ADDITIONAL FILE 3

Neurodegeneration and contralateral α-synuclein induction after intracerebral α-synuclein injections in the anterior olfactory nucleus of a Parkinson's disease A53T mouse model

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Brain volume

Table S3 Brain volume. Estimated volume of OB and layers (GL, EPL, MiL, IPL and GrL), AON and Pir (mm^3). Statistical analysis was focused on comparisons: genotype in the right hemisphere, left hemisphere, interhemispheric differences in WT and TG. For statistical data, see tables S4–S7. For abbreviations, see list.

Brain region	Genotype	Post-injection time	Right hemisphere		Left hemisphere	
			Treatment		Treatment	
			Saline-injection	α-synuclein-injection	Saline-injection	α-synuclein-injection
GL	WT	2m	1.266 ± 0.16240	1.429 ± 0.21380	1.079 ± 0.1874	1.707 ± 0.1439
		4m	1.331 ± 0.03881	1.366 ± 0.08751	1.296 ± 0.1084	1.330 ± 0.0528
	TG	2m	1.531 ± 0.101	1.879 ± 1.030	1.677 ± 0.092	1.649 ± 0.275
EPL	WT	2m	2.036 ± 0.47050	1.461 ± 0.42040	1.507 ± 0.204	1.979 ± 0.075
		4m	1.513 ± 0.02033	1.845 ± 0.27060	1.479 ± 0.108	1.821 ± 0.182
	TG	2m	2.212 ± 0.173	1.741 ± 0.517	2.076 ± 0.097	1.886 ± 0.691
MiL	WT	2m	0.6628 ± 0.3200	0.3823 ± 0.0618	0.5561 ± 0.25680	0.4575 ± 0.02483
		4m	0.5617 ± 0.2111	0.6692 ± 0.3375	0.4080 ± 0.09933	0.5087 ± 0.17860
	TG	2m	0.4404 ± 0.0128	1.0520 ± 0.4581	0.4541 ± 0.0263	0.7220 ± 0.1527
IPL	WT	2m	0.5496 ± 0.26080	0.8661 ± 0.58200	0.2748 ± 0.02186	0.3440 ± 0.02245
		4m	0.2705 ± 0.01046	0.5900 ± 0.30690	0.2503 ± 0.01836	0.5450 ± 0.18600
	TG	2m	0.3313 ± 0.0177	0.7728 ± 0.3827	0.4943 ± 0.2031	1.5640 ± 0.6492
GrL	WT	2m	2.480 ± 0.31330	2.081 ± 0.39640	2.315 ± 0.3042	2.713 ± 0.1151
		4m	2.045 ± 0.04228	2.048 ± 0.14200	1.999 ± 0.1459	2.152 ± 0.1120
	TG	2m	2.082 ± 0.164	1.850 ± 0.539	2.034 ± 0.103	2.078 ± 0.338
OB	WT	2m	6.777 ± 0.7947	5.319 ± 0.9610	5.624 ± 0.8263	7.075 ± 0.5384
		4m	5.476 ± 0.1643	5.867 ± 0.2115	5.603 ± 0.1494	5.375 ± 0.6235
	TG	2m	6.664 ± 0.271	7.619 ± 0.465	6.416 ± 0.166	6.906 ± 0.254
AON	WT	2m	1.4140 ± 0.19500	1.9620 ± 0.30250	1.4110 ± 0.24660	1.4240 ± 0.17510
		4m	1.3340 ± 0.10540	1.1830 ± 0.09017	1.2420 ± 0.07154	1.2480 ± 0.06981
	TG	2m	1.4080 ± 0.0741	0.9065 ± 0.3043	1.358 ± 0.239	1.795 ± 0.391
Pir	WT	2m	3.3170 ± 0.1805	2.9090 ± 0.2370	3.5160 ± 0.1474	3.1360 ± 0.2130
		4m	2.6530 ± 0.1506	3.0530 ± 0.1288	2.9120 ± 0.2310	3.3500 ± 0.1018
	TG	2m	3.7330 ± 0.1305	3.0950 ± 0.6904	3.66400 ± 0.1970	3.52700 ± 0.44470

Table S4. Volume statistical data. Comparison of genotype in the right hemisphere.

