL-1	FBgn0020412	Gas8	FBgn0029667	Dh44-R2	FBgn0033744
jim	FBgn0027339	GEFmeso	FBgn0050115	dnc	FBgn0000479
KCNQ	FBgn0033494	Gprkl	FBgn0260798	dnr1	FBgn0260866
kek2	FBgn0015400	GS	FBgn0030882	dnt	FBgn0024245
kek5	FBgn0031016	Haspin	FBgn0046706	Dop1R1	FBgn0011582
Muc96D	FBgn0051439	Shawl	FBgn0085395	Pka-C3	FBgn0000489
Nipped-A	FBgn0053554	SK	FBgn0029761	Pka-R1	FBgn0259243
NIg2	FBgn0031866	skd	FBgn0003415	pIexB	FBgn0025740
nmo	FBgn0011817	Su(Ste):CR42443	FBgn0259874	sky	FBgn0032901
nvd	FBgn0259697	Ppl-Y2	FBgn0046698	SKIP	FBgn0051163
OdsH	FBgn0026058	unc-5	FBgn0034013	Su(Ste):CR42435	FBgn0259866
Ory	FBgn0046323	vtd	FBgn0260987	Su(Ste):CR42436	FBgn0259867
Papss	FBgn0020389	X11Lbeta	FBgn0052677	Su(Ste):CR42439	FBgn0259870
Parp	FBgn0010247	plum	FBgn0039431	Su(Ste):CR42442	FBgn0259873
pb	FBgn0051481	Ppl-Y1	FBgn0261399	sIs	FBgn0086906
Pc	FBgn0003042	Ubi-p63E	FBgn0003943	Su(Ste):CR42420	FBgn0259851
PH4alphaEFB	FBgn0039776	uif	FBgn0031879	Su(Ste):CR42425	FBgn0259856
phI	FBgn0003079	Sema-1a	FBgn0011259	pigs	FBgn0029881
-	-	-	-	-	-

