



Sox11 promotes neuronal regeneration or death: complexities from heterogeneity

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Supplemental Table S2, Gene Ontology list of terms enriched or depleted by AAV-Sox11 versus AAV-Control in RGCs, related to Figure 3

List of significantly enriched Gene Ontology terms in the Biological Process category. Specifically, this list shows enrichment of terms at the extremes of either up- or down-regulated genes.

rank	GO biological process complete	gene set size	genes "up" in sox11	genes "down" in sox11	fold enrichment "up" in sox11	fold enrichment "down" in sox11	p-value "up" in sox11	p-value "down" in sox11	sum of enrichment "up" and "down"
1	synaptic transmission, glutamatergic	30		10			-9.6	0.001210	9.6
2	ceramide biosynthetic process	46	8		8.57		0.046700		8.57
3	excitatory postsynaptic potential	35		9		-7.41	0.040600		7.41
4	chemical synaptic transmission, postsynaptic	43		11		-7.37	0.003910		7.37
5	axonogenesis	305	24	36	3.88	-3.4	0.000242	0.000004	7.28
6	axon development	327	26	38	3.92	-3.35	0.000052	0.000002	7.27
7	eye photoreceptor cell differentiation	48		12		-7.2	0.001520		7.2
8	neuron-neuron synaptic transmission	69		17		-7.1	0.000006		7.1
9	regulation of postsynaptic membrane potential	45		11		-7.04	0.006060		7.04
10	cell morphogenesis involved in neuron differentiator	369	26	41	3.47	-3.2	0.000557	0.000001	6.67
11	ceramide metabolic process	74	10		6.66		0.030100		6.66
12	neuron projection morphogenesis	400	28	44	3.45	-3.17	0.000199	0.000000	6.62
13	neuron projection development	559	40	56	3.53	-2.89	0.000000	0.000000	6.42
14	regulation of synaptic transmission, glutamatergic	59		13		-6.35	0.001970		6.35
15	cell morphogenesis involved in differentiation	530	37	50	3.44	-2.72	0.000001	0.000004	6.16
16	neuron development	728	44	74	2.98	-2.93	0.000002	0.000000	5.91
17	neuron differentiation	902	55	88	3	-2.81	0.000000	0.000000	5.81
18	photoreceptor cell differentiation	60		12		-5.76	0.015200		5.76
19	cell-cell adhesion via plasma-membrane adhesion n	135	15		5.48		0.001460		5.48
20	regulation of neuron projection development	480	27	39	2.77	-2.34	0.022800	0.012100	5.11
21	cell projection morphogenesis	615	31	51	2.48	-2.39	0.038400	0.000160	4.87
22	generation of neurons	1423	70	118	2.42	-2.39	0.000000	0.000000	4.81
23	cell projection organization	932	50	70	2.64	-2.16	0.000006	0.000020	4.8
24	neurogenesis	1519	72	129	2.34	-2.45	0.000000	0.000000	4.79
25	cell morphogenesis	857	46	63	2.64	-2.12	0.000028	0.000282	4.76
26	action potential	91		15		-4.75	0.009040		4.75
27	regulation of synapse assembly	86		14		-4.69	0.023500		4.69
28	synapse organization	137		22		-4.63	0.000050		4.63
29	locomotion	982	43	84	2.16	-2.46	0.021000	0.000000	4.62
30	cellular component morphogenesis	937	46	66	2.42	-2.03	0.000388	0.000623	4.45
31	cell development	1543	73	113	2.33	-2.11	0.000000	0.000000	4.44
32	adult behavior	165		25		-4.36	0.000015		4.36
33	neuromuscular process	120		18		-4.32	0.003080		4.32
