PNAS

Supporting Information for
Whole-Brain Mapping of Histaminergic Projections in Mouse Brain

Wenkai Lin[1,2,9], Lingyu Xu[1,9], Yanrong Zheng[2], Sile An[3], Mengting Zhao[3], Weiwei Hu[1], Mengyao Li[5], Hui Dong[5], Anan Li[4], Yulong Li[5], Hui Gong[4], Gang Pan[6], Yi Wang[1,2,7], Qingming Luo[8] and Zhong Chen[1,2,7,*]

[1]Institute of Pharmacology & Toxicology, Key Laboratory of Medical Neurobiology of the Ministry of Health of China, College of Pharmaceutical Sciences, Zhejiang University, Hangzhou, China; 310058

[2]Key Laboratory of Neuropharmacology and Translational Medicine of Zhejiang Province, School of Pharmaceutical Sciences, Zhejiang Chinese Medical University, Hangzhou, China; 310053

[3]Britton Chance Center for Biomedical Photonics, Wuhan National Laboratory for Optoelectronics, MoE Key Laboratory for Biomedical Photonics, Huazhong University of Science and Technology, Wuhan, China; 430074

[4]HUST-Suzhou Institute for Brainsmatics, JITRI Institute for Brainsmatics, Suzhou, China; 215000

[5]State Key Laboratory of Membrane Biology, Peking University School of Life Sciences, Beijing, China; 100871

[6]Department of Computer Science, Zhejiang University, Hangzhou, China; 310058

[7]Epilepsy Center, Department of Neurology, Second Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou, China; 310009

[8]Key Laboratory of Biomedical Engineering of Hainan Province, School of Biomedical Engineering, Hainan University, Haikou, China; 570228

[9]These authors contributed equally to this paper.

* Corresponding author: Prof. Zhong Chen, Ph.D.

Email: chenzhong@zju.edu.cn

This PDF file includes:

Supplementary materials and methods
Figures S1 to S7
Legends for Movies S1 to S2
Table S1 to S4
SI References

Supplementary materials and methods

Viruses

AAV-Ef1α-DIO-GCaMP6s-eYFP (viral titers: 5.0 × 10^{12} particles/mL), AAV-Ef1α-DIO-hChR2(H134R)-eYFP (viral titers: 1.6 × 10^{13} particles/mL), and AAV-CAG-FLEX-ArchT-GFP (viral titers: 1.3 × 10^{12} particles/mL) were purchased from OBio Biotech Co., Ltd (Shanghai, China). AAV-hSyn-DIO-ChrimsonR-mCherry (viral titers: 2.57 × 10^{12} particles/mL), rAAV-EF1α-DIO-jRGECO1α (viral titers: 5.0 × 10^{12} particles/mL), rAAV-EF1α-DIO-flp-WPRE-hGH pA (viral titers: 5.0 × 10^{12} particles/mL) and rAAV-nEF1α-fDIO-eYFP-eYFP-WPRE-hGH pA (viral titers: 5.0 × 10^{12} particles/mL) were purchased from BrainVTA Co., Ltd (Wuhan, China). AAV2/2Retro-hEF1α-DIO-mCherry (viral titers: 5.0 × 10^{12} particles/mL) and AAV2/2Retro-hEF1α-DIO-eYFP (viral titers: 5.0 × 10^{12} particles/mL) were purchased from Taitool Bioscience (Shanghai, China). AAV9-hSyn-GRABHA1m (viral titers: 3.8 × 10^{13} particles/mL) and AAV9-hSyn-GRABHAmutant (viral titers: 9.03 × 10^{13} particles/mL) were produced by Prof. Yulong Li, Peking University (Beijing, China). All viral vectors were aliquoted and stored at −80 °C until use.

Stereotactic injections

Mice were anesthetized with 1% sodium pentobarbital (50 mg/kg, i.p., Sigma-Aldrich) and head-fixed in a stereotaxic apparatus (512600, Stoelting, USA). During the entire operation, the body temperature of the anesthetized mice was kept constant at 37 °C using a heating pad. If the mice had a pain reflex response from a paw pinch, an additional 10% of the initial dose of sodium pentobarbital was given to guarantee a painless state. An incision was made in mice's heads to expose the skull surface. After scraping the pericranium away, burr holes were stereo tactically made onto the skulls. For histaminergic fiber labeling, 300 nL of AAV-CAG-FLEX-ArchT-GFP was injected into each side of the TMN (bregma 2.0 mm, lateral 0.8 mm, depth 5.4 mm from skull surface) of HDC-CreERT2 adult mice. One day after virus injection, mice received tamoxifen injection (100 mg/kg/d, i.p.) for 5 consecutive days. Four weeks later, fMOST experiments were performed.

For functional testing, 300 nL of AAV-hSyn-DIO-ChrimsonR-mCherry or rAAV-EF1α-DIO-jRGECO1α was injected into the right TMN (bregma 2.0 mm, lateral 0.8 mm, depth 5.4 mm from skull surface) of HDC-CreERT2 adult mice, and 200 nL of AAV-hSyn-HA1m was injected into the MS (bregma -1.2 mm, lateral 0.0 mm, depth 4.6 mm from skull surface), right CeA (bregma 0.8 mm, lateral 2.2 mm, depth 4.8 mm from skull surface), and right CA3 (bregma 3.1 mm, lateral 3.3 mm, depth 3.2 mm from skull surface) at the simultaneously. One day after virus injection, mice received tamoxifen injection (100 mg/kg/d, i.p.) for 5 consecutive days. Three weeks later, stereotactic surgery was performed, and the mice received functional tests 1 week after surgery.

For retrograde tracing, 300 nL of AAV2/2Retro-hEF1α-DIO-mCherry was injected into the MS (bregma -1.2 mm, lateral 0.0 mm, depth 4.6 mm from skull surface), and 300 nL of AAV2/2Retro-hEF1α-DIO-eYFP was injected into the SC (bregma 3.5 mm, lateral 0.0 mm, depth 2.0 mm from skull surface) or bilateral AIp (bregma 0.2 mm, lateral 3.5 mm, depth 4.1 mm from skull surface)

For histaminergic neuron sparse labeling, 300 nL of rAAV-EF1α-DIO-flp-WPRE-hGH pA (final dilution ratio: 1:40000) and rAAV-nEF1α-fDIO-eYFP-eYFP-WPRE-hGH pA mixed virus was injected into the bilateral TMN (bregma 2.0 mm, lateral ± 0.8 mm, depth 5.4 mm from skull surface) of HDC-CreERT2 adult mice. One day after virus injection, mice received tamoxifen injection (100 mg/kg/d, i.p.) for 5 consecutive days. Four weeks later, fMOST experiments were performed.

Stereotactic surgery

For functional testing, stereotactic surgery was performed 3 weeks after virus injection and tamoxifen administration. The procedure up through boring the burr holes was the same as the stereotactic injections; at which point optic fibers were concurrently and separately implanted into different brain regions of the same mouse: right TMN (bregma 2.0 mm, lateral 0.8 mm, depth 5.0 mm from skull surface), MS (bregma -1.2 mm, lateral 0.0 mm, depth 4.0 mm from skull surface), right CeA (bregma 0.8 mm, lateral 3.2 mm from skull surface, depth 4.6 mm tilt 10° from skull surface at position of burr hole), and right CA3 (bregma 3.1 mm, lateral 3.3 mm, depth 2.9 mm from skull surface). Functional test experiments started 1 week after implantation surgery.

fMOST tissue preparation
All histological procedures were performed as has been described in a previous study(1). Mice were anesthetized and perfused with 0.01 M PBS and PBS containing 4% paraformaldehyde (PFA), respectively. Brains were post-fixed in 4% PFA for 24 hrs. Fixed brains were transferred into 0.01 M PBS and incubated at 4 ℃ overnight, then dehydrated in graded ethanol solutions. Individual brains were then impregnated with Glycol Methacrylate (GMA, Ted Pella Inc.) and embedded in a vacuum oven.

Whole-brain imaging
The whole-brain imaging procedure is based on a Brain-wide Position System (BPS)(1), with simultaneous propidium iodide (PI) staining to label the cytoarchitectonic landmarks and a brain-wide fluorescence micro-optical sectioning tomography (fMOST) via structured illumination. For whole-brain imaging, each sample was immobilized in a water bath on a 3D nano-precision translation stage. The brain samples were then sectioned coronally at an interval of 2 mm in an antero-posterior (AP) direction to achieve the axial scan, counterstained in PI, and then underwent fluorescence image acquisition via mosaic scan. The combination of mosaic x-y-scan and axial z-scan produced a continuous dataset at a voxel resolution of 0.32×0.32×2 μm^3, enabling 3D reconstruction (Movie S2). For individual mouse brains, ~5000 coronal slices were sectioned with an original data size of 1 TB.

Image pre-processing
The raw data acquired by the BPS necessitated mosaic stitching and illumination correction image pre-processing. Briefly, the mosaics of each coronal section were stitched to obtain an entire section based on accurate spatial orientation and adjacent overlaps. Lateral illumination correction was performed section by section. Image pre-processing results were implemented in C++ and optimized in parallel using the Intel MPI Library (v.3.2.2.006, Intel). The whole data sets were executed on a computing server (72 cores, 2 GHz per core) within 6 hrs.

Visualization and reconstruction
We visualized the data set using Amira software (v.5.2.2, FEI) to generate figures and videos. The data set acquired by the dual-color precise imaging system was separated into the GFP channel and PI channel. For whole-brain projection reconstruction, the GFP-labeled data set was sampled at 3.2 × 3.2 × 50 μm^3 and imported into Amira to generate the 3D image of the histaminergic nerve fibers in the whole-brain. For GFP-labeled neuron reconstruction, the GFP-labeled data set of the posterior hypothalamus was sampled at 1 × 1 × 2 μm^3 and imported into Amira to generate the 3D image of the local histaminergic neurons.

Immunohistochemistry
Mice were anesthetized with 1% sodium pentobarbital (50 mg/kg, i.p., Sigma-Aldrich) and intracardially perfused with saline, followed by cold 4% paraformaldehyde in 0.01 M phosphate buffer (PBS). The brain was then removed, postfixed in 4% paraformaldehyde at 4 ℃ for 4 hrs, and then equilibrated in 30% sucrose in 0.01 M PBS at 4 °C for at least 36 hrs. Coronal sections (50 μm) were cut on a freezing microtome (Thermo NX50). After three rinses with 0.1 M PBS for 10 min, permeabilization with 300 μL of 1 % Triton X-100 (vol/vol) in 0.1 M PBS for 15 min, and blocking with 300 μL of 5% (wt/vol) normal bovine serum for 2 hrs at room temperature, the sections were incubated with the primary antibodies diluted in 300 μL of PBS with 5% normal bovine serum overnight at 4 °C: Rabbit Polyclonal HDC (America Research Products, 03-16045, 1:300). After three rinses with 0.1 M PBS for 10 min, the sections were incubated with Alexa-594-conjugated donkey anti-rabbit secondary fluorescent antibodies (Jackson ImmunoResearch, 711-585-152) for 2 hrs at room temperature. After rinsing, the sections were mounted on slides using Vectashield Mounting Media (Vector Labs) and confocal images were taken (Olympus FV-1000).

Statistics
All statistical graphs were generated using Graphpad Prism v.6.01. All data are presented as means ± s.e.m. Number of experimental replicates (n) is indicated in the figure legends and refers

to the number of experimental subjects independently treated in each experimental condition. P values < 0.05 were considered to be statistically significant.

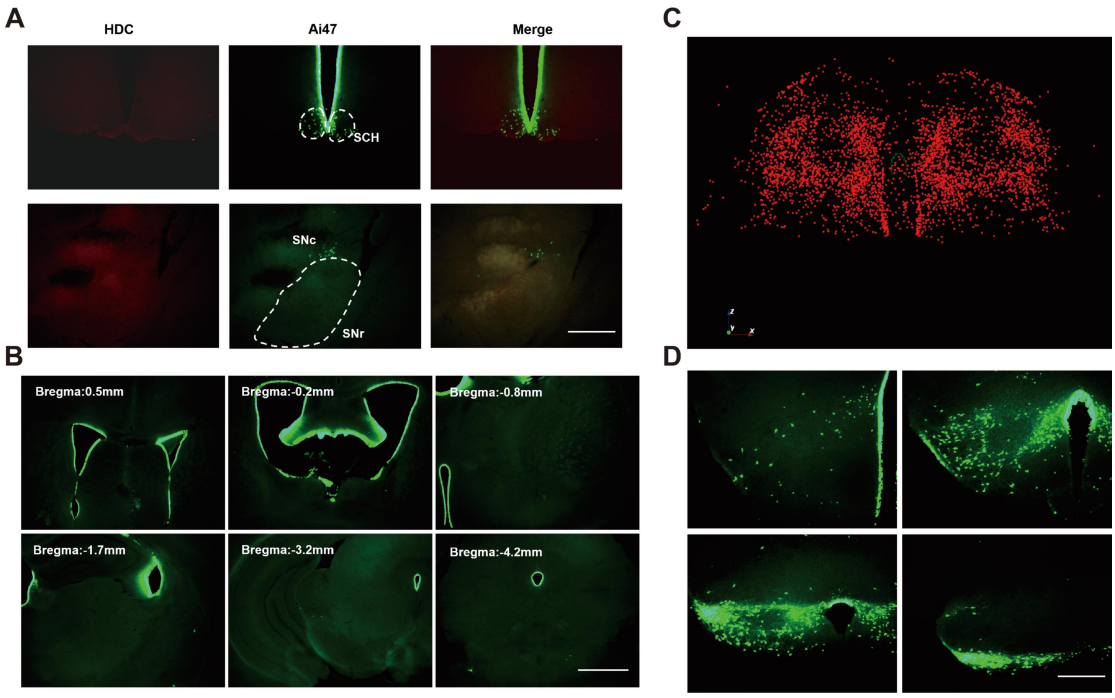

Fig. S1. Characteristics of the HDC-CreERT2:Ai47 mice. (A) Immunohistochemical analysis of GFP expression outside the posterior hypothalamus in the HDC-CreERT2:Ai47 mouse brain. Scale bars, 400μm. (B) Several coronal sections showing extremely bright fluorescent signal at the edge of the ventricles in the HDC-CreERT2:Ai47 mouse brain. Scale bars, 1mm. (C) The somata of GFP-labeled neurons were extracted by NeuroGPS software. (D) GFP labeled somata and fibers of histaminergic neurons in the posterior hypothalamus of the HDC-CreERT2:Ai47 mouse killed 6 months after tamoxifen administration. Scale bars, 400 μm. SCH, Suprachiasmatic nucleus; SNc, Substantia nigra, compact part; SNr, Substantia nigra, reticular part.

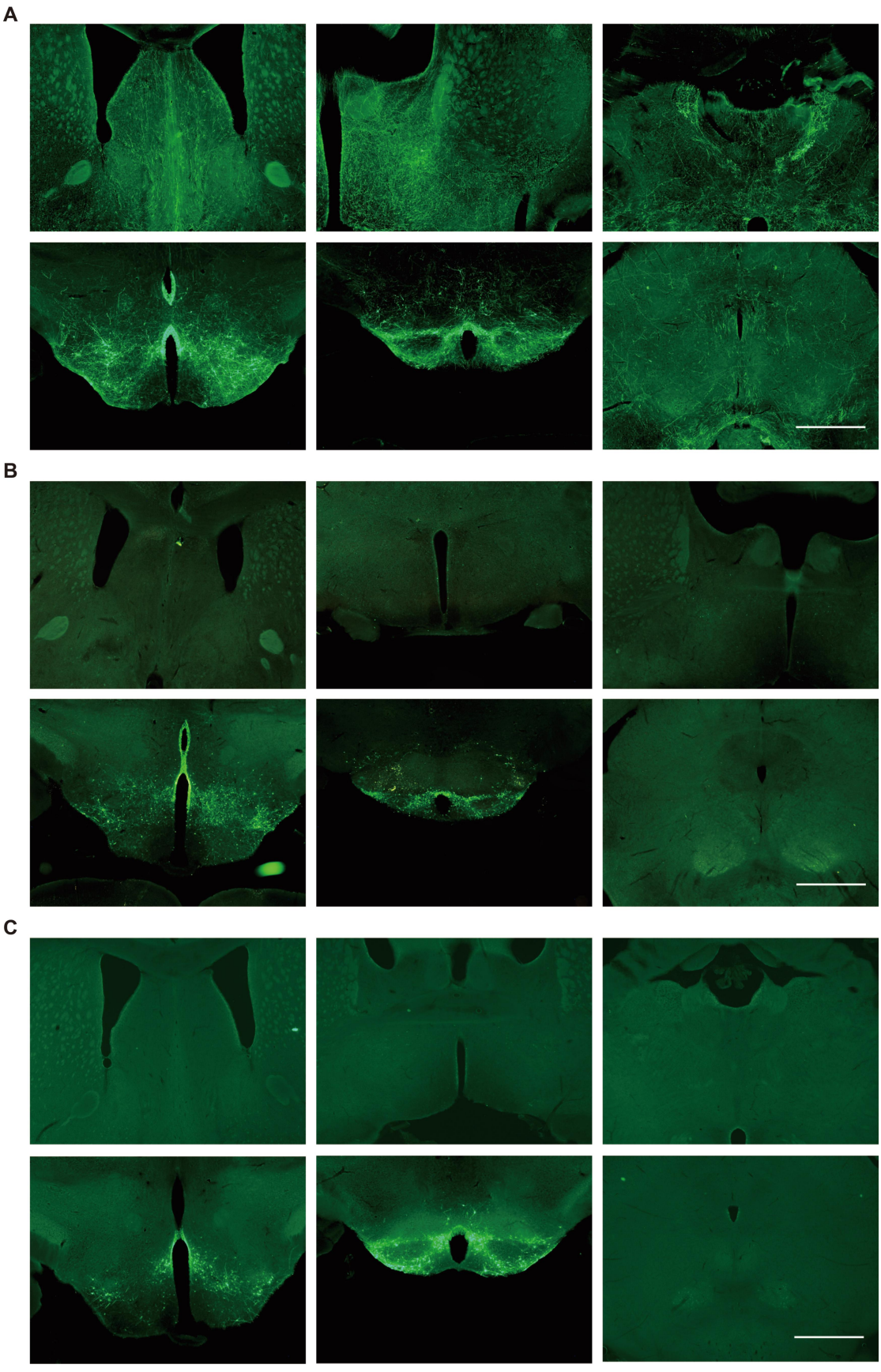
A
B
C

Fig. S2. Characteristics of the virus labeled mice. (A-C) Representative coronal sections showing virus labeled histaminergic somata or fibers in different brain regions of HDC-Arch-GFP^{TMN} (A), HDC-ChR2-eYFP^{TMN} (B), and HDC-GCaMP6s^{TMN} (C) mice. Scale bars are 1mm in a, b and c.