Area	Source of variation	F (DFn, DFd)	P value
GL	Interaction	F (1, 11) = 0.04726	P = 0.8319
	Treatment	F (1, 11) = 0.3606	P = 0.5604
	Genotype	F (1, 11) = 0.7059	P = 0.4187
EPL	Interaction	F (1, 11) = 0.01629	P = 0.9007
	Treatment	F (1, 11) = 1.648	P = 0.2256
	Genotype	F (1, 11) = 0.3132	P = 0.5869
MiL	Interaction	F (1, 11) = 3.187	P = 0.1018
	Treatment	F (1, 11) = 0.4390	P = 0.5213
	Genotype	F (1, 11) = 0.8012	P = 0.3899
IPL	Interaction	F (1, 11) = 0.02753	P = 0.8712
	Treatment	F (1, 11) = 1.012	P = 0.3360
	Genotype	F (1, 11) = 0.1711	P = 0.6871
GrL	Interaction	F (1, 11) = 0.05523	P = 0.8185
	Treatment	F (1, 11) = 0.7884	P = 0.3936
	Genotype	F (1, 11) = 0.7834	P = 0.3950
OB	Interaction	F (1, 11) = 2.837	P = 0.1202
	Treatment	F (1, 11) = 0.1233	P = 0.7321
	Genotype	F (1, 11) = 2.331	P = 0.1551
AON	Interaction	F (1, 11) = 5.140	P = 0.0445*
	Treatment	F (1, 11) = 0.01009	P = 0.9218
	Genotype	F (1, 11) = 5.258	P = 0.0425*
Pir	Interaction	F (1, 11) = 0.1301	P = 0.7252
	Treatment	F (1, 11) = 2.690	P = 0.1292
	Genotype	F (1, 11) = 0.8912	P = 0.3654

Table S5. Volume statistical data. Comparison of genotype in the left hemisphere.

Area	Source of variation	F (DFn, DFd)	P value
GL	Interaction	F (1, 11) = 3.564	P = 0.0857
	Treatment	F (1, 11) = 2.982	P = 0.1121
	Genotype	F (1, 11) = 2.415	P = 0.1484
EPL	Interaction	F (1, 11) = 1.257	P = 0.2862
	Treatment	F (1, 11) = 0.2280	P = 0.6423
	Genotype	F (1, 11) = 0.6497	P = 0.4373
MiL	Interaction	F (1, 11) = 1.440	P = 0.2553
	Treatment	F (1, 11) = 0.3073	P = 0.5904
	Genotype	F (1, 11) = 0.2831	P = 0.6052
IPL	Interaction	F (1, 11) = 2.797	P = 0.1226
	Treatment	F (1, 11) = 3.624	P = 0.0834
	Genotype	F (1, 11) = 5.789	P = 0.0349*
GrL	Interaction	F (1, 11) = 0.6114	P = 0.4508
	Treatment	F (1, 11) = 0.9532	P = 0.3499
	Genotype	F (1, 11) = 4.094	P = 0.0680
OB	Interaction	F (1, 11) = 0.7569	P = 0.4029
	Treatment	F (1, 11) = 3.088	P = 0.1067
	Genotype	F (1, 11) = 0.3181	P = 0.5841
AON	Interaction	F (1, 11) = 0.6770	P = 0.4281
	Treatment	F (1, 11) = 0.7626	P = 0.4012
	Genotype	F (1, 11) = 0.3808	P = 0.5497
Pir	Interaction	F (1, 11) = 0.2440	P = 0.6311
	Treatment	F (1, 11) = 1.104	P = 0.3158
	Genotype	F (1, 11) = 1.200	P = 0.2966

Table S6. Volume statistical data. Comparison of hemispheres in WT.

