

Supplemental Table 1. Raw data of the effects of intracellular mutations on L1-mediated neurite outgrowth

Mutation	N _M /N _W	Total neurite length - microns	Longest neurite length - microns	Branches	Primary neurites	Nodes
L1-1176	50/88	479±25/	288±14/	5±0.67/	3.54±0.41/	1.46±0.32/
		591±19	288±10	6.22±0.35	3.06±0.17	3.1±0.26
	79/98	451±18/	284±12/	5.54±0.45/	2.28±0.11/	3.2±0.39/
		536±16	253±8	8.2±0.4	2.92±0.13	5.07±0.35
79/85	458±20/	261±12/	5.10±0.39/	2.84±0.19/	2.24±0.25/	
	630±21	290±11	8.59±0.54	3.15±0.16	5.18±0.42	
L1-1180	73/88	543±21/	254±11/	6.92±0.44/	4.01±0.34/	2.84±0.24/
		591±19	288±10	6.22±0.35	3.06±0.17	3.1±0.26
	80/98	464±19/	223±11/	8.4±0.57/	3.1±0.21/	5.15±0.44/
		536±16	253±8	8.2±0.4	2.92±0.13	5.07±0.35
92/93	584±22/	239±10/	10.84±0.69	5.11±0.39/	5.54±0.44/	
	698±28	288±9	10.31±0.62	4.06±0.26	6.02±0.50	
L1ΔRSLE	79/98	451±18/	263±11/	5.65±0.35/	2.7±0.14/	2.84±0.29/
		536±16	253±8	8.2±0.4	2.92±0.13	5.07±0.35
	88/88	455±15/	307±12/	4.42±0.35/	2.92±0.22/	1.47±0.19/
		591±19	288±10	6.22±0.35	3.06±0.17	3.1±0.26
36/85	444±35/	244±14/	5.69±0.71/	3.08±0.35/	2.5±0.42/	
	642±22	273±10	8.28±0.54	2.99±0.13	5.13±0.46	
L1-1147	106/104	276±10/	200±8/	3.29±0.23/	2.52±0.18/	0.77±0.12/
		516±14	243±6	5.29±0.25	2.72±0.12	2.58±0.19
	96/79	325±12/	290±10/	2.45±0.19/	1.79±0.14/	0.64±0.11/
		652±20	285±11	6.91±0.44	3.25±0.18	3.54±0.32
76/97	219±11/	177±10/	2.61±0.25/	2.13±0.19/	0.47±0.14/	
	506±18	264±10	4.88±0.29	2.62±0.13	2.21±0.22	
L1-4A	93/67	204±7/	153±5/	2.14±0.09/	1.83±0.05/	0.31±0.08/
		357±15	190±6	4.93±0.30	2.51±0.14	2.39±0.23
	103/103	280±10/	210±8/	2.53±0.15/	1.84±0.06/	0.67±0.11/
		540±20	260±9	6.85±0.40	3.12±0.15	3.64±0.29
87/80	266±10/	195±8/	2.59±0.14/	2±0.08/	0.57±0.1/	
	480±14	251±8	5.10±0.34	2.35±0.1	2.7±0.31	
L1-1151Y>A	97/67	232±9/	174±7/	2.24±0.11/	1.91±0.06/	0.32±0.08/
		357±15	190±6	4.93±0.30	2.51±0.14	2.39±0.23
	95/103	325±14/	233±11/	3.32±0.19/	2.08±0.02/	1.22±0.16/
		540±20	260±9	6.85±0.40	3.12±0.15	3.64±0.29
92/87	318±15/	225±11/	3.45±0.22	2.11±0.08/	1.32±0.18/	
	493±18	247±10	6.99±0.50	2.91±0.15	4±0.4	

In all experiments mutant L1 or WT HL1 was transfected into L1KO neurons and plated on L1 substrates. About 80-100 of the L1KO neurons expressing HL1 were analyzed and used as reference values for determining the degree of neurite growth and branching for the different mutants. For each mutant, values from three independent trials were listed.

The values before the slash were the mean \pm SEM of mutant L1-expression neurons. The values after the slash were the mean \pm SEM of WT HL1-expression neurons in the same set of experiment. N_M is the number of mutant L1-expressing neurons measured and N_W is the number of WT HL1-expressing neurons measured in the same set of experiment. Values for the total neurite length, longest neurite length, branches (primary, secondary and tertiary neurites), primary neurites from the soma, and nodes (secondary and tertiary neurites) were listed.