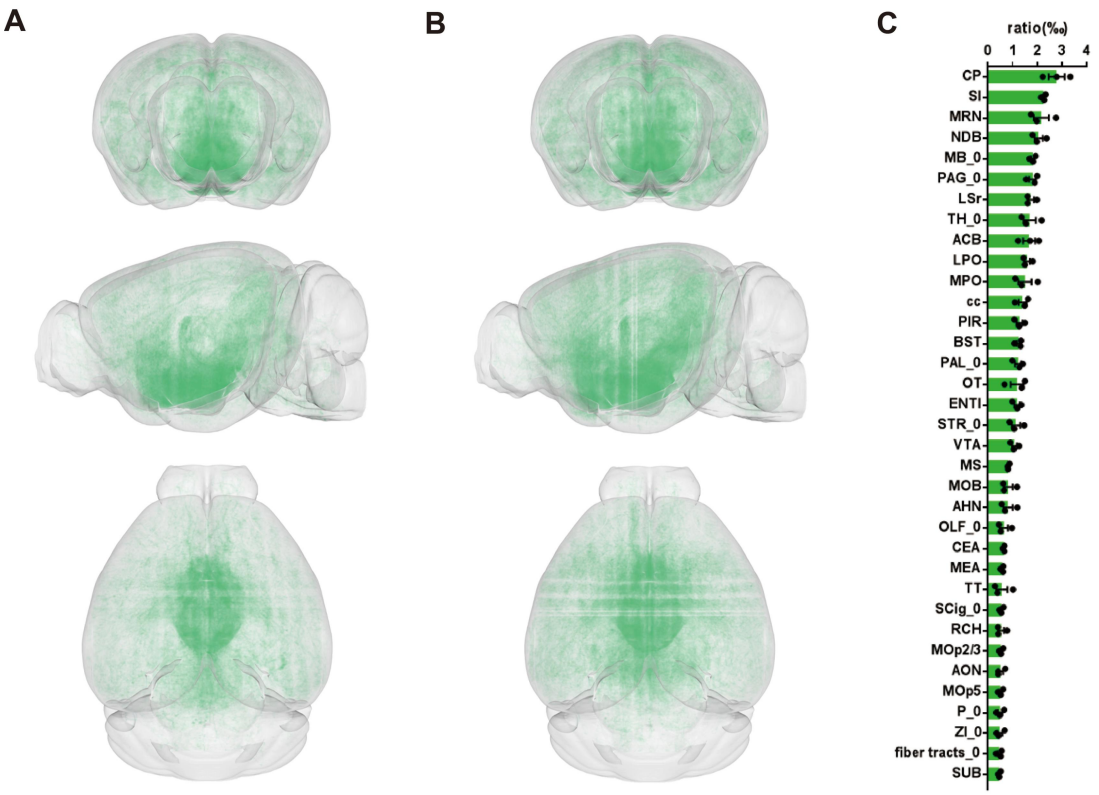

Fig S3. Whole brain standard visualization of HDC-Arch-GFP^{TMN} mice. (A, B) Visualization of fluorescent labeled information of registered HDC-Arch-GFP^{TMN} mouse brains, sample 193973 (A) and 193974 (B). (C) Proportion of fluorescent pixels of 35 brain regions with the most total fluorescent pixels in the whole mouse brain of three samples. See the abbreviations of in Table S1. All data are presented as mean ± s.e.m..

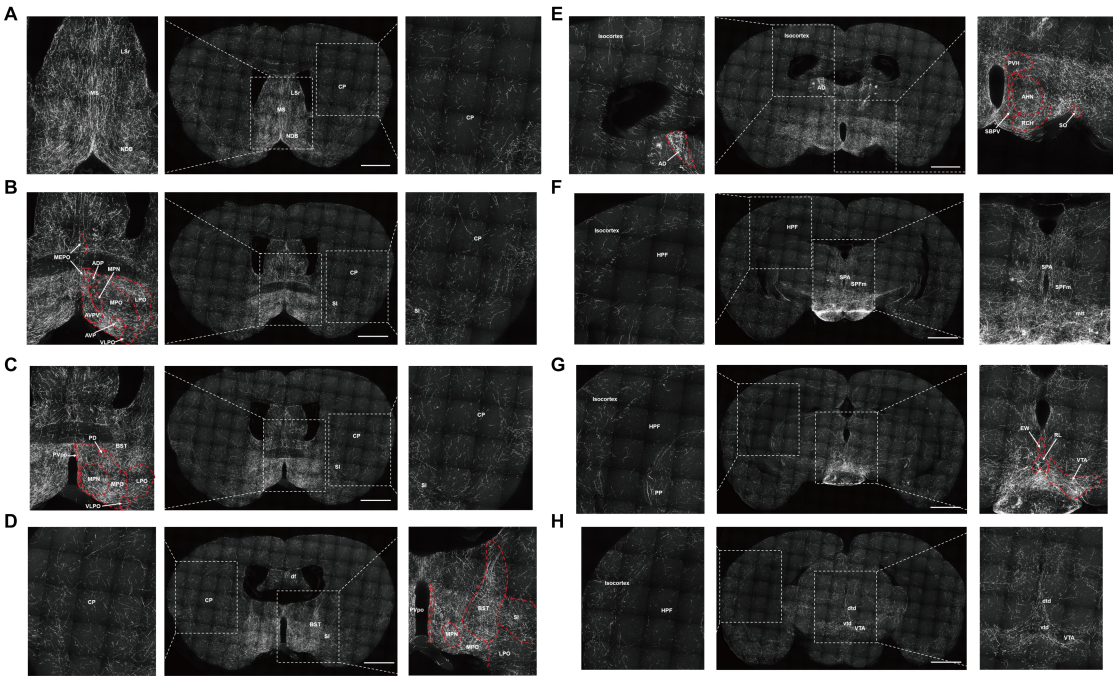

Fig S4. Raw data of histaminergic fiber distribution. (A-H) Several coronal brain slices show the histaminergic fiber distribution 1.0mm (A) 0.2mm (B) 0.0mm (C) -0.2mm (D) -0.7mm (E) -2.3mm (F) -3.2mm (G) -3.8mm (H) from bregma. Scale bar: 1mm. See the abbreviations in Table S1.

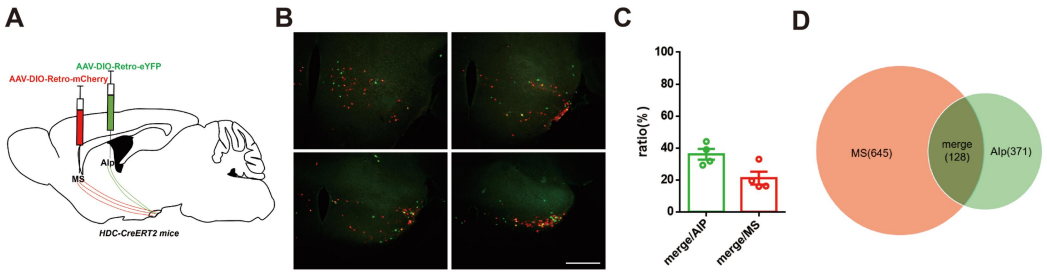

Fig S5. Retrograde tracing of MS- and AIp-projecting histaminergic neurons in HDC-CreERT2 mice. (A) Experimental scheme for generating HDC-Retro-mCherry^{MS}-Retro-GFP^{AIp} mice. AAV-DIO-Retro-mCherry was injected into the MS of HDC-CreERT2 mice, and AAV-DIO-Retro-GFP was injected into the bilateral AIp simultaneously. (B) Representative coronal sections showing Retro virus labeled histaminergic somata in an HDC-Retro-mCherry^{MS}-Retro-GFP^{AIp} mouse with several distance from bregma. scale bar: 400μm. (C) Co-label ratio of GFP and mCherry labeled somata of 4 HDC-Retro-mCherry^{MS}-Retro-GFP^{AIp} mice. (D) Venn diagram shows the number of all GFP and mCherry labeled somata of 4 HDC-Retro-mCherry^{MS}-Retro-GFP^{AIp} mice.

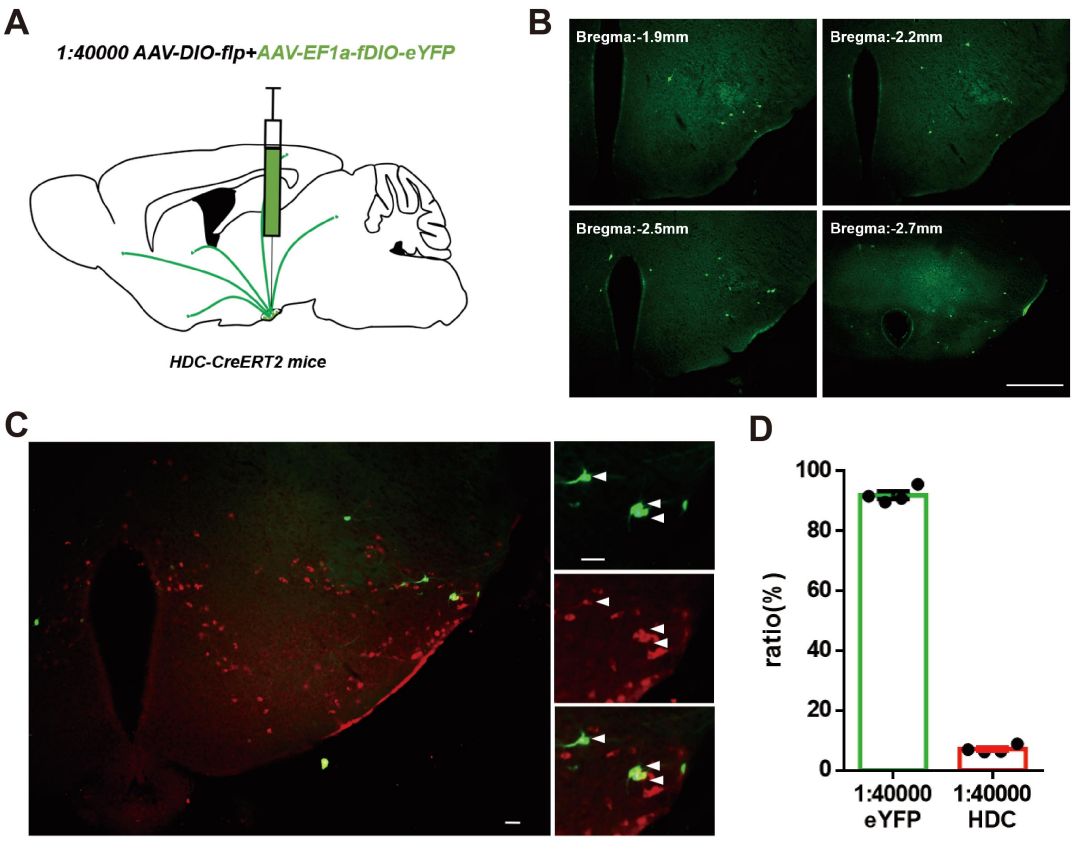

Fig S6. Sparse labeling of histaminergic neurons in HDC-CreERT2 mice. (A) Experimental scheme for generation of HDC-DIO-flp+fDIO-eYFP^{TMN} mice. rAAV-EF1α-DIO-flp-WPRE-hGH was diluted by PBS and mixed with rAAV-EF1α-DIO-flp-WPRE-hGH before injected into the right TMN of HDC-CreERT2 mice. (B) Representative images of the TMN followed by 1:40000 diluted virus injection. (C) Representative immunohistochemical pictures of expression specificity in HDC-DIO-flp+fDIO-eYFP^{TMN} mice, 1:40000 diluted; eYFP, and HDC double-positive neurons are indicated by arrowheads. scale bar: 50μm. (D) Expression specificity analysis of eYFP in HDC-DIO-flp+fDIO-eYFP^{TMN} mice.

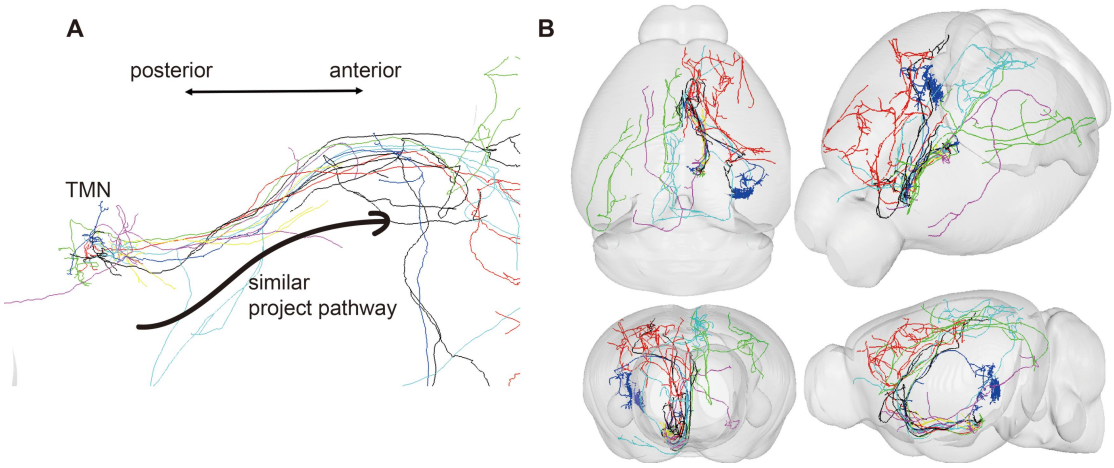

Fig S7. Whole brain fiber distribution of 7 neurons who have similar project pathway when depart from TMN. (A) Horizontal view of 7 histaminergic neuron fiber project pathway launching from TMN. Every single color indicates a sole histaminergic neuron. (B) 3D views of 7 fully reconstructed histaminergic neurons who have similar project pathway near their original location.

Movie S1. The location of histaminergic neuron somata from anterior to posterior TMN in one of the tested mice.

Movie S2. The 3D fluorescent raw data of whole-brain histaminergic neural circuits from one of the tested mice.

Table S1. Fluorescence density raw data of HDC-Arch-GFP^{TMN} mice.

Region	Abbreviation	Fluorescent labeled pixels			Brain region pixels	Fluorescence density value			
		192979	193973	193974		192979	193973	193974	average
Lateral mammillary nucleus	LM	114595	172722	149756	4097500	2.80%	4.22%	3.65%	3.56%
Tuberomammillary nucleus, dorsal part	TMd	72803	9130	80128	1866250	3.90%	0.49%	4.29%	2.89%
Dorsal premammillary nucleus	PMd	469539	219614	161965	10592250	4.43%	2.07%	1.53%	2.68%
Ventral premammillary nucleus	PMv	529557	180497	168055	10957250	4.83%	1.65%	1.53%	2.67%
Tuberal nucleus	TU	1899513	1229619	1346597	58963250	3.22%	2.09%	2.28%	2.53%
Tuberomammillary nucleus, ventral part	TMv	89249	54095	77600	3688000	2.42%	1.47%	2.10%	2.00%
principal mammillary tract	pm	3115	2243	1490	117750	2.65%	1.90%	1.27%	1.94%
Supramammillary nucleus	SUM	580769	436926	409892	25251750	2.30%	1.73%	1.62%	1.88%
supramammillary decussation	smd	45539	34744	27981	1958500	2.33%	1.77%	1.43%	1.84%
Parasubthalamic nucleus	PSTN	139134	145974	123344	7747750	1.80%	1.88%	1.59%	1.76%
Medial mammillary nucleus	MM	1714974	1021572	745646	69972500	2.45%	1.46%	1.07%	1.66%
Anteroventral preoptic nucleus	AVP	182298	135992	74663	8281250	2.20%	1.64%	0.90%	1.58%
mammillothalamic tract	mtt	286790	289305	278954	20516250	1.40%	1.41%	1.36%	1.39%
Lateral hypothalamic area	LHA	7342854	4832842	4748506	425986000	1.72%	1.13%	1.11%	1.32%
Parastrial nucleus	PS	51620	47664	29579	3368750	1.53%	1.41%	0.88%	1.28%
Retrochiasmatic area	RCH	470244	424995	276763	32213000	1.46%	1.32%	0.86%	1.21%
Anterodorsal nucleus	AD	171158	283575	260377	19736500	0.87%	1.44%	1.32%	1.21%
Posterior hypothalamic nucleus	PH	1557202	853653	917247	92188250	1.69%	0.93%	0.99%	1.20%
Ventrolateral preoptic nucleus	VLPO	69148	27315	40442	3823000	1.81%	0.71%	1.06%	1.19%
Diagonal band nucleus	NDB	2170035	976759	1584604	132305750	1.64%	0.74%	1.20%	1.19%
Preparasubthalamic nucleus	PST	28112	16389	17989	1791000	1.57%	0.92%	1.00%	1.16%
Rostral linear nucleus raphe	RL	25029	9649	10233	1354750	1.85%	0.71%	0.76%	1.11%
Medial preoptic area	MPO	1504281	1089819	742679	103995500	1.45%	1.05%	0.71%	1.07%
Median preoptic nucleus	MEPO	301201	185705	145275	20360000	1.48%	0.91%	0.71%	1.04%
undefined part of the Hypothalamus	HY_0	6541959	3375949	3941859	454192500	1.44%	0.74%	0.87%	1.02%
mammillotegmental tract	mtg	127238	95557	80697	10544750	1.21%	0.91%	0.77%	0.96%
Lateral preoptic area	LPO	1643211	979567	966174	128298750	1.28%	0.76%	0.75%	0.93%
Periventricular hypothalamic nucleus, posterior part	PVp	202820	84615	182659	17140500	1.18%	0.49%	1.07%	0.91%
mammillary peduncle	mp	39061	15317	17122	2693250	1.45%	0.57%	0.64%	0.88%
Supraoptic nucleus	SO	107882	32421	49460	7235750	1.49%	0.45%	0.68%	0.87%
Medial septal nucleus	MS	885913	476234	547125	77011000	1.15%	0.62%	0.71%	0.83%
Ventral tegmental area	VTA	1150089	685963	609514	100225500	1.15%	0.68%	0.61%	0.81%
Interfascicular nucleus raphe	IF	57285	31281	15718	4284500	1.34%	0.73%	0.37%	0.81%
Dorsomedial nucleus of the hypothalamus	DMH	695486	275038	501993	60594250	1.15%	0.45%	0.83%	0.81%
Suprachiasmatic nucleus	SCH	123117	65252	103795	12230750	1.01%	0.53%	0.85%	0.80%
Anteroventral periventricular nucleus	AVPV	86327	80911	27082	8487000	1.02%	0.95%	0.32%	0.76%
Medial preoptic nucleus	MPN	283708	147680	109499	25822250	1.10%	0.57%	0.42%	0.70%
Anterodorsal preoptic nucleus	ADP	46942	24466	15514	4236750	1.11%	0.58%	0.37%	0.68%
Posterodorsal preoptic nucleus	PD	2826	3243	1567	378750	0.75%	0.86%	0.41%	0.67%
Subparaventricular zone	SBPV	192533	96488	81848	18552250	1.04%	0.52%	0.44%	0.67%
Ventromedial hypothalamic nucleus	VMH	606618	269732	283956	58347000	1.04%	0.46%	0.49%	0.66%
ventral tegmental decussation	vtd	72909	40526	43563	8175250	0.89%	0.50%	0.53%	0.64%
Periventricular hypothalamic nucleus, preoptic part	PVpo	96708	59580	49038	10729500	0.90%	0.56%	0.46%	0.64%