Area	Source of variation	F (DFn, DFd)	P value
GL	Interaction	F (3, 26) = 1.100	P = 0.3671
	Treatment	F (3, 26) = 3.082	P = 0.0448*
	Hemisphere	F (1, 26) = 0.002876	P = 0.9576
EPL	Interaction	F (3, 26) = 1.315	P = 0.2909
	Treatment	F (3, 26) = 0.6201	P = 0.6083
	Hemisphere	F (1, 26) = 0.008555	P = 0.9270
MiL	Interaction	F (3, 26) = 0.1182	P = 0.9486
	Treatment	F (3, 26) = 0.3088	P = 0.8188
	Hemisphere	F (1, 26) = 0.2898	P = 0.5949
IPL	Interaction	F (3, 26) = 0.4022	P = 0.7526
	Treatment	F (3, 26) = 0.7296	P = 0.5437
	Hemisphere	F (1, 26) = 1.361	P = 0.2540
GrL	Interaction	F (3, 26) = 1.285	P = 0.3004
	Treatment	F (3, 26) = 1.610	P = 0.2112
	Hemisphere	F (1, 26) = 0.7165	P = 0.4050
OB	Interaction	F (3, 26) = 2.146	P = 0.1187
	Treatment	F (3, 26) = 0.7113	P = 0.5541
	Hemisphere	F (1, 26) = 0.01958	P = 0.8898
AON	Interaction	F (3, 26) = 1.301	P = 0.2953
	Treatment	F (3, 26) = 3.114	P = 0.0434*
	Hemisphere	F (1, 26) = 1.421	P = 0.2440
Pir	Interaction	F (3, 26) = 0.02933	P = 0.9931
	Treatment	F (3, 26) = 4.771	P = 0.0088** (t)
	Hemisphere	F (1, 26) = 3.973	P = 0.0568

(t) WT saline 2 months–WT saline 4 months: t_6= 2.825; P = 0.0302.

Table S7. Volume statistical data. Comparison of hemispheres in TG.