34	nervous system development	1963	78	156	1.96	-2.29	0.000075	0.000000	4.25
35	axon guidance	181		25		-3.98	0.000090		3.98
36	regulation of synapse organization	123		17		-3.98	0.019000		3.98
37	neuron projection guidance	183		25		-3.93	0.000111		3.93
38	hindbrain development	140		19		-3.91	0.006460		3.91
39	gliogenesis	187		25		-3.85	0.000167		3.85
40	regulation of transport	1731	67	105	1.91	-1.75	0.002530	0.000186	3.66
41	anatomical structure morphogenesis	2100	75	132	1.76	-1.81	0.009710	0.000000	3.57
42	regulation of localization	2409	91	141	1.86	-1.69	0.000039	0.000005	3.55
43	positive regulation of neuron projection developmen	281	20		3.51		0.015600		3.51
44	cell differentiation	3299	117	193	1.75	-1.69	0.000005	0.000000	3.44
45	regulation of synapse structure or activity	268		32		-3.44	0.000027		3.44
46	regulation of cellular component organization	2248	86	118	1.89	-1.51	0.000064	0.036600	3.4
47	system development	3775	129	221	1.68	-1.69	0.000005	0.000000	3.37
48	regulation of membrane potential	364		42		-3.32	0.000000		3.32
49	regulation of multicellular organismal process	2623	86	154	1.62	-1.69	0.043300	0.000000	3.31
50	cellular developmental process	3503	118	197	1.66	-1.62	0.000087	0.000000	3.28
51	anterograde trans-synaptic signaling	346		39		-3.25	0.000003		3.25
52	chemical synaptic transmission	346		39		-3.25	0.000003		3.25
53	synaptic signaling	346		39		-3.25	0.000003		3.25
54	trans-synaptic signaling	346		39		-3.25	0.000003		3.25
55	multicellular organism development	4344	141	244	1.6	-1.62	0.000019	0.000000	3.22
56	single-multicellular organism process	4999	158	280	1.56	-1.61	0.000008	0.000000	3.17
57	positive regulation of cell projection organization	359	23		3.16		0.015500		3.16
58	animal organ development	2740	89	144	1.6	-1.51	0.041300	0.002370	3.11
59	anatomical structure development	4722	147	258	1.53	-1.57	0.000119	0.000000	3.1
60	muscle system process	215		23		-3.08	0.025800		3.08
61	learning or memory	244		26		-3.07	0.006480		3.07
62	developmental process	5031	153	271	1.5	-1.55	0.000245	0.000000	3.05
63	single-organism developmental process	4987	152	269	1.5	-1.55	0.000242	0.000000	3.05
64	regulation of calcium ion transport	218		23		-3.04	0.032200		3.04
65	single-organism behavior	437		46		-3.03	0.000001		3.03
66	cellular component organization	4567	137	223	1.48	-1.41	0.004380	0.000184	2.89
67	positive regulation of cellular process	4442	134	215	1.49	-1.39	0.004560	0.000751	2.88
68	positive regulation of biological process	4892	149	231	1.5	-1.36	0.000379	0.001460	2.86
69	modulation of synaptic transmission	322		32		-2.86	0.001670		2.86
70	cellular component organization or biogenesis	4731	138	228	1.44	-1.39	0.018900	0.000351	2.83
71	inorganic ion transmembrane transport	356		35		-2.83	0.000586		2.83
72	regulation of transmembrane transport	381		37		-2.8	0.000338		2.8
73	inorganic cation transmembrane transport	312		30		-2.77	0.007730		2.77
74	regulation of ion transmembrane transport	366		35		-2.75	0.001120		2.75