columns of the fornix	fx	343901	157088	144146	33841000	1.02%	0.46%	0.43%	0.64%
Edinger-Westphal nucleus	EW	26814	19268	30802	4167250	0.64%	0.46%	0.74%	0.61%
Anterior hypothalamic nucleus	AHN	765759	648161	381197	97836000	0.78%	0.66%	0.39%	0.61%
doral tegmental decussation	dtd	41503	17693	35247	5255500	0.79%	0.34%	0.67%	0.60%
dorsal fornix	df	65677	31202	66171	9178750	0.72%	0.34%	0.72%	0.59%
Interpeduncular nucleus	IPN	356403	323484	78775	44128000	0.81%	0.73%	0.18%	0.57%
Periventricular hypothalamic nucleus, intermediate part	PVi	122039	54247	45750	12939750	0.94%	0.42%	0.35%	0.57%
Paraventricular hypothalamic nucleus	PVH	303122	102899	98940	31320750	0.97%	0.33%	0.32%	0.54%
Septohippocampal nucleus	SH	49390	7559	17485	4641750	1.06%	0.16%	0.38%	0.53%
Bed nuclei of the stria terminalis	BST	1477061	718931	716116	186378250	0.79%	0.39%	0.38%	0.52%
Lateral septal nucleus, rostral (rostroventral) part	LSr	2181898	870878	1073297	270677000	0.81%	0.32%	0.40%	0.51%
Subparafascicular area	SPA	39272	20633	40734	6615750	0.59%	0.31%	0.62%	0.51%
Subparafascicular nucleus, magnocellular part	SPFm	68086	33795	44025	9662000	0.70%	0.35%	0.46%	0.50%
Substantia innominata	SI	2558367	1228811	1438652	347916500	0.74%	0.35%	0.41%	0.50%
Peripeduncular nucleus	PP	34303	12772	33074	5386250	0.64%	0.24%	0.61%	0.50%
Central linear nucleus raphe	CLI	78295	38469	37507	10554250	0.74%	0.36%	0.36%	0.49%
Nucleus of reuniens	RE	235918	194305	269792	48017750	0.49%	0.40%	0.56%	0.49%
Arcuate hypothalamic nucleus	ARH	164307	165106	106824	30670250	0.54%	0.54%	0.35%	0.47%
Accessory supraoptic group	ASO	1115	1123	341	186250	0.60%	0.60%	0.18%	0.46%
undefined part of the Pallidum	PAL_05	1550735	538498	850890	216882000	0.72%	0.25%	0.39%	0.45%
Magnocellular nucleus	MA	307928	117261	137383	41941750	0.73%	0.28%	0.33%	0.45%
Anteromedial nucleus	AM	250254	161713	134092	41803500	0.60%	0.39%	0.32%	0.44%
Vascular organ of the lamina terminalis	OV	9177	6882	3363	1488000	0.62%	0.46%	0.23%	0.44%
Anteroventral nucleus of thalamus	AV	233437	157870	269482	50984750	0.46%	0.31%	0.53%	0.43%
Lateral septal nucleus, ventral part	LSv	107531	42146	32799	14327750	0.75%	0.29%	0.23%	0.42%
Perireunensis nucleus	PR	12889	7482	7691	2246000	0.57%	0.33%	0.34%	0.42%
Interanterodorsal nucleus of the thalamus	IAD	31581	46601	47821	10810750	0.29%	0.43%	0.44%	0.39%
Paraventricular hypothalamic nucleus, descending division	PVHd	37317	18642	11073	5841000	0.64%	0.32%	0.19%	0.38%
Dorsal nucleus raphe	DR	84585	43786	54007	16197500	0.52%	0.27%	0.33%	0.38%
Rhomboid nucleus	RH	27961	32201	29483	7983500	0.35%	0.40%	0.37%	0.37%
Substantia nigra, compact part	SNc	150692	60292	75073	26561500	0.57%	0.23%	0.28%	0.36%
Septofimbrial nucleus	SF	165066	90035	93323	32757500	0.50%	0.27%	0.28%	0.35%
Intermediodorsal nucleus of the thalamus	IMD	54416	61068	76646	18208250	0.30%	0.34%	0.42%	0.35%
optic tract	opt	482181	139357	264460	84631750	0.57%	0.16%	0.31%	0.35%
Interstitial nucleus of Cajal	INC	17336	17735	34025	6848000	0.25%	0.26%	0.50%	0.34%
Central amygdalar nucleus	CEA	737734	330560	451485	153246000	0.48%	0.22%	0.29%	0.33%
fasciculus retroflexus	fr	99911	49760	60328	21508000	0.46%	0.23%	0.28%	0.33%
Dorsal tegmental nucleus	DTN	23704	73236	9407	10897500	0.22%	0.67%	0.09%	0.33%
Lateral terminal nucleus of the accessory optic tract	LT	2547	1138	3463	732500	0.35%	0.16%	0.47%	0.33%
Interanteromedial nucleus of the thalamus	IAM	24295	17684	15532	5997250	0.41%	0.29%	0.26%	0.32%
Ventral tegmental nucleus	VTN	17321	23605	3939	4691250	0.37%	0.50%	0.08%	0.32%
Paraventricular nucleus of the thalamus	PVT	265808	84191	130396	50309500	0.53%	0.17%	0.26%	0.32%
anterior commissure, temporal limb	act	159359	30869	53576	25610000	0.62%	0.12%	0.21%	0.32%
Bed nucleus of the anterior commissure	BAC	3500	2796	2858	983000	0.36%	0.28%	0.29%	0.31%
Dorsal peduncular area	DP	212154	21512	33614	28730750	0.74%	0.07%	0.12%	0.31%
Subparafascicular nucleus, parvicellular part	SPFp	126286	51589	120690	32814750	0.38%	0.16%	0.37%	0.30%
Periventricular hypothalamic nucleus, anterior part	PVa	3345	5766	4381	1528500	0.22%	0.38%	0.29%	0.29%

Ventral posteromedial nucleus of the thalamus, parvicellular part	VPMpc	36188	32375	79068	16882000	0.21%	0.19%	0.47%	0.29%
Induseum griseum	IG	13197	2711	11704	3217750	0.41%	0.08%	0.36%	0.29%
Midbrain reticular nucleus, retrorubral area	RR	202990	88971	165356	53368000	0.38%	0.17%	0.31%	0.29%
undefined part of the Striatum	STR_0	1616095	478079	712395	340750250	0.47%	0.14%	0.21%	0.27%
Bed nucleus of the accessory olfactory tract	BA	45701	16621	12627	9183250	0.50%	0.18%	0.14%	0.27%
Central medial nucleus of the thalamus	CM	62959	38973	66935	20887500	0.30%	0.19%	0.32%	0.27%
Fields of Forel	FF	12066	14378	30300	7050750	0.17%	0.20%	0.43%	0.27%
Taenia tecta	TT	1121878	162712	266776	192874750	0.58%	0.08%	0.14%	0.27%
Nucleus accumbens	ACB	2266832	665068	1140178	514420750	0.44%	0.13%	0.22%	0.26%
Midbrain reticular nucleus	MRN	1913750	1071464	1837728	609975750	0.31%	0.18%	0.30%	0.26%
Anterior amygdalar area	AAA	286940	127116	157634	72571000	0.40%	0.18%	0.22%	0.26%
Anterior tegmental nucleus	AT	7104	3472	4785	1998750	0.36%	0.17%	0.24%	0.26%
Subthalamic nucleus	STN	86436	44521	47919	23410500	0.37%	0.19%	0.20%	0.25%
Precommissural nucleus	PRC	31872	17973	28518	10279250	0.31%	0.17%	0.28%	0.25%
optic chiasm	och	126713	70752	68678	35597750	0.36%	0.20%	0.19%	0.25%
Submedial nucleus of the thalamus	SMT	41222	59473	61842	21895250	0.19%	0.27%	0.28%	0.25%
undefined part of the Periaqueductal gray	PAG_0	1696491	1076517	1264609	553365750	0.31%	0.19%	0.23%	0.24%
internal medullary lamina of the thalamus	im	243	61	1255	215000	0.11%	0.03%	0.58%	0.24%
Posterior amygdalar nucleus	PA	153572	56442	71179	39245750	0.39%	0.14%	0.18%	0.24%
Nucleus of Darkschewitsch	ND	7222	8992	10360	3791000	0.19%	0.24%	0.27%	0.23%
Medial amygdalar nucleus	MEA	690835	338898	341366	196364000	0.35%	0.17%	0.17%	0.23%
Parataenial nucleus	PT	131782	49884	52857	33606750	0.39%	0.15%	0.16%	0.23%
Superior colliculus, motor related, intermediate gray layer, sublayer a	SCig-a	44515	26717	44295	16629750	0.27%	0.16%	0.27%	0.23%
Nucleus of the brachium of the inferior colliculus	NB	48874	18714	52351	17376000	0.28%	0.11%	0.30%	0.23%
Fundus of striatum	FS	171882	62202	76134	45124000	0.38%	0.14%	0.17%	0.23%
trochlear nerve	IVn	2305	2315	1218	860250	0.27%	0.27%	0.14%	0.23%
Medial pretectal area	MPT	50010	11117	32822	14181750	0.35%	0.08%	0.23%	0.22%
Triangular nucleus of septum	TRS	74715	42929	61986	27131000	0.28%	0.16%	0.23%	0.22%
undefined part of the Thalamus	TH_0	1493351	837769	1452167	577812250	0.26%	0.14%	0.25%	0.22%
Infralimbic area, layer 1	ILA1	132441	27108	57207	34303500	0.39%	0.08%	0.17%	0.21%
undefined part of the Zona incerta	ZI_0	391244	239491	457324	172333500	0.23%	0.14%	0.27%	0.21%
Parafascicular nucleus	PF	98667	46322	176120	51191250	0.19%	0.09%	0.34%	0.21%
Olfactory tubercle	OT	1651852	366391	915018	474655250	0.35%	0.08%	0.19%	0.21%
Superior colliculus, motor related, intermediate gray layer, sublayer c	SCig-c	24798	11945	23095	9793750	0.25%	0.12%	0.24%	0.20%
Olivary pretectal nucleus	OP	25309	10232	24695	9993500	0.25%	0.10%	0.25%	0.20%
undefined part of the Midbrain	MB_0	1839037	991375	1289994	690054750	0.27%	0.14%	0.19%	0.20%
Ventral medial nucleus of the thalamus	VM	115669	105241	321634	92251750	0.13%	0.11%	0.35%	0.20%
undefined part of the Striatum-like amygdalar nuclei	sAMY_0	85771	42031	47360	30004250	0.29%	0.14%	0.16%	0.19%
Nucleus of the posterior commissure	NPC	60501	49207	67123	30347750	0.20%	0.16%	0.22%	0.19%
stria medullaris	sm	124483	34626	37501	33936250	0.37%	0.10%	0.11%	0.19%
Superior colliculus, optic layer	SCop	215300	117790	131560	80516000	0.27%	0.15%	0.16%	0.19%
Lateral habenula	LH	102727	51865	75286	40144000	0.26%	0.13%	0.19%	0.19%
Superior colliculus, motor related, intermediate gray layer, sublayer b	SCig-b	105474	63481	121495	50921500	0.21%	0.12%	0.24%	0.19%
Posterolateral visual area, layer 6b	VISpl6b	211	522	679	251750	0.08%	0.21%	0.27%	0.19%
Ventral posterolateral nucleus of the thalamus, parvicellular part	VPLpc	6665	3514	13639	4288750	0.16%	0.08%	0.32%	0.19%
Entorhinal area, medial part, ventral zone	ENTmv	83301	35998	53106	32317500	0.26%	0.11%	0.16%	0.18%

medial lemniscus	ml	150638	90699	120684	68025750	0.22%	0.13%	0.18%	0.18%
Intercalated amygdalar nucleus	IA	59059	36931	32900	24312000	0.24%	0.15%	0.14%	0.18%
Posterior limiting nucleus of the thalamus	POL	28837	14214	26893	13361500	0.22%	0.11%	0.20%	0.17%
posterior commissure	pc	14601	7514	11410	6565000	0.22%	0.11%	0.17%	0.17%
Visceral area, layer 1	VISC1	74947	32359	70005	34806500	0.22%	0.09%	0.20%	0.17%
Superior colliculus, superficial gray layer	SCsg	448209	235244	269611	189715250	0.24%	0.12%	0.14%	0.17%
Posterior pretectal nucleus	PPT	19207	9991	12471	8403750	0.23%	0.12%	0.15%	0.17%
undefined part of the Agranular insular area, dorsal part	AId_0	149	0	20	35000	0.43%	0.00%	0.06%	0.16%
Infralimbic area, layer 2/3	ILA2/3	237337	35638	37584	64584250	0.37%	0.06%	0.06%	0.16%
undefined part of the Superior colliculus, motor related, intermediate gray layer	SCig_0	513755	298436	428831	260707500	0.20%	0.11%	0.16%	0.16%
Substantia nigra, reticular part	SNr	512548	185699	293392	209310250	0.24%	0.09%	0.14%	0.16%
Trochlear nucleus	IV	1913	768	1561	907250	0.21%	0.08%	0.17%	0.16%
Mediodorsal nucleus of thalamus	MD	292631	186827	295475	168142000	0.17%	0.11%	0.18%	0.15%
Gustatory areas, layer 1	GU1	114400	35996	97970	53901000	0.21%	0.07%	0.18%	0.15%
Basomedial amygdalar nucleus	BMA	268928	193392	161499	135457750	0.20%	0.14%	0.12%	0.15%
Infralimbic area, layer 5	ILA5	198668	26537	37619	58523250	0.34%	0.05%	0.06%	0.15%
Agranular insular area, posterior part, layer 2/3	AIp2/3	119741	82763	88600	65035000	0.18%	0.13%	0.14%	0.15%
Agranular insular area, dorsal part, layer 5	AId5	234096	37277	95660	82023750	0.29%	0.05%	0.12%	0.15%
Gustatory areas, layer 2/3	GU2/3	188798	58613	131358	85143500	0.22%	0.07%	0.15%	0.15%
Nucleus of the lateral olfactory tract, layer 3	NLOT3	61332	34639	30596	28535750	0.21%	0.12%	0.11%	0.15%
Orbital area, medial part, layer 1	ORBm1	103212	27399	41318	38792500	0.27%	0.07%	0.11%	0.15%
Visceral area, layer 2/3	VISC2/3	103064	43312	85348	52793000	0.20%	0.08%	0.16%	0.15%
Lateral septal nucleus, caudal (caudodorsal) part	LSc	181539	56734	52439	67021250	0.27%	0.08%	0.08%	0.14%
Retrosplenial area, ventral part, layer 1	RSPv1	141016	47811	129932	73496000	0.19%	0.07%	0.18%	0.14%
Superior central nucleus raphe	CS	201618	106616	57154	84660500	0.24%	0.13%	0.07%	0.14%
Agranular insular area, ventral part, layer 2/3	AIv2/3	220449	34226	76830	77108000	0.29%	0.04%	0.10%	0.14%
Ectorhinal area/Layer 2/3	ECT2/3	178144	69549	84895	78064250	0.23%	0.09%	0.11%	0.14%
Anterior cingulate area, ventral part, layer 1	ACAv1	121000	44446	124359	68549000	0.18%	0.06%	0.18%	0.14%
Postpiriform transition area	TR	239615	134655	165792	129173000	0.19%	0.10%	0.13%	0.14%
Red nucleus	RN	92546	76066	165011	80400750	0.12%	0.09%	0.21%	0.14%
Globus pallidus, internal segment	GPi	117626	52275	49456	53079250	0.22%	0.10%	0.09%	0.14%
Barrington's nucleus	B	6855	9228	2128	4464500	0.15%	0.21%	0.05%	0.14%
posteromedial visual area, layer 6b	VISpm6b	5635	4617	9070	4738250	0.12%	0.10%	0.19%	0.14%
Anteromedial visual area, layer 1	VISam1	28038	11975	23683	15622750	0.18%	0.08%	0.15%	0.14%
Medial geniculate complex	MG	95942	37698	99360	58819000	0.16%	0.06%	0.17%	0.13%
undefined part of the tectospinal pathway	tsp_0	32758	24411	20829	19808500	0.17%	0.12%	0.11%	0.13%
Agranular insular area, dorsal part, layer 2/3	AId2/3	318486	88811	128785	137821750	0.23%	0.06%	0.09%	0.13%
Prelimbic area, layer 1	PL1	114636	57960	69272	62299250	0.18%	0.09%	0.11%	0.13%
Gustatory areas, layer 4	GU4	47547	12299	38686	25442750	0.19%	0.05%	0.15%	0.13%
Ectorhinal area/Layer 1	ECT1	85363	36581	65633	48570250	0.18%	0.08%	0.14%	0.13%
Orbital area, lateral part, layer 6b	ORBl6b	137	2	14	39750	0.34%	0.01%	0.04%	0.13%
Midbrain trigeminal nucleus	MEV	9031	5352	2708	4454000	0.20%	0.12%	0.06%	0.13%
Retrosplenial area, lateral agranular part, layer 1	RSPagl1	75527	23660	46555	37984250	0.20%	0.06%	0.12%	0.13%
anterior commissure, olfactory limb	aco	267040	56036	95454	109733500	0.24%	0.05%	0.09%	0.13%
Nucleus of the lateral olfactory tract, molecular layer	NLOT1	43907	13685	20232	20506500	0.21%	0.07%	0.10%	0.13%
Ectorhinal area/Layer 6b	ECT6b	27332	6556	14459	12881250	0.21%	0.05%	0.11%	0.13%
Orbital area, ventrolateral part, layer 6a	ORBvl6a	50966	8654	14486	19844750	0.26%	0.04%	0.07%	0.12%
Endopiriform nucleus, ventral part	EPv	88008	51930	69140	57104000	0.15%	0.09%	0.12%	0.12%