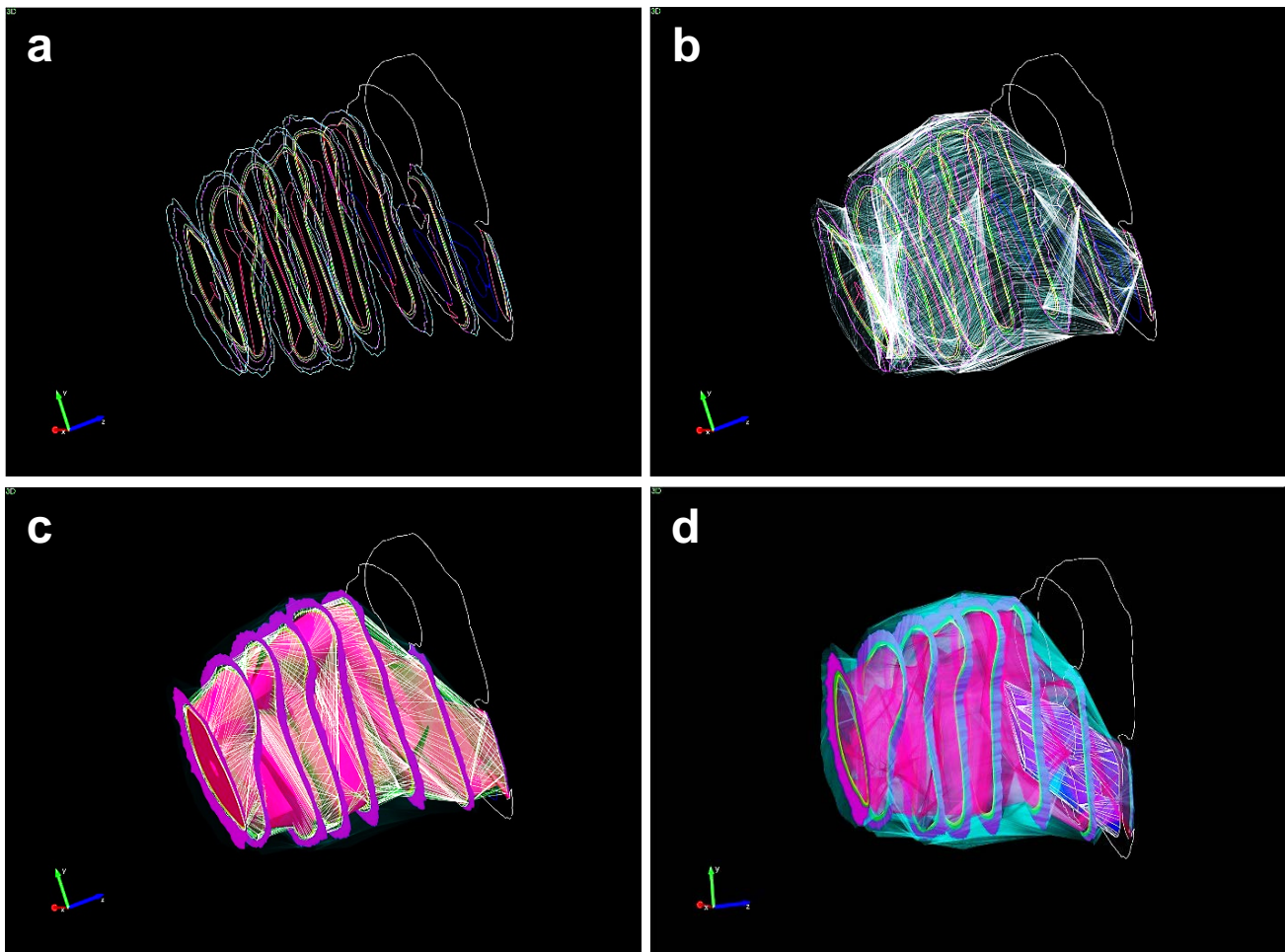| Area	Source of variation	F (DFn, DFd)	P value
GL	Interaction	F (1, 10) = 0.1720	P = 0.6871
	Treatment	F (1, 10) = 0.1246	P = 0.7314
	Hemisphere	F (1, 10) = 0.008586	P = 0.9280
EPL	Interaction	F (1, 10) = 0.1370	P = 0.7190
	Treatment	F (1, 10) = 0.7583	P = 0.4043
	Hemisphere	F (1, 10) = 0.0001406	P = 0.9908
MiL	Interaction	F (1, 10) = 0.7184	P = 0.4165
	Treatment	F (1, 10) = 4.704	P = 0.0553
	Hemisphere	F (1, 10) = 0.6085	P = 0.4534
IPL	Interaction	F (1, 10) = 0.8659	P = 0.3740
	Treatment	F (1, 10) = 5.011	P = 0.0491*
	Hemisphere	F (1, 10) = 1.998	P = 0.1879
GrL	Interaction	F (1, 10) = 0.2270	P = 0.6440
	Treatment	F (1, 10) = 0.1053	P = 0.7522
	Hemisphere	F (1, 10) = 0.09657	P = 0.7624
OB	Interaction	F (1, 10) = 0.6403	P = 0.4422
	Treatment	F (1, 10) = 6.183	P = 0.0322*
	Hemisphere	F (1, 10) = 2.735	P = 0.1292
AON	Interaction	F (1, 10) = 3.401	P = 0.0950
	Treatment	F (1, 10) = 0.01606	P = 0.9017
	Hemisphere	F (1, 10) = 2.715	P = 0.1304
Pir	Interaction	F (1, 10) = 0.4561	P = 0.5147
	Treatment	F (1, 10) = 1.092	P = 0.3207
	Hemisphere	F (1, 10) = 0.2395	P = 0.6351

Fig. S5 OB and AON volume 3D model. OB and AON volume 3D model. OB layers (GL: blue, EPL: violet, MiL: green, IPL: yellow and GrL: rose) and AON (dark blue) boundaries were traced using Stereo Investigator software (**a**). GL was marked by "blue shell surface" (**b**). EPL and IPL were marked by "flat surface" and MiL and GrL showed "shell appearance" (**c**). OB and AON 3D model (**d**). For abbreviations, see list.