75	chemotaxis	410		39		-2.74	0.000250	2.74
76	cognition	273		26		-2.74	0.047300	2.74
77	taxis	412		39		-2.73	0.000283	2.73
78	behavior	604		57		-2.72	0.000000	2.72
79	ion transmembrane transport	437		41		-2.7	0.000161	2.7
80	regulation of metal ion transport	341		32		-2.7	0.005670	2.7
81	cation transmembrane transport	329		30		-2.63	0.021900	2.63
82	single-organism cellular process	10437	288	449	1.36	-1.24	0.000000	2.6
83	regulation of cell morphogenesis involved in differen	356		32		-2.59	0.013900	2.59
84	regulation of ion transport	556		50		-2.59	0.000018	2.59
85	positive regulation of neuron differentiation	368		33		-2.58	0.010100	2.58
86	cell adhesion	1068	56		2.58		0.000001	2.58
87	positive regulation of nervous system development	527		47		-2.57	0.000069	2.57
88	biological adhesion	1078	56		2.56		0.000002	2.56
89	eye development	340		30		-2.54	0.041300	2.54
90	single-organism process	11808	319	496	1.33	-1.21	0.000000	2.54
91	regulation of system process	479		42		-2.53	0.000671	2.53
92	regulation of cell projection organization	611	31		2.5		0.033800	2.5
93	metal ion transport	504		43		-2.46	0.000984	2.46
94	regulation of cellular process	9927	252	406	1.25	-1.18	0.009560	2.43
95	biological regulation	10948	273	452	1.23	-1.19	0.008280	2.42
96	regulation of biological process	10441	260	426	1.23	-1.18	0.029300	2.41
97	regulation of neuron differentiation	635		53		-2.4	0.000068	2.4
98	cellular process	13385	335	540	1.23	-1.16	0.000002	2.39
99	cell-cell adhesion	718	34		2.33		0.049700	2.33
100	cell migration	699		56		-2.31	0.000102	2.31
101	cell part morphogenesis	637		51		-2.31	0.000472	2.31
102	movement of cell or subcellular component	1122		90		-2.31	0.000000	2.31
103	positive regulation of cellular component organizatio	1171	55		2.31		0.000076	2.31
104	central nervous system development	718		57		-2.29	0.000103	2.29
105	cell motility	785		62		-2.27	0.000028	2.27
106	localization of cell	785		62		-2.27	0.000028	2.27
107	positive regulation of cell development	561		44		-2.26	0.006580	2.26
108	regulation of nervous system development	869		68		-2.25	0.000007	2.25
109	brain development	544		42		-2.22	0.017200	2.22
110	ion transport	972		75		-2.22	0.000002	2.22
111	sensory organ development	534		41		-2.21	0.025900	2.21
112	head development	588		45		-2.2	0.009400	2.2
113	transmembrane transport	707		54		-2.2	0.000850	2.2
114	regulation of cell morphogenesis	552		42		-2.19	0.024500	2.19
115	ion homeostasis	561		42		-2.16	0.036100	2.16
116	biological_process	20430	445	751	1.07	-1.06	0.000008	2.13
117	regulation of neurogenesis	772		57		-2.13	0.001120	2.13
118	regulation of cell development	945		69		-2.1	0.000079	2.1
119	cation transport	608		44		-2.08	0.049600	2.08
120	positive regulation of cell differentiation	926		66		-2.05	0.000407	2.05
121	intracellular signal transduction	1209	50		2.04		0.015500	2.04
122	chemical homeostasis	863		60		-2	0.003780	2
123	cell-cell signaling	753		52		-1.99	0.026900	1.99
124	protein phosphorylation	728		50		-1.98	0.047900	1.98
125	positive regulation of catalytic activity	907		62		-1.97	0.004230	1.97
126	positive regulation of molecular function	1203		80		-1.92	0.000273	1.92
127	negative regulation of multicellular organismal proce	1059		69		-1.88	0.005200	1.88
128	positive regulation of multicellular organismal proces	1514		99		-1.88	0.000013	1.88
129	positive regulation of developmental process	1279		83		-1.87	0.000417	1.87
130	regulation of cell differentiation	1598		102		-1.84	0.000024	1.84
131	positive regulation of phosphate metabolic process	1006		64		-1.83	0.028800	1.83
132	positive regulation of phosphorus metabolic process	1006		64		-1.83	0.028800	1.83
133	response to external stimulus	1531		94		-1.77	0.000646	1.77
134	regulation of multicellular organismal development	1752		106		-1.74	0.000180	1.74
135	cell surface receptor signaling pathway	1601		96		-1.73	0.001350	1.73
136	homeostatic process	1318		79		-1.73	0.018700	1.73
137	positive regulation of cell communication	1389		82		-1.7	0.021000	1.7
138	positive regulation of signaling	1396		81		-1.67	0.045500	1.67
139	regulation of biological quality	3167		182		-1.66	0.000000	1.66
140	regulation of developmental process	2291		132		-1.66	0.000048	1.66
141	regulation of cell communication	2642		146		-1.59	0.000091	1.59
142	localization	4296		234		-1.57	0.000000	1.57
143	regulation of molecular function	2107		115		-1.57	0.008100	1.57
144	regulation of signaling	2663		145		-1.57	0.000259	1.57
145	establishment of localization	3398		177		-1.5	0.000121	1.5
146	transport	3253		169		-1.5	0.000345	1.5
147	negative regulation of biological process	4288		209		-1.4	0.000732	1.4
148	cell communication	4823		233		-1.39	0.000185	1.39
149	multicellular organismal process	6664		317		-1.37	0.000000	1.37
150	negative regulation of cellular process	3969		189		-1.37	0.018500	1.37
151	signaling	4723		225		-1.37	0.001150	1.37
152	single organism signaling	4719		225		-1.37	0.001080	1.37
153	Unclassified	1892	8	24	0.21	-0.37	0.000000	0.58
154	sensory perception of chemical stimulus	1212	1	10 < 0.2		-0.24	0.000002	0.000013
155	sensory perception of smell	1111	1	5 < 0.2	> -0.2		0.000018	0.000000