Agranular insular area, posterior part, layer 1	AIp1	84220	58563	77810	60401750	0.14%	0.10%	0.13%	0.12%
Nucleus of the optic tract	NOT	17803	7208	14003	10737500	0.17%	0.07%	0.13%	0.12%
Anterior cingulate area, dorsal part, layer 1	ACAd1	113188	48895	87052	68595250	0.17%	0.07%	0.13%	0.12%
Agranular insular area, posterior part, layer 6a	AIp6a	44226	34014	20977	27460500	0.16%	0.12%	0.08%	0.12%
Agranular insular area, ventral part, layer 5	AIv5	111022	25246	46292	50563250	0.22%	0.05%	0.09%	0.12%
Agranular insular area, dorsal part, layer 6a	AId6a	53438	24791	57493	37602750	0.14%	0.07%	0.15%	0.12%
Perirhinal area, layer 6b	PERI6b	18621	7685	10638	10247750	0.18%	0.07%	0.10%	0.12%
Primary somatosensory area, trunk, layer 1	SSp-tr1	30213	6438	19446	15669500	0.19%	0.04%	0.12%	0.12%
Superior colliculus, motor related, deep white layer	SCdw	57216	44201	50525	42569000	0.13%	0.10%	0.12%	0.12%
undefined part of the Cortical subplate	CTXsp_0	361486	157409	216008	206334500	0.18%	0.08%	0.10%	0.12%
Gustatory areas, layer 6b	GU6b	5683	8718	17115	8859500	0.06%	0.10%	0.19%	0.12%
Agranular insular area, posterior part, layer 5	AIp5	97059	52911	52105	57050000	0.17%	0.09%	0.09%	0.12%
Visceral area, layer 4	VISC4	38982	11546	36432	24653000	0.16%	0.05%	0.15%	0.12%
brachium of the inferior colliculus	bic	78797	24980	46584	42779750	0.18%	0.06%	0.11%	0.12%
Perirhinal area, layer 6a	PERI6a	55556	26577	34998	33472250	0.17%	0.08%	0.10%	0.12%
Primary somatosensory area, lower limb, layer 1	SSp-ll1	51522	13707	25534	26125750	0.20%	0.05%	0.10%	0.12%
Infralimbic area, layer 6a	ILA6a	104396	19762	31829	44914750	0.23%	0.04%	0.07%	0.12%
posteromedial visual area, layer 1	VISpm1	29850	13477	32184	21782250	0.14%	0.06%	0.15%	0.12%
Pedunculopontine nucleus	PPN	120766	46395	31173	57636750	0.21%	0.08%	0.05%	0.11%
Globus pallidus, external segment	GPe	375747	121634	195437	201414000	0.19%	0.06%	0.10%	0.11%
Superior colliculus, motor related, intermediate white layer	SCiw	341372	230394	323870	261825250	0.13%	0.09%	0.12%	0.11%
Temporal association areas, layer 6b	TEa6b	32807	6934	19663	17380750	0.19%	0.04%	0.11%	0.11%
Primary somatosensory area, trunk, layer 6b	SSp-tr6b	4590	2111	7256	4106250	0.11%	0.05%	0.18%	0.11%
Superior colliculus, motor related, deep gray layer	SCdg	199482	148679	169075	152341000	0.13%	0.10%	0.11%	0.11%
Gustatory areas, layer 5	GU5	184384	48773	116913	103699250	0.18%	0.05%	0.11%	0.11%
Agranular insular area, dorsal part, layer 1	AId1	139207	44642	74791	76654750	0.18%	0.06%	0.10%	0.11%
Ectorhinal area/Layer 6a	ECT6a	64031	20345	42229	37536000	0.17%	0.05%	0.11%	0.11%
Agranular insular area, ventral part, layer 6a	AIv6a	18046	8910	14104	12197500	0.15%	0.07%	0.12%	0.11%
stria terminalis	st	201609	45844	50112	88724250	0.23%	0.05%	0.06%	0.11%
Visceral area, layer 6a	VISC6a	95448	39522	63142	60155500	0.16%	0.07%	0.10%	0.11%
Postrhinal area, layer 1	VISpor1	31780	16822	11713	18329250	0.17%	0.09%	0.06%	0.11%
Agranular insular area, ventral part, layer 1	AIv1	107664	32672	56857	59983250	0.18%	0.05%	0.09%	0.11%
Claustrum	CLA	68735	61563	73084	61869500	0.11%	0.10%	0.12%	0.11%
Cortical amygdalar area, anterior part	COAa	106484	67274	60125	71681500	0.15%	0.09%	0.08%	0.11%
cerebal peduncle	cpd	172784	71073	110189	109063750	0.16%	0.07%	0.10%	0.11%
Ventral auditory area, layer 1	AUDv1	43738	17334	53216	35335750	0.12%	0.05%	0.15%	0.11%
Cortical amygdalar area, posterior part	COAp	369876	188290	226199	243869500	0.15%	0.08%	0.09%	0.11%
Pontine central gray	PCG	109110	95140	41723	76622750	0.14%	0.12%	0.05%	0.11%
Endopiriform nucleus, dorsal part	EPd	308212	177853	241131	227104250	0.14%	0.08%	0.11%	0.11%
Parabrachial nucleus	PB	189770	108309	50630	108954500	0.17%	0.10%	0.05%	0.11%
Temporal association areas, layer 1	TEa1	81201	26064	67942	54754750	0.15%	0.05%	0.12%	0.11%
Ventral auditory area, layer 6b	AUDv6b	20180	6082	6468	10259250	0.20%	0.06%	0.06%	0.11%
Primary somatosensory area, trunk, layer 6a	SSp-tr6a	26747	10526	29433	20951250	0.13%	0.05%	0.14%	0.11%
Postrhinal area, layer 2/3	VISpor2/3	87608	33639	28480	47367000	0.18%	0.07%	0.06%	0.11%
Perirhinal area, layer 2/3	PERI2/3	117239	72461	95802	90513000	0.13%	0.08%	0.11%	0.11%
Gustatory areas, layer 6a	GU6a	122257	61659	110201	93332500	0.13%	0.07%	0.12%	0.11%
Retrosplenial area, ventral part, layer 2/3	RSPv2/3	246484	89151	207604	172481250	0.14%	0.05%	0.12%	0.10%
Postrhinal area, layer 6b	VISpor6b	2610	2545	1108	1996250	0.13%	0.13%	0.06%	0.10%

Retrosplenial area, lateral agranular part, layer 6a	RSPagl6a	40388	10969	35016	27556000	0.15%	0.04%	0.13%	0.10%
Temporal association areas, layer 4	TEa4	51286	16105	22412	28698000	0.18%	0.06%	0.08%	0.10%
undefined part of the Olfactory areas	OLF_0	1077286	245023	351148	537401500	0.20%	0.05%	0.07%	0.10%
midbrain tract of the trigeminal nerve	mtV	2757	1719	543	1612000	0.17%	0.11%	0.03%	0.10%
inferior colliculus commissure	cic	2969	1985	2964	2545250	0.12%	0.08%	0.12%	0.10%
Ectorhinal area/Layer 5	ECT5	121700	44463	77432	78649750	0.15%	0.06%	0.10%	0.10%
Paracentral nucleus	PCN	35958	18920	47389	33044000	0.11%	0.06%	0.14%	0.10%
Infralimbic area, layer 6b	ILA6b	15369	5802	15394	11840250	0.13%	0.05%	0.13%	0.10%
Orbital area, ventrolateral part, layer 2/3	ORBvl2/3	167040	13787	31858	69219250	0.24%	0.02%	0.05%	0.10%
Orbital area, medial part, layer 2/3	ORBm2/3	87403	23719	28580	45567750	0.19%	0.05%	0.06%	0.10%
Nucleus incertus	NI	21668	23817	6239	16948250	0.13%	0.14%	0.04%	0.10%
Visceral area, layer 6b	VISC6b	5559	4300	6354	5345000	0.10%	0.08%	0.12%	0.10%
Basolateral amygdalar nucleus, ventral part	BLAv	40493	23346	34451	32441250	0.12%	0.07%	0.11%	0.10%
Ventral part of the lateral geniculate complex	LGv	83037	23084	45778	50524750	0.16%	0.05%	0.09%	0.10%
Temporal association areas, layer 2/3	TEa2/3	128056	43737	74319	82080750	0.16%	0.05%	0.09%	0.10%
Laterodorsal tegmental nucleus	LDT	15757	20207	7416	14487250	0.11%	0.14%	0.05%	0.10%
Orbital area, medial part, layer 5	ORBm5	50151	17818	21133	30014750	0.17%	0.06%	0.07%	0.10%
Anteromedial visual area, layer 6b	VISam6b	3249	1704	1928	2330500	0.14%	0.07%	0.08%	0.10%
Anterior cingulate area, ventral part, 6a	ACAv6a	48822	16446	40544	35940000	0.14%	0.05%	0.11%	0.10%
Primary visual area, layer 1	VISp1	145845	88070	86580	109036750	0.13%	0.08%	0.08%	0.10%
Visceral area, layer 5	VISC5	81556	27475	69170	60676000	0.13%	0.05%	0.11%	0.10%
Temporal association areas, layer 6a	TEa6a	82257	29055	62319	59380500	0.14%	0.05%	0.10%	0.10%
Agranular insular area, dorsal part, layer 6b	AId6b	594	552	1181	805750	0.07%	0.07%	0.15%	0.10%
Secondary motor area, layer 1	MOs1	328377	122131	224262	234627500	0.14%	0.05%	0.10%	0.10%
Anteromedial visual area, layer 6a	VISam6a	18839	10768	23516	18472750	0.10%	0.06%	0.13%	0.10%
Parasubiculum	PAR	167363	84989	83088	117209500	0.14%	0.07%	0.07%	0.10%
Primary somatosensory area, unassigned, layer 1	SSp-un1	29001	10140	9196	16890750	0.17%	0.06%	0.05%	0.10%
Posterior auditory area, layer 4	AUDpo4	3069	1930	2617	2663750	0.12%	0.07%	0.10%	0.10%
Anterior pretectal nucleus	APN	183882	66822	160298	143862250	0.13%	0.05%	0.11%	0.10%
cingulum bundle	cing	169102	70296	136192	131620500	0.13%	0.05%	0.10%	0.10%
dorsal hippocampal commissure	dhc	126247	90228	119978	118288000	0.11%	0.08%	0.10%	0.09%
Retrosplenial area, dorsal part, layer 6b	RSPd6b	3033	1732	2062	2416750	0.13%	0.07%	0.09%	0.09%
Primary motor area, Layer 1	MOp1	376718	149747	279471	286047000	0.13%	0.05%	0.10%	0.09%
Primary somatosensory area, upper limb, layer 1	SSp-ul1	55855	21725	34323	39818500	0.14%	0.05%	0.09%	0.09%
Locus ceruleus	LC	3787	1453	508	2053500	0.18%	0.07%	0.02%	0.09%
Retrosplenial area, dorsal part, layer 6a	RSPd6a	103315	53505	94889	89994250	0.11%	0.06%	0.11%	0.09%
Retrosplenial area, dorsal part, layer 1	RSPd1	83514	30004	57517	61210000	0.14%	0.05%	0.09%	0.09%
Temporal association areas, layer 5	TEa5	155620	62658	98722	113717000	0.14%	0.06%	0.09%	0.09%
Anterior olfactory nucleus	AON	783326	232030	286896	468370000	0.17%	0.05%	0.06%	0.09%
Orbital area, lateral part, layer 5	ORBl5	108344	24943	30449	59670250	0.18%	0.04%	0.05%	0.09%
Orbital area, ventrolateral part, layer 5	ORBvl5	59443	11054	10736	29670250	0.20%	0.04%	0.04%	0.09%
Perirhinal area, layer 5	PERI5	98274	46950	80310	82531000	0.12%	0.06%	0.10%	0.09%
Posterior auditory area, layer 1	AUDpo1	3678	1395	3617	3194750	0.12%	0.04%	0.11%	0.09%
Perirhinal area, layer 1	PERI1	60372	39442	54451	57136000	0.11%	0.07%	0.10%	0.09%
Suprageniculate nucleus	SGN	6918	235	3345	3897000	0.18%	0.01%	0.09%	0.09%
Sublaterodorsal nucleus	SLD	13514	10448	2021	9654500	0.14%	0.11%	0.02%	0.09%
Anterior cingulate area, ventral part, 6b	ACAv6b	10731	4544	7097	8332250	0.13%	0.05%	0.09%	0.09%
Medial habenula	MH	81690	6469	11771	37274750	0.22%	0.02%	0.03%	0.09%

Laterointermediate area, layer 1	VISli1	8757	5833	7843	8420250	0.10%	0.07%	0.09%	0.09%
Frontal pole, layer 1	FRP1	158741	18289	31603	78586000	0.20%	0.02%	0.04%	0.09%
corpus callosum	cc	1785793	594841	995964	1277029750	0.14%	0.05%	0.08%	0.09%
Entorhinal area, lateral part	ENTl	1315829	733916	662564	1027386500	0.13%	0.07%	0.06%	0.09%
Entorhinal area, medial part, dorsal zone	ENTm	438748	306264	236535	374553250	0.12%	0.08%	0.06%	0.09%
Orbital area, medial part, layer 6a	ORBm6a	22832	6432	4525	12910000	0.18%	0.05%	0.04%	0.09%
Primary auditory area, layer 1	AUDp1	37025	13008	29565	30541750	0.12%	0.04%	0.10%	0.09%
Fasciola cinerea	FC	14074	696	5388	7780500	0.18%	0.01%	0.07%	0.09%
Posterior auditory area, layer 5	AUDpo5	9379	3681	5727	7251500	0.13%	0.05%	0.08%	0.09%
Frontal pole, layer 2/3	FRP2/3	20203	4548	14471	15175000	0.13%	0.03%	0.10%	0.09%
Retrosplenial area, ventral part, layer 6b	RSPv6b	11830	5034	10124	10448500	0.11%	0.05%	0.10%	0.09%
Supplemental somatosensory area, layer 6b	SSs6b	20002	7008	15608	16695250	0.12%	0.04%	0.09%	0.09%
Anterolateral visual area, layer 1	VISal1	16392	4803	6290	10770250	0.15%	0.04%	0.06%	0.09%
Supplemental somatosensory area, layer 1	SSs1	100857	46618	89168	93157500	0.11%	0.05%	0.10%	0.08%
Orbital area, lateral part, layer 6a	ORBl6a	37254	12887	9548	23527750	0.16%	0.05%	0.04%	0.08%
superior cerebelar peduncles	scp	83829	36718	23262	56704750	0.15%	0.06%	0.04%	0.08%
Lateral visual area, layer 1	VISl1	20794	14431	12480	18837000	0.11%	0.08%	0.07%	0.08%
posteromedial visual area, layer 6a	VISpm6a	22842	11434	22749	22656750	0.10%	0.05%	0.10%	0.08%
Postrhinal area, layer 6a	VISpor6a	21223	12505	6987	16194000	0.13%	0.08%	0.04%	0.08%
Ventral auditory area, layer 6a	AUDv6a	82171	30550	38339	60198250	0.14%	0.05%	0.06%	0.08%
Supplemental somatosensory area, layer 6a	SSs6a	180065	50203	105774	134378500	0.13%	0.04%	0.08%	0.08%
Anterior cingulate area, dorsal part, layer 6b	ACAd6b	7266	3363	3779	5762250	0.13%	0.06%	0.07%	0.08%
Central lateral nucleus of the thalamus	CL	34158	12985	27922	30082250	0.11%	0.04%	0.09%	0.08%
Basolateral amygdalar nucleus, anterior part	BLAa	109874	50235	65234	90539000	0.12%	0.06%	0.07%	0.08%
Posterior auditory area, layer 2/3	AUDpo2/3	7712	2648	4722	6066500	0.13%	0.04%	0.08%	0.08%
Retrosplenial area, ventral part, layer 6a	RSPv6a	115342	52211	117654	114891000	0.10%	0.05%	0.10%	0.08%
Primary visual area, layer 6b	VISp6b	15738	18847	15716	20272750	0.08%	0.09%	0.08%	0.08%
Anterior area, layer 1	VISa1	14435	4798	7209	10762500	0.13%	0.04%	0.07%	0.08%
undefined part of the fiber tracts	fiber tracts_0	615334	180665	350397	466800500	0.13%	0.04%	0.08%	0.08%
Subceruleus nucleus	SLC	5446	2464	1485	3827500	0.14%	0.06%	0.04%	0.08%
Orbital area, ventrolateral part, layer 1	ORBvl1	83446	8608	27427	48945750	0.17%	0.02%	0.06%	0.08%
undefined part of the rubrospinal tract	rust_0	50019	23503	34905	44561000	0.11%	0.05%	0.08%	0.08%
Secondary motor area, layer 6b	MOs6b	14898	5143	8000	11572750	0.13%	0.04%	0.07%	0.08%
Orbital area, ventrolateral part, layer 6b	ORBvl6b	311	12	18	140750	0.22%	0.01%	0.01%	0.08%
Lateral posterior nucleus of the thalamus	LP	137988	53716	133409	135425000	0.10%	0.04%	0.10%	0.08%
Cuneiform nucleus	CUN	45535	25297	17159	36698250	0.12%	0.07%	0.05%	0.08%
Anterior area, layer 6a	VISa6a	13539	7362	8516	12277500	0.11%	0.06%	0.07%	0.08%
Postrhinal area, layer 5	VISpor5	59897	24950	23159	45630500	0.13%	0.05%	0.05%	0.08%
Primary somatosensory area, lower limb, layer 6b	SSp-ll6b	15384	4423	9544	12410000	0.12%	0.04%	0.08%	0.08%
Anterior cingulate area, dorsal part, layer 6a	ACAd6a	49830	20569	33634	44006000	0.11%	0.05%	0.08%	0.08%
internal capsule	int	394120	122543	195345	304109250	0.13%	0.04%	0.06%	0.08%
Nucleus raphe pontis	RPO	8487	3222	696	5340500	0.16%	0.06%	0.01%	0.08%
Postsubiculum	POST	112711	68078	60968	104179000	0.11%	0.07%	0.06%	0.08%
Ventral auditory area, layer 2/3	AUDv2/3	71321	27002	51062	64618750	0.11%	0.04%	0.08%	0.08%
Prelimbic area, layer 6a	PL6a	44583	16442	11848	31543000	0.14%	0.05%	0.04%	0.08%
Secondary motor area, layer 2/3	MOs2/3	394196	236629	307761	407936000	0.10%	0.06%	0.08%	0.08%
Parabigeminal nucleus	PBG	13909	4413	5971	10577750	0.13%	0.04%	0.06%	0.08%
habenular commissure	hbc	13020	410	3035	7170000	0.18%	0.01%	0.04%	0.08%