Table S2 Tip60 neuronal gene targets

Gene Symbol	FlyBase ID	Gene Symbol	FlyBase ID	Gene Symbol	FlyBase ID
2mit	FBgn0260793	CG33988	FBgn0053988	Elp63E	FBgn0005640
Ac78C	FBgn0024150	CG34104	FBgn0083940	Elp75B	FBgn0000568
alpha-Man-I	FBgn0259170	CG34106	FBgn0083942	fd102C	FBgn0039937
Appl	FBgn0000108	CG34347	FBgn0085376	fne	FBgn0086675
atms	FBgn0010750	CG34353	FBgn0085382	for	FBgn0000721
bab1	FBgn0004870	CG34355	FBgn0085384	Fs	FBgn0259878
bab2	FBgn0025525	CG34356	FBgn0085385	ftz-f1	FBgn0001078
bbg	FBgn0087007	CG34376	FBgn0085405	Fur1	FBgn0004509
beat-IV	FBgn0039089	CG34417	FBgn0085446	Gas8	FBgn0029667
beat-Vb	FBgn0038092	CG3726	FBgn0029824	GEFmeso	FBgn0050115
bol	FBgn0011206	CG40006	FBgn0058006	Gprk1	FBgn0260798
bs	FBgn0004101	CG40155	FBgn0058155	GS	FBgn0030882
Cap-G	FBgn0259876	CG40160	FBgn0058160	Haspin	FBgn0046706
Ccn	FBgn0052183	CG40178	FBgn0058178	heph	FBgn0011224
Cda4	FBgn0052499	CG40378	FBgn0058378	His3:CG33866	FBgn0053866
CG11360	FBgn0039920	CG40467	FBgn0069977	His-Psi:CR31754	FBgn0051754
CG12502	FBgn0035171	CG40470	FBgn0058470	hoe1	FBgn0041150
CG12541	FBgn0029930	CG41520	FBgn0087011	lnR	FBgn0013984
CG12885	FBgn0039523	CG42329	FBgn0259229	lr41a	FBgn0040849
CG13300	FBgn0035699	CG4587	FBgn0028863	JIL-1	FBgn0020412
CG14431	FBgn0029922	CG5036	FBgn0028743	jim	FBgn0027339
CG14459	FBgn0037171	CG8861	FBgn0037676	KCNQ	FBgn0033494
CG14636	FBgn0037217	CG9766	FBgn0037229	kek2	FBgn0015400
CG15465	FBgn0029746	CHKov1	FBgn0045761	kek5	FBgn0031016
CG15831	FBgn0040034	chn	FBgn0015371	ken	FBgn0011236
CG17514	FBgn0039959	Con	FBgn0005775	kirre	FBgn0028369
CG17839	FBgn0036454	CR32010	FBgn0052010	kl-2	FBgn0001313
CG2121	FBgn0033289	CR41604	FBgn0085814	laccase2	FBgn0259247
CG30069	FBgn0050069	Cyp309a2	FBgn0041337	Lar	FBgn0000464
CG30116	FBgn0028496	d4	FBgn0033015	lilli	FBgn0041111
CG30389	FBgn0050389	Dbp80	FBgn0024804	Liprin-gamma	FBgn0034720
CG31038	FBgn0051038	Dgk	FBgn0085390	luna	FBgn0040765
CG31221	FBgn0051221	Dh44-R2	FBgn0033744	MFS17	FBgn0058263
CG31324	FBgn0051324	dnc	FBgn0000479	mtd	FBgn0013576
CG31619	FBgn0051619	dnr1	FBgn0260866	Muc96D	FBgn0051439
CG32406	FBgn0052406	dnt	FBgn0024245	Nipped-A	FBgn0053554
CG32486	FBgn0052486	Dop1R1	FBgn0011582	Nlg2	FBgn0031866
CG32700	FBgn0052700	Dop2R	FBgn0053517	nmo	FBgn0011817
CG32816	FBgn0052816	dpr6	FBgn0040823	Papss	FBgn0020389
CG32850	FBgn0052850	dpr8	FBgn0052600	Parp	FBgn0010247
CG32944	FBgn0052944	Drip	FBgn0015872	pb	FBgn0051481
CG33158	FBgn0053158	ec	FBgn0000542	Pc	FBgn0003042
CG33170	FBgn0053170	ed	FBgn0000547	PH4alphaEFB	FBgn0039776

Gene Symbol	FlyBase ID	Gene Symbol	FlyBase ID
phl	FBgn0003079	SMSr	FBgn0052380
pigs	FBgn0029881	Snap25	FBgn0011288
pk	FBgn0003090	SPoCk	FBgn0052451
Pka-C3	FBgn0000489	spok	FBgn0086917
Pka-R1	FBgn0259243	Ste:CG33240	FBgn0052340
plexB	FBgn0025740	Ste:CG33241	FBgn0053241
plum	FBgn0039431	Ste:CG33242	FBgn0053242
pros	FBgn0004595	stnA	FBgn0016976
Prosap	FBgn0040752	su(w[a])	FBgn0003638
Ptp99A	FBgn0004369	sxc	FBgn0261403
px	FBgn0003175	Syn1	FBgn0037130
raw	FBgn0003209	Syt1	FBgn0004242
Rbp6	FBgn0260943	tai	FBgn0041092
rl	FBgn0003256	Tequila	FBgn0023479
rut	FBgn0003301	Tg	FBgn0031975
RYa-R	FBgn0004842	TM4SF	FBgn0020372
sca	FBgn0003326	toc	FBgn0015600
Sdic2	FBgn0053497	tok	FBgn0004885
Sema-1a	FBgn0011259	Trim9	FBgn0051721
Shawl	FBgn0085395	Ubi-p63E	FBgn0003943
SK	FBgn0029761	uif	FBgn0031879
skd	FBgn0003415	unc-5	FBgn0034013
SKIP	FBgn0051163	vtd	FBgn0260987
sky	FBgn0032901	x11Lbeta	FBgn0052677
sls	FBgn0086906	-	-