Secondary motor area, layer 6a	MOs6a	193199	63536	101413	155988000	0.12%	0.04%	0.07%	0.08%
fimbria	fi	251511	70590	81736	176381750	0.14%	0.04%	0.05%	0.08%
amygdalar capsule	amc	9118	6952	5825	9581250	0.10%	0.07%	0.06%	0.08%
Anterior area, layer 6b	VISa6b	1979	1444	681	1805500	0.11%	0.08%	0.04%	0.08%
undefined part of the Hippocampal formation	HPF_0	350803	215165	199125	336645750	0.10%	0.06%	0.06%	0.08%
Piriform-amygdalar area	PAA	83865	62081	56517	89601750	0.09%	0.07%	0.06%	0.08%
Retrosplenial area, dorsal part, layer 2/3	RSPd2/3	142824	52156	87759	125267250	0.11%	0.04%	0.07%	0.08%
Ventral auditory area, layer 5	AUDv5	101246	42562	65768	93063750	0.11%	0.05%	0.07%	0.08%
Orbital area, lateral part, layer 2/3	ORBl2/3	144804	20578	30084	86875250	0.17%	0.02%	0.03%	0.07%
Primary motor area, Layer 6b	MOp6b	83018	34353	77840	86831000	0.10%	0.04%	0.09%	0.07%
Primary visual area, layer 6a	VISp6a	158173	108342	94091	160470500	0.10%	0.07%	0.06%	0.07%
Dorsal auditory area, layer 1	AUDd1	64142	26318	36677	56650000	0.11%	0.05%	0.06%	0.07%
Retrosplenial area, lateral agranular part, layer 5	RSPagl5	56694	17498	33958	48270250	0.12%	0.04%	0.07%	0.07%
Posterolateral visual area, layer 6a	VISpl6a	15769	20160	4767	18163750	0.09%	0.11%	0.03%	0.07%
Retrosplenial area, lateral agranular part, layer 2/3	RSPagl2/3	55989	14894	35242	47806750	0.12%	0.03%	0.07%	0.07%
Basolateral amygdalar nucleus, posterior part	BLAp	70855	43332	61970	79409750	0.09%	0.05%	0.08%	0.07%
Tegmental reticular nucleus	TRN	73388	65987	57901	89083250	0.08%	0.07%	0.06%	0.07%
Ventral auditory area, layer 4	AUDv4	37083	15728	20217	32978500	0.11%	0.05%	0.06%	0.07%
Primary somatosensory area, mouth, layer 1	SSp-m1	98224	44908	69537	96111250	0.10%	0.05%	0.07%	0.07%
Intergeniculate leaflet of the lateral geniculate complex	IGL	10859	2603	5953	8863250	0.12%	0.03%	0.07%	0.07%
Nucleus sagulum	SAG	10723	9132	5434	11649750	0.09%	0.08%	0.05%	0.07%
Anterior cingulate area, ventral part, layer 5	ACAv5	86256	26954	43542	72305750	0.12%	0.04%	0.06%	0.07%
Laterointermediate area, layer 6a	VISli6a	11709	6686	4330	10532500	0.11%	0.06%	0.04%	0.07%
Primary somatosensory area, lower limb, layer 6a	SSp-ll6a	46742	20655	35650	47768000	0.10%	0.04%	0.07%	0.07%
medial longitudinal fascicle	mlf	130350	82541	75283	133600750	0.10%	0.06%	0.06%	0.07%
alveus	alv	81828	28827	34187	67320500	0.12%	0.04%	0.05%	0.07%
Retrosplenial area, ventral part, layer 5	RSPv5	202926	96228	189778	229474500	0.09%	0.04%	0.08%	0.07%
Primary motor area, Layer 6a	MOp6a	510393	177166	326167	476051000	0.11%	0.04%	0.07%	0.07%
Caudoputamen	CP	3652728	1199848	1857374	3178247500	0.11%	0.04%	0.06%	0.07%
Primary somatosensory area, mouth, layer 6a	SSp-m6a	173438	47287	106763	155120250	0.11%	0.03%	0.07%	0.07%
Anterolateral visual area, layer 6a	VISal6a	12580	6768	12856	15255250	0.08%	0.04%	0.08%	0.07%
Lateral dorsal nucleus of thalamus	LD	119219	46425	114473	133251500	0.09%	0.03%	0.09%	0.07%
Prelimbic area, layer 5	PL5	61349	23353	33422	56421500	0.11%	0.04%	0.06%	0.07%
Primary somatosensory area, barrel field, layer 1	SSp-bfd1	71308	37209	33952	68137500	0.10%	0.05%	0.05%	0.07%
Secondary motor area, layer 5	MOs5	328975	180911	274391	375197000	0.09%	0.05%	0.07%	0.07%
Anterior cingulate area, dorsal part, layer 5	ACAd5	72711	43425	59508	85288500	0.09%	0.05%	0.07%	0.07%
Nucleus raphe magnus	RM	9646	16478	7783	16509250	0.06%	0.10%	0.05%	0.07%
Presubiculum	PRE	130729	71657	67263	131407000	0.10%	0.05%	0.05%	0.07%
Primary auditory area, layer 6b	AUDp6b	17859	3898	3621	12423500	0.14%	0.03%	0.03%	0.07%
Posterolateral visual area, layer 2/3	VISpl2/3	17142	13972	7312	19125000	0.09%	0.07%	0.04%	0.07%
Posterolateral visual area, layer 1	VISpl1	7140	8009	2137	8693250	0.08%	0.09%	0.02%	0.07%
Primary auditory area, layer 5	AUDp5	94838	28536	57408	90992000	0.10%	0.03%	0.06%	0.07%
Anterolateral visual area, layer 6b	VISal6b	3120	733	1825	2880500	0.11%	0.03%	0.06%	0.07%
Subiculum	SUB	578347	224286	310939	565091750	0.10%	0.04%	0.06%	0.07%
Retrosplenial area, dorsal part, layer 5	RSPd5	138201	50729	105240	149292750	0.09%	0.03%	0.07%	0.07%
Primary somatosensory area, unassigned, layer 6b	SSp-un6b	6817	5626	4603	8677000	0.08%	0.06%	0.05%	0.07%
Lateral visual area, layer 6a	VISl6a	18763	11413	18719	24957750	0.08%	0.05%	0.08%	0.07%
Retrosplenial area, lateral agranular part, layer 6b	RSPagl6b	301	131	199	323000	0.09%	0.04%	0.06%	0.07%

Primary somatosensory area, lower limb, layer 2/3	SSp-ll2/3	73418	19381	35016	65507000	0.11%	0.03%	0.05%	0.07%
Supragenual nucleus	SG	1925	1547	813	2200750	0.09%	0.07%	0.04%	0.06%
Primary motor area, Layer 2/3	MOp2/3	588986	247846	419790	646293750	0.09%	0.04%	0.06%	0.06%
Rostrolateral area, layer 1	VISrl1	14969	6040	7359	14669500	0.10%	0.04%	0.05%	0.06%
Primary somatosensory area, nose, layer 6b	SSp-n6b	10930	3680	5806	10614000	0.10%	0.03%	0.05%	0.06%
Piriform area	PIR	1654538	580350	847996	1603371750	0.10%	0.04%	0.05%	0.06%
Anterior cingulate area, dorsal part, layer 2/3	ACAd2/3	96748	41175	52452	99149750	0.10%	0.04%	0.05%	0.06%
Dorsal auditory area, layer 6b	AUDd6b	23075	5844	11239	21010000	0.11%	0.03%	0.05%	0.06%
Lateral visual area, layer 6b	VISl6b	2289	901	2619	3056000	0.07%	0.03%	0.09%	0.06%
undefined part of the ventricular systems	VS_0	21573	9025	37745	35957750	0.06%	0.03%	0.10%	0.06%
Primary somatosensory area, upper limb, layer 6b	SSp-ul6b	22249	7410	11048	21520750	0.10%	0.03%	0.05%	0.06%
Dorsal part of the lateral geniculate complex	LGd	86522	24425	59590	90361250	0.10%	0.03%	0.07%	0.06%
Laterointermediate area, layer 5	VISli5	17649	8239	9371	18852750	0.09%	0.04%	0.05%	0.06%
Reticular nucleus of the thalamus	RT	122078	83651	113944	171307500	0.07%	0.05%	0.07%	0.06%
Primary somatosensory area, mouth, layer 6b	SSp-m6b	10097	6390	12088	15483250	0.07%	0.04%	0.08%	0.06%
Pontine reticular nucleus	PRNr	262371	158850	165662	320300500	0.08%	0.05%	0.05%	0.06%
undefined part of the Isocortex	Isocortex_0	2	0	14	8750	0.02%	0.00%	0.16%	0.06%
Dentate gyrus, polymorph layer	DG-po	47217	103968	31178	99779750	0.05%	0.10%	0.03%	0.06%
Rostrolateral area, layer 6a	VISrl6a	17861	9582	11018	21193500	0.08%	0.05%	0.05%	0.06%
Primary motor area, Layer 5	MOp5	576480	219899	418971	671548250	0.09%	0.03%	0.06%	0.06%
posteromedial visual area, layer 5	VISpm5	22588	11110	25337	32913750	0.07%	0.03%	0.08%	0.06%
Agranular insular area, ventral part, layer 6b	AIv6b	27	7	0	19000	0.14%	0.04%	0.00%	0.06%
Dorsal auditory area, layer 6a	AUDd6a	86794	32559	63149	102019500	0.09%	0.03%	0.06%	0.06%
Lateral amygdalar nucleus	LA	68873	28779	45193	80255500	0.09%	0.04%	0.06%	0.06%
Posterior auditory area, layer 6a	AUDpo6a	2128	806	1601	2560000	0.08%	0.03%	0.06%	0.06%
Primary somatosensory area, trunk, layer 5	SSp-tr5	35644	20705	30088	48841000	0.07%	0.04%	0.06%	0.06%
Postrhinal area, layer 4	VISpor4	4643	1389	1863	4539250	0.10%	0.03%	0.04%	0.06%
Anterolateral visual area, layer 5	VISal5	16186	14956	16469	27399250	0.06%	0.05%	0.06%	0.06%
Primary somatosensory area, upper limb, layer 6a	SSp-ul6a	80278	29901	49096	91842250	0.09%	0.03%	0.05%	0.06%
Rostrolateral area, layer 6b	VISrl6b	3871	3561	1819	5347750	0.07%	0.07%	0.03%	0.06%
Supplemental somatosensory area, layer 4	SSs4	76791	35425	57632	98427000	0.08%	0.04%	0.06%	0.06%
Primary somatosensory area, mouth, layer 4	SSp-m4	99174	25180	65840	111284500	0.09%	0.02%	0.06%	0.06%
Lateral visual area, layer 5	VISl5	28123	17323	26920	42357000	0.07%	0.04%	0.06%	0.06%
Posterolateral visual area, layer 5	VISpl5	20020	17859	9375	27902250	0.07%	0.06%	0.03%	0.06%
Orbital area, lateral part, layer 1	ORBl1	37215	7403	14052	34997000	0.11%	0.02%	0.04%	0.06%
Primary somatosensory area, nose, layer 1	SSp-n1	33609	20643	15300	41518500	0.08%	0.05%	0.04%	0.06%
Primary somatosensory area, mouth, layer 5	SSp-m5	145901	61363	130153	202511500	0.07%	0.03%	0.06%	0.06%
Primary auditory area, layer 2/3	AUDp2/3	67046	15374	45063	76514750	0.09%	0.02%	0.06%	0.06%
Supplemental somatosensory area, layer 5	SSs5	149834	57733	94010	183235000	0.08%	0.03%	0.05%	0.05%
Dorsal auditory area, layer 5	AUDd5	120322	40032	83219	148407750	0.08%	0.03%	0.06%	0.05%
Inferior salivatory nucleus	ISN	1087	10	386	904000	0.12%	0.00%	0.04%	0.05%
Anterior cingulate area, ventral part, layer 2/3	ACAv2/3	80708	31431	36446	90753000	0.09%	0.03%	0.04%	0.05%
Posterior complex of the thalamus	PO	108374	42219	91376	148144750	0.07%	0.03%	0.06%	0.05%
Prelimbic area, layer 2/3	PL2/3	68968	16238	21645	66579500	0.10%	0.02%	0.03%	0.05%
lateral lemniscus	ll	105720	46064	35787	117007500	0.09%	0.04%	0.03%	0.05%
Primary auditory area, layer 6a	AUDp6a	38100	10586	19749	42700000	0.09%	0.02%	0.05%	0.05%
Primary visual area, layer 5	VISp5	201575	99391	108403	257813750	0.08%	0.04%	0.04%	0.05%
Primary somatosensory area, lower limb, layer 5	SSp-ll5	53430	19141	32176	65983500	0.08%	0.03%	0.05%	0.05%

Subgeniculate nucleus	SubG	2476	1121	1610	3326000	0.07%	0.03%	0.05%	0.05%
Nucleus ambiguus, dorsal division	AMBd	859	1256	1606	2379000	0.04%	0.05%	0.07%	0.05%
Anterolateral visual area, layer 2/3	VISal2/3	17852	6943	10778	22848500	0.08%	0.03%	0.05%	0.05%
Pontine gray	PG	76136	46671	61892	119109750	0.06%	0.04%	0.05%	0.05%
Anterior area, layer 5	VISa5	15049	8246	9190	21044250	0.07%	0.04%	0.04%	0.05%
Primary somatosensory area, upper limb, layer 5	SSp-ul5	89077	39861	53890	119889250	0.07%	0.03%	0.04%	0.05%
Primary somatosensory area, barrel field, layer 6a	SSp-bfd6a	108964	41697	79642	152911750	0.07%	0.03%	0.05%	0.05%
undefined part of the Retrosplenial area, lateral agranular part	RSPagl_0	4407	2263	3187	6558000	0.07%	0.03%	0.05%	0.05%
undefined part of the Pons	P_0	537320	360082	231293	754856000	0.07%	0.05%	0.03%	0.05%
Laterointermediate area, layer 2/3	VISli2/3	11508	5846	5794	15541750	0.07%	0.04%	0.04%	0.05%
Anteromedial visual area, layer 5	VISam5	12758	8696	18985	27247750	0.05%	0.03%	0.07%	0.05%
undefined part of the Primary motor area	MOp_0	45738	16454	35809	66255250	0.07%	0.02%	0.05%	0.05%
Supplemental somatosensory area, layer 2/3	SSs2/3	118001	68697	117586	206006500	0.06%	0.03%	0.06%	0.05%
Primary auditory area, layer 4	AUDp4	27616	6806	13384	32475000	0.09%	0.02%	0.04%	0.05%
posteromedial visual area, layer 2/3	VISpm2/3	23359	10911	22806	38841750	0.06%	0.03%	0.06%	0.05%
Inferior olivary complex	IO	21135	53979	19786	64762250	0.03%	0.08%	0.03%	0.05%
Posterior auditory area, layer 6b	AUDpo6b	475	75	195	510250	0.09%	0.01%	0.04%	0.05%
Primary somatosensory area, trunk, layer 2/3	SSp-tr2/3	31471	10276	23018	44474750	0.07%	0.02%	0.05%	0.05%
Ventral anterior-lateral complex of the thalamus	VAL	58799	29096	41385	90158500	0.07%	0.03%	0.05%	0.05%
Dentate gyrus, granule cell layer	DG-sg	68706	156303	58948	198278500	0.03%	0.08%	0.03%	0.05%
Inferior colliculus	IC	378950	322166	296826	698627000	0.05%	0.05%	0.04%	0.05%
undefined part of the root	root_0	21	17	59	68000	0.03%	0.03%	0.09%	0.05%
Primary somatosensory area, nose, layer 6a	SSp-n6a	89055	17217	39439	103312750	0.09%	0.02%	0.04%	0.05%
Anteromedial visual area, layer 2/3	VISam2/3	17338	9709	9300	26016250	0.07%	0.04%	0.04%	0.05%
Primary somatosensory area, lower limb, layer 4	SSp-ll4	22149	6904	11257	28858500	0.08%	0.02%	0.04%	0.05%
Posterolateral visual area, layer 4	VISpl4	5040	1590	1391	5767000	0.09%	0.03%	0.02%	0.05%
Oculomotor nucleus	III	2005	1976	2144	4431250	0.05%	0.04%	0.05%	0.05%
Prelimbic area, layer 6b	PL6b	1907	706	1014	2628250	0.07%	0.03%	0.04%	0.05%
Primary somatosensory area, unassigned, layer 6a	SSp-un6a	23230	16119	18128	42494000	0.05%	0.04%	0.04%	0.05%
Primary somatosensory area, barrel field, layer 6b	SSp-bfd6b	18198	6920	13799	28945000	0.06%	0.02%	0.05%	0.04%
Rostrolateral area, layer 5	VISrl5	17686	15770	17908	38339000	0.05%	0.04%	0.05%	0.04%
Primary somatosensory area, upper limb, layer 4	SSp-ul4	49025	12315	17532	58926500	0.08%	0.02%	0.03%	0.04%
Dorsal auditory area, layer 4	AUDd4	33810	12684	21039	50461250	0.07%	0.03%	0.04%	0.04%
Nucleus raphe obscurus	RO	790	397	1513	2046500	0.04%	0.02%	0.07%	0.04%
undefined part of the corticospinal tract	cst_0	4268	2665	5890	9814750	0.04%	0.03%	0.06%	0.04%
Primary somatosensory area, upper limb, layer 2/3	SSp-ul2/3	81289	28604	44329	118693000	0.07%	0.02%	0.04%	0.04%
Dorsal auditory area, layer 2/3	AUDd2/3	77527	25511	49386	117574000	0.07%	0.02%	0.04%	0.04%
Primary somatosensory area, barrel field, layer 5	SSp-bfd5	101095	64014	92960	202048500	0.05%	0.03%	0.05%	0.04%
posteromedial visual area, layer 4	VISpm4	5438	3660	8475	13826000	0.04%	0.03%	0.06%	0.04%
Primary somatosensory area, unassigned, layer 5	SSp-un5	30365	9813	27732	53656250	0.06%	0.02%	0.05%	0.04%
Laterointermediate area, layer 4	VISli4	3824	1745	1532	5718250	0.07%	0.03%	0.03%	0.04%
Primary visual area, layer 2/3	VISp2/3	151213	83743	83931	257886750	0.06%	0.03%	0.03%	0.04%
Anterolateral visual area, layer 4	VISal4	5138	2974	3524	9579000	0.05%	0.03%	0.04%	0.04%
Laterointermediate area, layer 6b	VISli6b	1135	413	525	1720750	0.07%	0.02%	0.03%	0.04%
Lateral visual area, layer 2/3	VISl2/3	24499	13740	10661	40591500	0.06%	0.03%	0.03%	0.04%
Retrosplenial area, dorsal part, layer 4	RSPd4	766	847	673	1928750	0.04%	0.04%	0.03%	0.04%
Supratrigeminal nucleus	SUT	16083	4790	3145	20502750	0.08%	0.02%	0.02%	0.04%
Nucleus of the lateral lemniscus	NLL	48659	29697	14292	81728000	0.06%	0.04%	0.02%	0.04%

Anteromedial visual area, layer 4	VISam4	2891	2584	5417	9868250	0.03%	0.03%	0.05%	0.04%
Primary somatosensory area, mouth, layer 2/3	SSp-m2/3	128894	44835	100117	248496250	0.05%	0.02%	0.04%	0.04%
Accessory olfactory bulb, glomerular layer	AOBgl	17297	2566	143	18309500	0.09%	0.01%	0.00%	0.04%
Primary somatosensory area, nose, layer 5	SSp-n5	51562	22408	45405	109283000	0.05%	0.02%	0.04%	0.04%
Ventral posteromedial nucleus of the thalamus	VPM	75095	25449	118523	200555000	0.04%	0.01%	0.06%	0.04%
Rostrolateral area, layer 2/3	VISrl2/3	15248	9715	10982	33112250	0.05%	0.03%	0.03%	0.04%
Anterior area, layer 4	VISa4	4456	1793	3150	8659250	0.05%	0.02%	0.04%	0.04%
Hypoglossal nucleus	XII	13027	21851	12771	44049000	0.03%	0.05%	0.03%	0.04%
Lateral visual area, layer 4	VISl4	6691	5328	4178	15230500	0.04%	0.03%	0.03%	0.04%
ventral hippocampal commissure	vhc	7827	1229	6235	14559750	0.05%	0.01%	0.04%	0.04%
Main olfactory bulb	MOB	1302599	342239	443648	2010458500	0.06%	0.02%	0.02%	0.03%
Magnocellular reticular nucleus	MARN	14120	44022	25156	80381750	0.02%	0.05%	0.03%	0.03%
third ventricle	V3	31824	43733	93890	163944250	0.02%	0.03%	0.06%	0.03%
solitary tract	ts	959	21	305	1244250	0.08%	0.00%	0.02%	0.03%
undefined part of the optic nerve	IIn_0	5415	1048	1291	7562500	0.07%	0.01%	0.02%	0.03%
pyramid	py	7987	52622	7687	67223000	0.01%	0.08%	0.01%	0.03%
Parapyramidal nucleus	PPY	1090	2436	1294	4833000	0.02%	0.05%	0.03%	0.03%
Primary visual area, layer 4	VISp4	57122	27325	33471	119327000	0.05%	0.02%	0.03%	0.03%
Primary somatosensory area, unassigned, layer 2/3	SSp-un2/3	28979	9731	17374	56794250	0.05%	0.02%	0.03%	0.03%
central canal, spinal cord/medulla	c	83	0	66	160500	0.05%	0.00%	0.04%	0.03%
Primary somatosensory area, trunk, layer 4	SSp-tr4	4867	2077	4483	12404500	0.04%	0.02%	0.04%	0.03%
external medullary lamina of the thalamus	em	5393	3669	5876	16218250	0.03%	0.02%	0.04%	0.03%
Rostrolateral area, layer 4	VISrl4	5778	3706	3537	14194750	0.04%	0.03%	0.02%	0.03%
Primary somatosensory area, barrel field, layer 4	SSp-bfd4	40149	20682	31623	101109250	0.04%	0.02%	0.03%	0.03%
Primary somatosensory area, nose, layer 4	SSp-n4	25854	13910	16350	62837500	0.04%	0.02%	0.03%	0.03%
Primary somatosensory area, unassigned, layer 4	SSp-un4	11016	4497	7055	25277500	0.04%	0.02%	0.03%	0.03%
Parvicellular reticular nucleus	PARN	49354	76453	77956	229987000	0.02%	0.03%	0.03%	0.03%
Primary somatosensory area, barrel field, layer 2/3	SSp-bfd2/3	88984	48116	57147	220246750	0.04%	0.02%	0.03%	0.03%
Nucleus of the trapezoid body	NTB	3975	2551	4148	12561000	0.03%	0.02%	0.03%	0.03%
motor root of the trigeminal nerve	moV	1748	2783	1971	7759750	0.02%	0.04%	0.03%	0.03%
Accessory facial motor nucleus	ACVII	76	446	62	703500	0.01%	0.06%	0.01%	0.03%
undefined part of the Ectorhinal area	ECT_0	63	72	8	175500	0.04%	0.04%	0.00%	0.03%
Paragigantocellular reticular nucleus, lateral part	PGRNl	16943	19668	29035	81939500	0.02%	0.02%	0.04%	0.03%
Pontine reticular nucleus, caudal part	PRNc	115826	127420	54021	386949000	0.03%	0.03%	0.01%	0.03%
Accessory olfactory bulb, granular layer	AOBgr	3641	6923	9220	26524250	0.01%	0.03%	0.03%	0.02%
Anterior area, layer 2/3	VISa2/3	7006	3376	4404	19829500	0.04%	0.02%	0.02%	0.02%
Ventral posterolateral nucleus of the thalamus	VPL	25561	9275	23411	78452500	0.03%	0.01%	0.03%	0.02%
Facial motor nucleus	VII	16624	37819	18028	101278750	0.02%	0.04%	0.02%	0.02%
Primary somatosensory area, nose, layer 2/3	SSp-n2/3	33007	28094	25937	123972750	0.03%	0.02%	0.02%	0.02%
Nucleus of the solitary tract	NTS	18466	8509	15881	62210750	0.03%	0.01%	0.03%	0.02%
lateral olfactory tract, body	lot	71684	17986	16270	158061000	0.05%	0.01%	0.01%	0.02%
middle cerebellar peduncle	mcp	21627	36800	18765	116145500	0.02%	0.03%	0.02%	0.02%
Nucleus raphe pallidus	RPA	844	1378	797	4561250	0.02%	0.03%	0.02%	0.02%
Nucleus of Roller	NR	497	659	608	2721000	0.02%	0.02%	0.02%	0.02%
Field CA3	CA3	239098	107973	97795	693316250	0.03%	0.02%	0.01%	0.02%
Medullary reticular nucleus, dorsal part	MDRNd	13965	3833	9479	43896750	0.03%	0.01%	0.02%	0.02%
undefined part of the Medulla	MY_0	197651	240916	231750	1124482000	0.02%	0.02%	0.02%	0.02%
Accessory olfactory bulb, mitral layer	AOBmi	17488	1008	2053	34670500	0.05%	0.00%	0.01%	0.02%

Nucleus y	y	107	711	970	3252500	0.00%	0.02%	0.03%	0.02%
Nucleus x	x	1590	1032	1525	7766500	0.02%	0.01%	0.02%	0.02%
Intermediate reticular nucleus	IRN	48251	51259	60192	300109500	0.02%	0.02%	0.02%	0.02%
Lateral reticular nucleus	LRN	8292	14865	9549	61493250	0.01%	0.02%	0.02%	0.02%
Dorsal motor nucleus of the vagus nerve	DMX	2218	596	3110	11139500	0.02%	0.01%	0.03%	0.02%
Field CA2	CA2	33806	11036	46371	173796750	0.02%	0.01%	0.03%	0.02%
Motor nucleus of trigeminal	V	13684	5202	5020	47422750	0.03%	0.01%	0.01%	0.02%
Field CA1	CA1	275158	80681	157794	1083860750	0.03%	0.01%	0.01%	0.02%
trapezoid body	tb	3280	9220	3727	35672000	0.01%	0.03%	0.01%	0.02%
Paragigantocellular reticular nucleus, dorsal part	PGRNd	2887	3678	1986	19122750	0.02%	0.02%	0.01%	0.01%
Dentate gyrus, molecular layer	DG-mo	94263	78310	50568	501397750	0.02%	0.02%	0.01%	0.01%
Nucleus prepositus	PRP	2600	2046	3911	19311000	0.01%	0.01%	0.02%	0.01%
Nucleus ambiguus, ventral division	AMBv	186	649	292	2735000	0.01%	0.02%	0.01%	0.01%
Gigantocellular reticular nucleus	GRN	21916	32978	39961	236149250	0.01%	0.01%	0.02%	0.01%
Superior vestibular nucleus	SUV	7275	5911	3841	44632750	0.02%	0.01%	0.01%	0.01%
facial nerve	VIIn	2342	979	1556	12927750	0.02%	0.01%	0.01%	0.01%
lateral ventricle	VL	62393	41471	10934	312116750	0.02%	0.01%	0.00%	0.01%
Linear nucleus of the medulla	LIN	211	546	419	3210250	0.01%	0.02%	0.01%	0.01%
Medullary reticular nucleus, ventral part	MDRNv	9621	10468	13035	93978250	0.01%	0.01%	0.01%	0.01%
Spinal nucleus of the trigeminal, caudal part	SPVC	23191	19142	15177	165441500	0.01%	0.01%	0.01%	0.01%
Infracerebellar nucleus	ICB	221	72	123	1222750	0.02%	0.01%	0.01%	0.01%
Dorsal cochlear nucleus	DCO	7114	8971	8815	73529250	0.01%	0.01%	0.01%	0.01%
Superior olivary complex, medial part	SOCm	1792	3898	486	18419500	0.01%	0.02%	0.00%	0.01%
Abducens nucleus	VI	466	70	277	2531250	0.02%	0.00%	0.01%	0.01%
Superior olivary complex, periolivary region	POR	261	4228	501	16124750	0.00%	0.03%	0.00%	0.01%
Cuneate nucleus	CU	5942	705	4294	37229000	0.02%	0.00%	0.01%	0.01%
Principal sensory nucleus of the trigeminal	PSV	20615	11973	5997	137937250	0.01%	0.01%	0.00%	0.01%
spinal tract of the trigeminal nerve	sptV	13069	22729	18797	198469250	0.01%	0.01%	0.01%	0.01%
Medial vestibular nucleus	MV	13965	19267	9945	169698750	0.01%	0.01%	0.01%	0.01%
Superior olivary complex, lateral part	SOCl	1923	3100	1120	24225500	0.01%	0.01%	0.00%	0.01%
External cuneate nucleus	ECU	1405	179	1214	11412000	0.01%	0.00%	0.01%	0.01%
Dentate nucleus	DN	2138	5669	1615	41877250	0.01%	0.01%	0.00%	0.01%
Spinal vestibular nucleus	SPIV	4434	7389	4789	76891000	0.01%	0.01%	0.01%	0.01%
vomeronasal nerve	von	8	0	0	37250	0.02%	0.00%	0.00%	0.01%
Spinal nucleus of the trigeminal, oral part	SPVO	2669	6351	4746	64187000	0.00%	0.01%	0.01%	0.01%
olfactory nerve layer of main olfactory bulb	onl	57303	17091	26567	488937250	0.01%	0.00%	0.01%	0.01%
Spinal nucleus of the trigeminal, interpolar part	SPVI	10323	8856	10260	147001250	0.01%	0.01%	0.01%	0.01%
Lateral vestibular nucleus	LAV	1161	1772	555	17641250	0.01%	0.01%	0.00%	0.01%
arbor vitae	arb	50578	81743	41444	881583000	0.01%	0.01%	0.00%	0.01%
Interposed nucleus	IP	5651	11829	2564	107709500	0.01%	0.01%	0.00%	0.01%
Parasolitary nucleus	PAS	242	0	39	1663750	0.01%	0.00%	0.00%	0.01%
inferior cerebellar peduncle	icp	5956	7100	1780	93589250	0.01%	0.01%	0.00%	0.01%
vestibular nerve	vVIIIn	1162	2656	628	30077750	0.00%	0.01%	0.00%	0.00%
cerebral aqueduct	AQ	4586	2493	894	55956500	0.01%	0.00%	0.00%	0.00%
Central lobule	CENT	37823	25422	6072	489045500	0.01%	0.01%	0.00%	0.00%
Fastigial nucleus	FN	2883	3669	1242	63838250	0.00%	0.01%	0.00%	0.00%
Flocculus	FL	629	15636	3777	164955000	0.00%	0.01%	0.00%	0.00%
Paraflocculus	PFL	17975	38087	27367	697266500	0.00%	0.01%	0.00%	0.00%

Ventral cochlear nucleus	VCO	3083	6409	1606	94171250	0.00%	0.01%	0.00%	0.00%
Lingula (I)	LING	724	323	631	15226500	0.00%	0.00%	0.00%	0.00%
Simple lobule	SIM	8249	37591	21649	684476500	0.00%	0.01%	0.00%	0.00%
Paramedian lobule	PRM	18322	27198	7898	616368250	0.00%	0.00%	0.00%	0.00%
Ansiform lobule	AN	40136	61411	16468	1430332250	0.00%	0.00%	0.00%	0.00%
Copula pyramidis	COPY	8338	9259	5079	303139250	0.00%	0.00%	0.00%	0.00%
undefined part of the fourth ventricle	V4_0	3874	2623	800	98841000	0.00%	0.00%	0.00%	0.00%
Uvula (IX)	UVU	2977	11175	2918	275051250	0.00%	0.00%	0.00%	0.00%
Gracile nucleus	GR	415	3	94	8419000	0.00%	0.00%	0.00%	0.00%
cuneate fascicle	cuf	128	38	8	3062000	0.00%	0.00%	0.00%	0.00%
gracile fascicle	grf	8	0	11	404250	0.00%	0.00%	0.00%	0.00%
Declive (VI)	DEC	5998	10895	5072	470493000	0.00%	0.00%	0.00%	0.00%
Culmen	CUL	13475	19512	4532	875706250	0.00%	0.00%	0.00%	0.00%
lateral recess	V4r	820	1757	649	104093250	0.00%	0.00%	0.00%	0.00%
Nodulus (X)	NOD	1138	2260	1252	157113500	0.00%	0.00%	0.00%	0.00%
Subfornical organ	SFO	31	25	23	2780000	0.00%	0.00%	0.00%	0.00%
Pyramus (VIII)	PYR	1979	184	738	114696250	0.00%	0.00%	0.00%	0.00%
Folium-tuber vermis (VII)	FOTU	1331	832	676	115648250	0.00%	0.00%	0.00%	0.00%
Area postrema	AP	0	0	29	5699250	0.00%	0.00%	0.00%	0.00%
undefined part of the Cerebellum	CB_0	0	0	0	1250	0.00%	0.00%	0.00%	0.00%

Table S2. Excluded brain regions containing injection sites.

		Fluorescent labeled pixels			Brain region pixels	Fluorescence density value			
Region	Abbreviation	192979	193973	193974		192979	193973	193974	average
Lateral mammillary nucleus	LM	114595	172722	149756	4097500	2.80%	4.22%	3.65%	3.56%
Tuberomammillary nucleus, dorsal part	TMd	72803	9130	80128	1866250	3.90%	0.49%	4.29%	2.89%
Dorsal premammillary nucleus	PMd	469539	219614	161965	10592250	4.43%	2.07%	1.53%	2.68%
Ventral premammillary nucleus	PMv	529557	180497	168055	10957250	4.83%	1.65%	1.53%	2.67%
Tuberal nucleus	TU	1899513	1229619	1346597	58963250	3.22%	2.09%	2.28%	2.53%
Tuberomammillary nucleus, ventral part	TMv	89249	54095	77600	3688000	2.42%	1.47%	2.10%	2.00%
principal mammillary tract	pm	3115	2243	1490	117750	2.65%	1.90%	1.27%	1.94%
Supramammillary nucleus	SUM	580769	436926	409892	25251750	2.30%	1.73%	1.62%	1.88%
supramammillary decussation	smd	45539	34744	27981	1958500	2.33%	1.77%	1.43%	1.84%
Parasubthalamic nucleus	PSTN	139134	145974	123344	7747750	1.80%	1.88%	1.59%	1.76%
Medial mammillary nucleus	MM	1714974	1021572	745646	69972500	2.45%	1.46%	1.07%	1.66%
Lateral hypothalamic area	LHA	7342854	4832842	4748506	425986000	1.72%	1.13%	1.11%	1.32%
Posterior hypothalamic nucleus	PH	1557202	853653	917247	92188250	1.69%	0.93%	0.99%	1.20%
Preparasubthalamic nucleus	PST	28112	16389	17989	1791000	1.57%	0.92%	1.00%	1.16%
undefined part of the Hypothalamus	HY_0	6541959	3375949	3941859	454192500	1.44%	0.74%	0.87%	1.02%
mammillotegmental tract	mtg	127238	95557	80697	10544750	1.21%	0.91%	0.77%	0.96%
Periventricular hypothalamic nucleus, posterior part	PVp	202820	84615	182659	17140500	1.18%	0.49%	1.07%	0.91%
mammillary peduncle	mp	39061	15317	17122	2693250	1.45%	0.57%	0.64%	0.88%
Interfascicular nucleus raphe	IF	57285	31281	15718	4284500	1.34%	0.73%	0.37%	0.81%
Dorsomedial nucleus of the hypothalamus	DMH	695486	275038	501993	60594250	1.15%	0.45%	0.83%	0.81%
Ventromedial hypothalamic nucleus	VMH	606618	269732	283956	58347000	1.04%	0.46%	0.49%	0.66%
Interpeduncular nucleus	IPN	356403	323484	78775	44128000	0.81%	0.73%	0.18%	0.57%
Periventricular hypothalamic nucleus, intermediate part	PVi	122039	54247	45750	12939750	0.94%	0.42%	0.35%	0.57%

Table S3. Fluorescence fiber density in various brain regions of HDC-Arch-GFP^{TMN} mice.

Region	Abbreviation	Density Value	Density Grade
Cerebrum			
Cerebral cortex			
Cortical plate			
Isocortex			
Anterior cingulate area, dorsal part, layer 1	ACAd1	0.12%	moderate
Anterior cingulate area, dorsal part, layer 2/3	ACAd2/3	0.06%	few
Anterior cingulate area, dorsal part, layer 5	ACAd5	0.07%	few
Anterior cingulate area, dorsal part, layer 6a	ACAd6a	0.08%	few
Anterior cingulate area, dorsal part, layer 6b	ACAd6b	0.08%	few
Anterior cingulate area, ventral part, layer 1	ACAv1	0.14%	moderate
Anterior cingulate area, ventral part, layer 2/3	ACAv2/3	0.05%	few
Anterior cingulate area, ventral part, layer 5	ACAv5	0.07%	few
Anterior cingulate area, ventral part, 6a	ACAv6a	0.10%	moderate
Anterior cingulate area, ventral part, 6b	ACAv6b	0.09%	few
Agranular insular area, dorsal part, layer 1	AId1	0.11%	moderate
Agranular insular area, dorsal part, layer 2/3	AId2/3	0.13%	moderate
Agranular insular area, dorsal part, layer 5	AId5	0.15%	moderate
Agranular insular area, dorsal part, layer 6a	AId6a	0.12%	moderate
Agranular insular area, dorsal part, layer 6b	AId6b	0.10%	moderate
undefined part of the Agranular insular area, dorsal part	AId_0	0.16%	moderate
Agranular insular area, posterior part, layer 1	AIp1	0.12%	moderate
Agranular insular area, posterior part, layer 2/3	AIp2/3	0.15%	moderate
Agranular insular area, posterior part, layer 5	AIp5	0.12%	moderate
Agranular insular area, posterior part, layer 6a	AIp6a	0.12%	moderate
Agranular insular area, ventral part, layer 1	AIv1	0.11%	moderate
Agranular insular area, ventral part, layer 2/3	AIv2/3	0.14%	moderate
Agranular insular area, ventral part, layer 5	AIv5	0.12%	moderate
Agranular insular area, ventral part, layer 6a	AIv6a	0.11%	moderate
Agranular insular area, ventral part, layer 6b	AIv6b	0.06%	few
Dorsal auditory area, layer 1	AUDd1	0.07%	few
Dorsal auditory area, layer 2/3	AUDd2/3	0.04%	few
Dorsal auditory area, layer 4	AUDd4	0.04%	few
Dorsal auditory area, layer 5	AUDd5	0.05%	few
Dorsal auditory area, layer 6a	AUDd6a	0.06%	few
Dorsal auditory area, layer 6b	AUDd6b	0.06%	few
Primary auditory area, layer 1	AUDp1	0.09%	few
Primary auditory area, layer 2/3	AUDp2/3	0.06%	few
Primary auditory area, layer 4	AUDp4	0.05%	few
Primary auditory area, layer 5	AUDp5	0.07%	few
Primary auditory area, layer 6a	AUDp6a	0.05%	few
Primary auditory area, layer 6b	AUDp6b	0.07%	few
Posterior auditory area, layer 1	AUDpo1	0.09%	few
Posterior auditory area, layer 2/3	AUDpo2/3	0.08%	few
Posterior auditory area, layer 4	AUDpo4	0.10%	moderate
Posterior auditory area, layer 5	AUDpo5	0.09%	few
Posterior auditory area, layer 6a	AUDpo6a	0.06%	few
Posterior auditory area, layer 6b	AUDpo6b	0.05%	few

Ventral auditory area, layer 1	AUDv1	0.11%	moderate
Ventral auditory area, layer 2/3	AUDv2/3	0.08%	few
Ventral auditory area, layer 4	AUDv4	0.07%	few
Ventral auditory area, layer 5	AUDv5	0.08%	few
Ventral auditory area, layer 6a	AUDv6a	0.08%	few
Ventral auditory area, layer 6b	AUDv6b	0.11%	moderate
Ectorhinal area/Layer 1	ECT1	0.13%	moderate
Ectorhinal area/Layer 2/3	ECT2/3	0.14%	moderate
Ectorhinal area/Layer 5	ECT5	0.10%	moderate
Ectorhinal area/Layer 6a	ECT6a	0.11%	moderate
Ectorhinal area/Layer 6b	ECT6b	0.13%	moderate
undefined part of the Ectorhinal area	ECT_0	0.03%	few
Frontal pole, layer 1	FRP1	0.09%	few
Frontal pole, layer 2/3	FRP2/3	0.09%	few
Gustatory areas, layer 1	GU1	0.15%	moderate
Gustatory areas, layer 2/3	GU2/3	0.15%	moderate
Gustatory areas, layer 4	GU4	0.13%	moderate
Gustatory areas, layer 5	GU5	0.11%	moderate
Gustatory areas, layer 6a	GU6a	0.11%	moderate
Gustatory areas, layer 6b	GU6b	0.12%	moderate
Infralimbic area, layer 1	ILA1	0.21%	moderate
Infralimbic area, layer 2/3	ILA2/3	0.16%	moderate
Infralimbic area, layer 5	ILA5	0.15%	moderate
Infralimbic area, layer 6a	ILA6a	0.12%	moderate
Infralimbic area, layer 6b	ILA6b	0.10%	moderate
Primary motor area, Layer 1	MOp1	0.09%	few
Primary motor area, Layer 2/3	MOp2/3	0.06%	few
Primary motor area, Layer 5	MOp5	0.06%	few
Primary motor area, Layer 6a	MOp6a	0.07%	few
Primary motor area, Layer 6b	MOp6b	0.07%	few
undefined part of the Primary motor area	MOp_0	0.05%	few
Secondary motor area, layer 1	MOs1	0.10%	moderate
Secondary motor area, layer 2/3	MOs2/3	0.08%	few
Secondary motor area, layer 5	MOs5	0.07%	few
Secondary motor area, layer 6a	MOs6a	0.08%	few
Secondary motor area, layer 6b	MOs6b	0.08%	few
Orbital area, lateral part, layer 1	ORBl1	0.06%	few
Orbital area, lateral part, layer 2/3	ORBl2/3	0.07%	few
Orbital area, lateral part, layer 5	ORBl5	0.09%	few
Orbital area, lateral part, layer 6a	ORBl6a	0.08%	few
Orbital area, lateral part, layer 6b	ORBl6b	0.13%	moderate
Orbital area, medial part, layer 1	ORBm1	0.15%	moderate
Orbital area, medial part, layer 2/3	ORBm2/3	0.10%	moderate
Orbital area, medial part, layer 5	ORBm5	0.10%	moderate
Orbital area, medial part, layer 6a	ORBm6a	0.09%	few
Orbital area, ventrolateral part, layer 1	ORBvl1	0.08%	few
Orbital area, ventrolateral part, layer 2/3	ORBvl2/3	0.10%	moderate
Orbital area, ventrolateral part, layer 5	ORBvl5	0.09%	few
Orbital area, ventrolateral part, layer 6a	ORBvl6a	0.12%	moderate
Orbital area, ventrolateral part, layer 6b	ORBvl6b	0.08%	few

Perirhinal area, layer 1	PERI1	0.09%	few
Perirhinal area, layer 2/3	PERI2/3	0.11%	moderate
Perirhinal area, layer 5	PERI5	0.09%	few
Perirhinal area, layer 6a	PERI6a	0.12%	moderate
Perirhinal area, layer 6b	PERI6b	0.12%	moderate
Prelimbic area, layer 1	PL1	0.13%	moderate
Prelimbic area, layer 2/3	PL2/3	0.05%	few
Prelimbic area, layer 5	PL5	0.07%	few
Prelimbic area, layer 6a	PL6a	0.08%	few
Prelimbic area, layer 6b	PL6b	0.05%	few
Retrosplenial area, lateral agranular part, layer 1	RSPagl1	0.13%	moderate
Retrosplenial area, lateral agranular part, layer 2/3	RSPagl2/3	0.07%	few
Retrosplenial area, lateral agranular part, layer 5	RSPagl5	0.07%	few
Retrosplenial area, lateral agranular part, layer 6a	RSPagl6a	0.10%	moderate
Retrosplenial area, lateral agranular part, layer 6b	RSPagl6b	0.07%	few
Retrosplenial area, dorsal part, layer 1	RSPd1	0.09%	few
Retrosplenial area, dorsal part, layer 2/3	RSPd2/3	0.08%	few
Retrosplenial area, dorsal part, layer 4	RSPd4	0.04%	few
Retrosplenial area, dorsal part, layer 5	RSPd5	0.07%	few
Retrosplenial area, dorsal part, layer 6a	RSPd6a	0.09%	few
Retrosplenial area, dorsal part, layer 6b	RSPd6b	0.09%	few
Retrosplenial area, ventral part, layer 1	RSPv1	0.14%	moderate
Retrosplenial area, ventral part, layer 2/3	RSPv2/3	0.10%	moderate
Retrosplenial area, ventral part, layer 5	RSPv5	0.07%	few
Retrosplenial area, ventral part, layer 6a	RSPv6a	0.08%	few
Retrosplenial area, ventral part, layer 6b	RSPv6b	0.09%	few
Primary somatosensory area, barrel field, layer 1	SSp-bfd1	0.07%	few
Primary somatosensory area, barrel field, layer 2/3	SSp-bfd2/3	0.03%	few
Primary somatosensory area, barrel field, layer 4	SSp-bfd4	0.03%	few
Primary somatosensory area, barrel field, layer 5	SSp-bfd5	0.04%	few
Primary somatosensory area, barrel field, layer 6a	SSp-bfd6a	0.05%	few
Primary somatosensory area, barrel field, layer 6b	SSp-bfd6b	0.04%	few
Primary somatosensory area, lower limb, layer 1	SSp-ll1	0.12%	moderate
Primary somatosensory area, lower limb, layer 2/3	SSp-ll2/3	0.07%	few
Primary somatosensory area, lower limb, layer 4	SSp-ll4	0.05%	few
Primary somatosensory area, lower limb, layer 5	SSp-ll5	0.05%	few
Primary somatosensory area, lower limb, layer 6a	SSp-ll6a	0.07%	few
Primary somatosensory area, lower limb, layer 6b	SSp-ll6b	0.08%	few
Primary somatosensory area, mouth, layer 1	SSp-m1	0.07%	few
Primary somatosensory area, mouth, layer 2/3	SSp-m2/3	0.04%	few
Primary somatosensory area, mouth, layer 4	SSp-m4	0.06%	few
Primary somatosensory area, mouth, layer 5	SSp-m5	0.06%	few
Primary somatosensory area, mouth, layer 6a	SSp-m6a	0.07%	few
Primary somatosensory area, mouth, layer 6b	SSp-m6b	0.06%	few
Primary somatosensory area, nose, layer 1	SSp-n1	0.06%	few
Primary somatosensory area, nose, layer 2/3	SSp-n2/3	0.02%	few
Primary somatosensory area, nose, layer 4	SSp-n4	0.03%	few
Primary somatosensory area, nose, layer 5	SSp-n5	0.04%	few
Primary somatosensory area, nose, layer 6a	SSp-n6a	0.05%	few
Primary somatosensory area, nose, layer 6b	SSp-n6b	0.06%	few

Primary somatosensory area, trunk, layer 1	SSp-tr1	0.12%	moderate
Primary somatosensory area, trunk, layer 2/3	SSp-tr2/3	0.05%	few
Primary somatosensory area, trunk, layer 4	SSp-tr4	0.03%	few
Primary somatosensory area, trunk, layer 5	SSp-tr5	0.06%	few
Primary somatosensory area, trunk, layer 6a	SSp-tr6a	0.11%	moderate
Primary somatosensory area, trunk, layer 6b	SSp-tr6b	0.11%	moderate
Primary somatosensory area, upper limb, layer 1	SSp-ul1	0.09%	few
Primary somatosensory area, upper limb, layer 2/3	SSp-ul2/3	0.04%	few
Primary somatosensory area, upper limb, layer 4	SSp-ul4	0.04%	few
Primary somatosensory area, upper limb, layer 5	SSp-ul5	0.05%	few
Primary somatosensory area, upper limb, layer 6a	SSp-ul6a	0.06%	few
Primary somatosensory area, upper limb, layer 6b	SSp-ul6b	0.06%	few
Primary somatosensory area, unassigned, layer 1	SSp-un1	0.10%	moderate
Primary somatosensory area, unassigned, layer 2/3	SSp-un2/3	0.03%	few
Primary somatosensory area, unassigned, layer 4	SSp-un4	0.03%	few
Primary somatosensory area, unassigned, layer 5	SSp-un5	0.04%	few
Primary somatosensory area, unassigned, layer 6a	SSp-un6a	0.05%	few
Primary somatosensory area, unassigned, layer 6b	SSp-un6b	0.07%	few
Supplemental somatosensory area, layer 1	SSs1	0.08%	few
Supplemental somatosensory area, layer 2/3	SSs2/3	0.05%	few
Supplemental somatosensory area, layer 4	SSs4	0.06%	few
Supplemental somatosensory area, layer 5	SSs5	0.05%	few
Supplemental somatosensory area, layer 6a	SSs6a	0.08%	few
Supplemental somatosensory area, layer 6b	SSs6b	0.09%	few
Temporal association areas, layer 1	TEa1	0.11%	moderate
Temporal association areas, layer 2/3	TEa2/3	0.10%	moderate
Temporal association areas, layer 4	TEa4	0.10%	moderate
Temporal association areas, layer 5	TEa5	0.09%	few
Temporal association areas, layer 6a	TEa6a	0.10%	moderate
Temporal association areas, layer 6b	TEa6b	0.11%	moderate
Anterior area, layer 1	VISa1	0.08%	few
Anterior area, layer 2/3	VISa2/3	0.02%	few
Anterior area, layer 4	VISa4	0.04%	few
Anterior area, layer 5	VISa5	0.05%	few
Anterior area, layer 6a	VISa6a	0.08%	few
Anterior area, layer 6b	VISa6b	0.08%	few
Anterolateral visual area, layer 1	VISal1	0.09%	few
Anterolateral visual area, layer 2/3	VISal2/3	0.05%	few
Anterolateral visual area, layer 4	VISal4	0.04%	few
Anterolateral visual area, layer 5	VISal5	0.06%	few
Anterolateral visual area, layer 6a	VISal6a	0.07%	few
Anterolateral visual area, layer 6b	VISal6b	0.07%	few
Anteromedial visual area, layer 1	VISam1	0.14%	moderate
Anteromedial visual area, layer 2/3	VISam2/3	0.05%	few
Anteromedial visual area, layer 4	VISam4	0.04%	few
Anteromedial visual area, layer 5	VISam5	0.05%	few
Anteromedial visual area, layer 6a	VISam6a	0.10%	moderate
Anteromedial visual area, layer 6b	VISam6b	0.10%	moderate
Visceral area, layer 1	VISC1	0.17%	moderate
Visceral area, layer 2/3	VISC2/3	0.15%	moderate

Visceral area, layer 4	VISC4	0.12%	moderate
Visceral area, layer 5	VISC5	0.10%	moderate
Visceral area, layer 6a	VISC6a	0.11%	moderate
Visceral area, layer 6b	VISC6b	0.10%	moderate
Lateral visual area, layer 1	VISl1	0.08%	few
Lateral visual area, layer 2/3	VISl2/3	0.04%	few
Lateral visual area, layer 4	VISl4	0.04%	few
Lateral visual area, layer 5	VISl5	0.06%	few
Lateral visual area, layer 6a	VISl6a	0.07%	few
Lateral visual area, layer 6b	VISl6b	0.06%	few
Laterointermediate area, layer 1	VISli1	0.09%	few
Laterointermediate area, layer 2/3	VISli2/3	0.05%	few
Laterointermediate area, layer 4	VISli4	0.04%	few
Laterointermediate area, layer 5	VISli5	0.06%	few
Laterointermediate area, layer 6a	VISli6a	0.07%	few
Laterointermediate area, layer 6b	VISli6b	0.04%	few
Primary visual area, layer 1	VISp1	0.10%	moderate
Primary visual area, layer 2/3	VISp2/3	0.04%	few
Primary visual area, layer 4	VISp4	0.03%	few
Primary visual area, layer 5	VISp5	0.05%	few
Primary visual area, layer 6a	VISp6a	0.07%	few
Primary visual area, layer 6b	VISp6b	0.08%	few
Posterolateral visual area, layer 1	VISpl1	0.07%	few
Posterolateral visual area, layer 2/3	VISpl2/3	0.07%	few
Posterolateral visual area, layer 4	VISpl4	0.05%	few
Posterolateral visual area, layer 5	VISpl5	0.06%	few
Posterolateral visual area, layer 6a	VISpl6a	0.07%	few
Posterolateral visual area, layer 6b	VISpl6b	0.19%	moderate
posteromedial visual area, layer 1	VISpm1	0.12%	moderate
posteromedial visual area, layer 2/3	VISpm2/3	0.05%	few
posteromedial visual area, layer 4	VISpm4	0.04%	few
posteromedial visual area, layer 5	VISpm5	0.06%	few
posteromedial visual area, layer 6a	VISpm6a	0.08%	few
posteromedial visual area, layer 6b	VISpm6b	0.14%	moderate
Postrhinal area, layer 1	VISpor1	0.11%	moderate
Postrhinal area, layer 2/3	VISpor2/3	0.11%	moderate
Postrhinal area, layer 4	VISpor4	0.06%	few
Postrhinal area, layer 5	VISpor5	0.08%	few
Postrhinal area, layer 6a	VISpor6a	0.08%	few
Postrhinal area, layer 6b	VISpor6b	0.10%	moderate
Rostrolateral area, layer 1	VISrl1	0.06%	few
Rostrolateral area, layer 2/3	VISrl2/3	0.04%	few
Rostrolateral area, layer 4	VISrl4	0.03%	few
Rostrolateral area, layer 5	VISrl5	0.04%	few
Rostrolateral area, layer 6a	VISrl6a	0.06%	few
Rostrolateral area, layer 6b	VISrl6b	0.06%	few
undefined part of the Retrosplenial area, lateral agranular part	RSPagl_0	0.05%	few
undefined part of the Isocortex	Isocortex_0	0.06%	few
Olfactory areas			
Accessory olfactory bulb, glomerular layer	AOBgl	0.04%	few

Accessory olfactory bulb, granular layer	AOBgr	0.02%	few
Accessory olfactory bulb, mitral layer	AOBmi	0.02%	few
Anterior olfactory nucleus	AON	0.09%	few
Cortical amygdalar area, anterior part	COAa	0.11%	moderate
Cortical amygdalar area, posterior part	COAp	0.11%	moderate
Dorsal peduncular area	DP	0.31%	moderate
Main olfactory bulb	MOB	0.03%	few
Nucleus of the lateral olfactory tract, molecular layer	NLOT1	0.13%	moderate
Nucleus of the lateral olfactory tract, layer 3	NLOT3	0.15%	moderate
Piriform-amygdalar area	PAA	0.08%	few
Piriform area	PIR	0.06%	few
Postpiriform transition area	TR	0.14%	moderate
Taenia tecta	TT	0.27%	moderate
undefined part of the Olfactory areas	OLF_0	0.10%	moderate
Hippocampal formation			
Field CA1	CA1	0.02%	few
Field CA2	CA2	0.02%	few
Field CA3	CA3	0.02%	few
Dentate gyrus, molecular layer	DG-mo	0.01%	few
Dentate gyrus, polymorph layer	DG-po	0.06%	few
Dentate gyrus, granule cell layer	DG-sg	0.05%	few
Entorhinal area, lateral part	ENTl	0.09%	few
Entorhinal area, medial part, dorsal zone	ENTm	0.09%	few
Entorhinal area, medial part, ventral zone	ENTmv	0.18%	moderate
Fasciola cinerea	FC	0.09%	few
Induseum griseum	IG	0.29%	moderate
Parasubiculum	PAR	0.10%	moderate
Postsubiculum	POST	0.08%	few
Presubiculum	PRE	0.07%	few
Subiculum	SUB	0.07%	few
undefined part of the Hippocampal formation	HPF_0	0.08%	few
Cortical subplate			
Basolateral amygdalar nucleus, anterior part	BLAa	0.08%	few
Basolateral amygdalar nucleus, posterior part	BLAp	0.07%	few
Basolateral amygdalar nucleus, ventral part	BLAv	0.10%	moderate
Basomedial amygdalar nucleus	BMA	0.15%	moderate
Claustrum	CLA	0.11%	moderate
Endopiriform nucleus, dorsal part	EPd	0.11%	moderate
Endopiriform nucleus, ventral part	EPv	0.12%	moderate
Posterior amygdalar nucleus	PA	0.24%	moderate
Lateral amygdalar nucleus	LA	0.06%	few
undefined part of the Cortical subplate	CTXsp_0	0.12%	moderate
Cerebral nuclei			
Striatum			
Anterior amygdalar area	AAA	0.26%	moderate
Nucleus accumbens	ACB	0.26%	moderate
Bed nucleus of the accessory olfactory tract	BA	0.27%	moderate
Central amygdalar nucleus	CEA	0.33%	moderate
Caudoputamen	CP	0.07%	few
Fundus of striatum	FS	0.23%	moderate

Intercalated amygdalar nucleus	IA	0.18%	moderate
Lateral septal nucleus, caudal (caudodorsal) part	LSc	0.14%	moderate
Lateral septal nucleus, rostral (rostroventral) part	LSr	0.51%	dense
Lateral septal nucleus, ventral part	LSv	0.42%	moderate
Medial amygdalar nucleus	MEA	0.23%	moderate
Olfactory tubercle	OT	0.21%	moderate
undefined part of the Striatum	STR_0	0.27%	moderate
undefined part of the Striatum-like amygdalar nuclei	sAMY_0	0.19%	moderate
Pallidum			
Bed nucleus of the anterior commissure	BAC	0.31%	moderate
Bed nuclei of the stria terminalis	BST	0.52%	dense
Globus pallidus, external segment	GPe	0.11%	moderate
Globus pallidus, internal segment	GPi	0.14%	moderate
Magnocellular nucleus	MA	0.45%	moderate
Medial septal nucleus	MS	0.83%	dense
Substantia innominata	SI	0.50%	dense
Triangular nucleus of septum	TRS	0.22%	moderate
Diagonal band nucleus	NDB	1.19%	dense
undefined part of the Pallidum	PAL_0	0.45%	moderate
Brain stem			
Interbrain			
Thalamus			
Anterodorsal nucleus	AD	1.21%	dense
Anteromedial nucleus	AM	0.44%	moderate
Anteroventral nucleus of thalamus	AV	0.43%	moderate
Central lateral nucleus of the thalamus	CL	0.08%	few
Central medial nucleus of the thalamus	CM	0.27%	moderate
Interanterodorsal nucleus of the thalamus	IAD	0.39%	moderate
Interanteromedial nucleus of the thalamus	IAM	0.32%	moderate
Intergeniculate leaflet of the lateral geniculate complex	IGL	0.07%	few
Intermediodorsal nucleus of the thalamus	IMD	0.35%	moderate
Lateral dorsal nucleus of thalamus	LD	0.07%	few
Dorsal part of the lateral geniculate complex	LGd	0.06%	few
Ventral part of the lateral geniculate complex	LGv	0.10%	moderate
Lateral habenula	LH	0.19%	moderate
Lateral posterior nucleus of the thalamus	LP	0.08%	few
Mediodorsal nucleus of thalamus	MD	0.15%	moderate
Medial geniculate complex	MG	0.13%	moderate
Medial habenula	MH	0.09%	few
Paracentral nucleus	PCN	0.10%	moderate
Parafascicular nucleus	PF	0.21%	moderate
Posterior complex of the thalamus	PO	0.05%	few
Posterior limiting nucleus of the thalamus	POL	0.17%	moderate
Peripeduncular nucleus	PP	0.50%	dense
Parataenial nucleus	PT	0.23%	moderate
Paraventricular nucleus of the thalamus	PVT	0.32%	moderate
Nucleus of reuniens	RE	0.49%	moderate
Rhomboid nucleus	RH	0.37%	moderate
Reticular nucleus of the thalamus	RT	0.06%	few
Suprageniculate nucleus	SGN	0.09%	few

Submedial nucleus of the thalamus	SMT	0.25%	moderate
Subparafascicular area	SPA	0.51%	dense
Subparafascicular nucleus, magnocellular part	SPFm	0.50%	dense
Subparafascicular nucleus, parvicellular part	SPFp	0.30%	moderate
Subgeniculate nucleus	SubG	0.05%	few
Ventral anterior-lateral complex of the thalamus	VAL	0.05%	few
Ventral medial nucleus of the thalamus	VM	0.20%	moderate
Ventral posterolateral nucleus of the thalamus	VPL	0.02%	few
Ventral posterolateral nucleus of the thalamus, parvicellular part	VPLpc	0.19%	moderate
Ventral posteromedial nucleus of the thalamus	VPM	0.04%	few
Ventral posteromedial nucleus of the thalamus, parvicellular part	VPMpc	0.29%	moderate
Perireunensis nucleus	PR	0.42%	moderate
undefined part of the Thalamus	TH_0	0.22%	moderate
Hypothalamus			
Anterodorsal preoptic nucleus	ADP	0.68%	dense
Anterior hypothalamic nucleus	AHN	0.61%	dense
Arcuate hypothalamic nucleus	ARH	0.47%	moderate
Accessory supraoptic group	ASO	0.46%	moderate
Anteroventral preoptic nucleus	AVP	1.58%	dense
Anteroventral periventricular nucleus	AVPV	0.76%	dense
Fields of Forel	FF	0.27%	moderate
Lateral preoptic area	LPO	0.93%	dense
Median preoptic nucleus	MEPO	1.04%	dense
Medial preoptic nucleus	MPN	0.70%	dense
Medial preoptic area	MPO	1.07%	dense
Vascular organ of the lamina terminalis	OV	0.44%	moderate
Posterodorsal preoptic nucleus	PD	0.67%	dense
Parastrial nucleus	PS	1.28%	dense
Periventricular hypothalamic nucleus, anterior part	PVa	0.29%	moderate
Paraventricular hypothalamic nucleus	PVH	0.54%	dense
Paraventricular hypothalamic nucleus, descending division	PVHd	0.38%	moderate
Periventricular hypothalamic nucleus, preoptic part	PVpo	0.64%	dense
Retrochiasmatic area	RCH	1.21%	dense
Subparaventricular zone	SBPV	0.67%	dense
Suprachiasmatic nucleus	SCH	0.80%	dense
Subfornical organ	SFO	0.00%	few
Supraoptic nucleus	SO	0.87%	dense
Subthalamic nucleus	STN	0.25%	moderate
Ventrolateral preoptic nucleus	VLPO	1.19%	dense
undefined part of the Zona incerta	ZI_0	0.21%	moderate
Midbrain			
sensory related			
Inferior colliculus	IC	0.05%	few
Midbrain trigeminal nucleus	MEV	0.13%	moderate
Nucleus of the brachium of the inferior colliculus	NB	0.23%	moderate
Parabigeminal nucleus	PBG	0.08%	few
Nucleus sagulum	SAG	0.07%	few
Superior colliculus, optic layer	SCop	0.19%	moderate
Superior colliculus, superficial gray layer	SCsg	0.17%	moderate
motor related			

Anterior pretectal nucleus	APN	0.10%	moderate
Anterior tegmental nucleus	AT	0.26%	moderate
Cuneiform nucleus	CUN	0.08%	few
Edinger-Westphal nucleus	EW	0.61%	dense
Oculomotor nucleus	III	0.05%	few
Interstitial nucleus of Cajal	INC	0.34%	moderate
Intermediate reticular nucleus	IRN	0.02%	few
Inferior salivatory nucleus	ISN	0.05%	few
Trochlear nucleus	IV	0.16%	moderate
Lateral terminal nucleus of the accessory optic tract	LT	0.33%	moderate
Medial pretectal area	MPT	0.22%	moderate
Midbrain reticular nucleus	MRN	0.26%	moderate
Nucleus of Darkschewitsch	ND	0.23%	moderate
Nucleus of the optic tract	NOT	0.12%	moderate
Nucleus of the posterior commissure	NPC	0.19%	moderate
Olivary pretectal nucleus	OP	0.20%	moderate
Posterior pretectal nucleus	PPT	0.17%	moderate
Precommissural nucleus	PRC	0.25%	moderate
Red nucleus	RN	0.14%	moderate
Midbrain reticular nucleus, retrorubral area	RR	0.29%	moderate
Superior colliculus, motor related, deep gray layer	SCdg	0.11%	moderate
Superior colliculus, motor related, deep white layer	SCdw	0.12%	moderate
Superior colliculus, motor related, intermediate gray layer, sublayer a	SCig-a	0.23%	moderate
Superior colliculus, motor related, intermediate gray layer, sublayer b	SCig-b	0.19%	moderate
Superior colliculus, motor related, intermediate gray layer, sublayer c	SCig-c	0.20%	moderate
Superior colliculus, motor related, intermediate white layer	SCiw	0.11%	moderate
Substantia nigra, reticular part	SNr	0.16%	moderate
Ventral tegmental area	VTA	0.81%	dense
Ventral tegmental nucleus	VTN	0.32%	moderate
undefined part of the Superior colliculus, motor related, intermediate gray layer	SCig_0	0.16%	moderate
undefined part of the Periaqueductal gray	PAG_0	0.24%	moderate
behavioral state related			
Central linear nucleus raphe	CLI	0.49%	moderate
Dorsal nucleus raphe	DR	0.38%	moderate
Pedunculopontine nucleus	PPN	0.11%	moderate
Rostral linear nucleus raphe	RL	1.11%	dense
Substantia nigra, compact part	SNc	0.36%	moderate
undefined part of the Midbrain	MB_0	0.20%	moderate
Hindbrain			
Pons			
Superior central nucleus raphe	CS	0.14%	moderate
Dorsal tegmental nucleus	DTN	0.33%	moderate
Nucleus of the lateral lemniscus	NLL	0.04%	few
Parabrachial nucleus	PB	0.11%	moderate
Pontine central gray	PCG	0.11%	moderate
Pontine gray	PG	0.05%	few
Superior olivary complex, periolivary region	POR	0.01%	few
Pontine reticular nucleus, caudal part	PRNc	0.03%	few
Pontine reticular nucleus	PRNr	0.06%	few

Principal sensory nucleus of the trigeminal	PSV	0.01%	few
Nucleus raphe pontis	RPO	0.08%	few
Supragenual nucleus	SG	0.06%	few
Subceruleus nucleus	SLC	0.08%	few
Sublaterodorsal nucleus	SLD	0.09%	few
Superior olivary complex, lateral part	SOCl	0.01%	few
Superior olivary complex, medial part	SOCm	0.01%	few
Supratrigeminal nucleus	SUT	0.04%	few
Tegmental reticular nucleus	TRN	0.07%	few
Motor nucleus of trigeminal	V	0.02%	few
Barrington's nucleus	B	0.14%	moderate
Locus ceruleus	LC	0.09%	few
Laterodorsal tegmental nucleus	LDT	0.10%	moderate
Nucleus incertus	NI	0.10%	moderate
undefined part of the Pons	P_0	0.05%	few
Medulla			
Accessory facial motor nucleus	ACVII	0.03%	few
Nucleus ambiguus, dorsal division	AMBd	0.05%	few
Nucleus ambiguus, ventral division	AMBv	0.01%	few
Area postrema	AP	0.00%	few
Cuneate nucleus	CU	0.01%	few
Dorsal cochlear nucleus	DCO	0.01%	few
Dorsal motor nucleus of the vagus nerve	DMX	0.02%	few
External cuneate nucleus	ECU	0.01%	few
Gracile nucleus	GR	0.00%	few
Gigantocellular reticular nucleus	GRN	0.01%	few
Infracerebellar nucleus	ICB	0.01%	few
Medullary reticular nucleus, dorsal part	MDRNd	0.02%	few
Medullary reticular nucleus, ventral part	MDRNv	0.01%	few
Nucleus of the trapezoid body	NTB	0.03%	few
Nucleus of the solitary tract	NTS	0.02%	few
Parvicellular reticular nucleus	PARN	0.03%	few
Parasolitary nucleus	PAS	0.01%	few
Paragigantocellular reticular nucleus, dorsal part	PGRNd	0.01%	few
Paragigantocellular reticular nucleus, lateral part	PGRNl	0.03%	few
Parapyramidal nucleus	PPY	0.03%	few
Nucleus prepositus	PRP	0.01%	few
Nucleus raphe magnus	RM	0.07%	few
Nucleus raphe obscurus	RO	0.04%	few
Nucleus raphe pallidus	RPA	0.02%	few
Spinal vestibular nucleus	SPIV	0.01%	few
Spinal nucleus of the trigeminal, caudal part	SPVC	0.01%	few
Spinal nucleus of the trigeminal, interpolar part	SPVI	0.01%	few
Spinal nucleus of the trigeminal, oral part	SPVO	0.01%	few
Superior vestibular nucleus	SUV	0.01%	few
Ventral cochlear nucleus	VCO	0.00%	few
Abducens nucleus	VI	0.01%	few
Facial motor nucleus	VII	0.02%	few
Nucleus x	x	0.02%	few
Hypoglossal nucleus	XII	0.04%	few

Nucleus y	y	0.02%	few
Inferior olivary complex	IO	0.05%	few
Lateral vestibular nucleus	LAV	0.01%	few
Linear nucleus of the medulla	LIN	0.01%	few
Lateral reticular nucleus	LRN	0.02%	few
Magnocellular reticular nucleus	MARN	0.03%	few
Medial vestibular nucleus	MV	0.01%	few
Nucleus of Roller	NR	0.02%	few
undefined part of the Medulla	MY_0	0.02%	few
Cerebellum			
Cerebellar cortex			
Central lobule	CENT	0.00%	few
Copula pyramidis	COPY	0.00%	few
Culmen	CUL	0.00%	few
Declive (VI)	DEC	0.00%	few
Flocculus	FL	0.00%	few
Folium-tuber vermis (VII)	FOTU	0.00%	few
Lingula (I)	LING	0.00%	few
Nodulus (X)	NOD	0.00%	few
Paraflocculus	PFL	0.00%	few
Paramedian lobule	PRM	0.00%	few
Pyramus (VIII)	PYR	0.00%	few
Simple lobule	SIM	0.00%	few
Uvula (IX)	UVU	0.00%	few
Ansiform lobule	AN	0.00%	few
Cerebellar nuclei			
Dentate nucleus	DN	0.01%	few
Fastigial nucleus	FN	0.00%	few
Interposed nucleus	IP	0.01%	few
undefined part of the Cerebellum	CB_0	0.00%	few
fiber tracts			
cranial nerves			
anterior commissure, olfactory limb	aco	0.13%	moderate
brachium of the inferior colliculus	bic	0.12%	moderate
inferior colliculus commissure	cic	0.10%	moderate
cuneate fascicle	cuf	0.00%	few
gracile fascicle	grf	0.00%	few
trochlear nerve	IVn	0.23%	moderate
lateral lemniscus	ll	0.05%	few
lateral olfactory tract, body	lot	0.02%	few
medial lemniscus	ml	0.18%	moderate
medial longitudinal fascicle	mlf	0.07%	few
motor root of the trigeminal nerve	moV	0.03%	few
midbrain tract of the trigeminal nerve	mtV	0.10%	moderate
optic chiasm	och	0.25%	moderate
olfactory nerve layer of main olfactory bulb	onl	0.01%	few
optic tract	opt	0.35%	moderate
posterior commissure	pc	0.17%	moderate
spinal tract of the trigeminal nerve	sptV	0.01%	few
trapezoid body	tb	0.02%	few

solitary tract	ts	0.03%	few
facial nerve	VIIn	0.01%	few
vomeronasal nerve	von	0.01%	few
vestibular nerve	vVIIIn	0.00%	few
undefined part of the optic nerve	IIn_0	0.03%	few
cerebellum related fiber tracts			
arbor vitae	arb	0.01%	few
inferior cerebellar peduncle	icp	0.01%	few
middle cerebellar peduncle	mcp	0.02%	few
superior cerebelar peduncles	scp	0.08%	few
lateral forebrain bundle system			
corpus callosum	cc	0.09%	few
cerebal peduncle	cpd	0.11%	moderate
external medullary lamina of the thalamus	em	0.03%	few
internal medullary lamina of the thalamus	im	0.24%	moderate
internal capsule	int	0.08%	few
pyramid	py	0.03%	few
undefined part of the corticospinal tract	cst_0	0.04%	few
extrapyramidal fiber systems			
doral tegmental decussation	dtd	0.60%	dense
ventral tegmental decussation	vtd	0.64%	dense
undefined part of the tectospinal pathway	tsp_0	0.13%	moderate
undefined part of the rubrospinal tract	rust_0	0.08%	few
medial forebrain bundle system			
anterior commissure, temporal limb	act	0.32%	moderate
alveus	alv	0.07%	few
amygdalar capsule	amc	0.08%	few
cingulum bundle	cing	0.10%	moderate
dorsal fornix	df	0.59%	dense
dorsal hippocampal commissure	dhc	0.09%	few
fimbria	fi	0.08%	few
fasciculus retroflexus	fr	0.33%	moderate
columns of the fornix	fx	0.64%	dense
habenular commissure	hbc	0.08%	few
mammillothalamic tract	mtt	1.39%	dense
stria medullaris	sm	0.19%	moderate
stria terminalis	st	0.11%	moderate
ventral hippocampal commissure	vhc	0.04%	few
undefined part of the fiber tracts	fiber tracts_0	0.08%	few
Ventricular system			
cerebral aqueduct	AQ	0.00%	few
central canal, spinal cord/medulla	c	0.03%	few
third ventricle	V3	0.03%	few
lateral recess	V4r	0.00%	few
lateral ventricle	VL	0.01%	few
undefined part of the ventricular systems	VS_0	0.06%	few
undefined part of the fourth ventricle	V4_0	0.00%	few

Table S4. Histaminergic fiber density significantly different from previous studies.

	Our study	Naoyuki I., et al., (0-5)	Panula P., et al., (1-4)
molecular layer of the Dentate gyrus (DG-mo)	0.01%	1	2
other parts of the Dentate gyrus	0.05%	1	2
the Fimbria of the hippocampus (fi)	0.08%	2-3	3
the Basolateral amygdalar nucleus (BLA)	0.08%	3	1-2
the Central amygdalar nucleus (CeA)	0.33%	4	1-2
the Caudoputamen (CP)	0.07%	2-3	1-2
the Anterodorsal nucleus (AD)	1.21%	3-4	2
the Lateral dorsal nucleus of thalamus (LD)	0.07%	3	N/A
the Mediodorsal nucleus of thalamus (MD)	0.15%	3-4	N/A
the Zona incerta (ZI)	0.21%	1	N/A
the Substantia nigra (SN)	SNc:0.36%, SNr:0.16%	1	3
the Dorsal nucleus raphe (DR)	0.38%	0	2

Density grade in the study of Naoyuki I., et al.: 0 no fluorescence, 1 very low density, 2 low density. 3 medium density, 4 high density, 5 very high density.

Density grade in the study of Panula P., et al.: 1 very low density, 2 low density, 3 moderate density, 4 high density.

SI References

1. Gong H*, et al.* (2016) High-throughput dual-colour precision imaging for brain-wide connectome with cytoarchitectonic landmarks at the cellular level. *Nat Commun* 7:12142.