

ALLEN Human Brain Atlas

TECHNICAL WHITE PAPER: CASE QUALIFICATION AND DONOR PROFILES

The case review process described here was employed for three components of the ALLEN **Human Brain Atlas**: (1) the Microarray Survey; (2) the Neurotransmitter Study; and (3) the Subcortex Study. Data for all other components of the Allen Human Brain Atlas were generated using banked tissue that underwent a separate screening process (see *In Situ Hybridization in the Allen Human Brain Atlas* white paper).

In general, postmortem tissue from males and females between 18-68 years of age and no known history of neuropsychiatric or neurological conditions ('control' cases) were eligible for inclusion in the Microarray Survey, Neurotransmitter Study, and Subcortex Study components of the Allen Human Brain Atlas. Key conditions for exclusion were:

- Brain injury or disease
- Epilepsy
- Drug/alcohol dependency
- > 1 hour on ventilator
- Positive for infectious disease
- Prion disease
- Chronic renal failure
- Cancer deaths
- Brain cancer
- Time since death > 30 hours

Brain tissue, cerebrospinal fluid and blood samples were collected after obtaining informed consent from decedent's next-of-kin. Institutional Review Board (IRB) review and approval was obtained for collection of tissue and non-identifying case information at the tissue banks and repositories that provided tissue for this project. Following tissue collection and freezing, additional tests and quality measures were performed to ensure the tissue and RNA met quality control (QC) criteria, and to rule out any previously undetected conditions incompatible with a 'control' diagnosis.

A Case Review Committee (CRC) of internal and external advisors reviewed all data and approved cases for inclusion in each study. The schematic in Figure 1 shows a timeline of formal CRC activities in relation to availability of screening data. A summary of screening tests and quality control measures and criteria is provided in Table 1. Specific donor profiles are provided in subsequent tables.

For additional detailed methodological information regarding these studies, please access the following technical white papers:

- Microarray Survey in the Allen Human Brain Atlas
- In Situ Hybridization in the Allen Human Brain Atlas

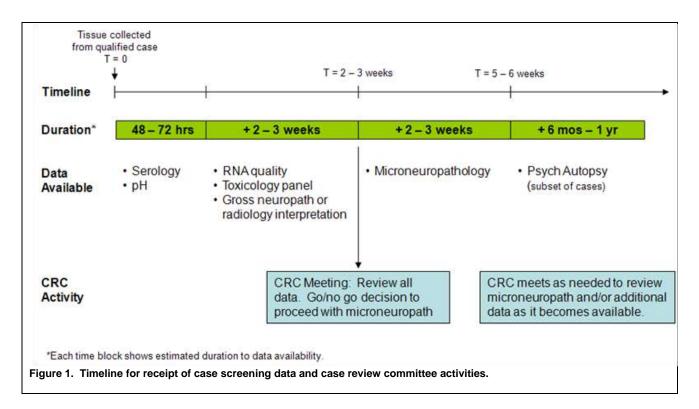


Table 1. Summary of case screens and quality control tests and criteria.

Test	Description	Passing Criteria
Serology	A safety precaution to evaluate blood serum for presence of antigens or antibodies for Hepatitis B, Hepatitis C or HIV1/HIV2.	Negative for all three tests.
pH	Measured in brain tissue homogenate and/or cerebrospinal fluid (CSF). Low pH levels are correlated with poor RNA quality.	pH ≥ 6.0
RNA quality	Assessed using Bioanalyzer-generated RNA Integrity Number (RIN) and Bioanalyzer electropherograms for 18s/28s ratios.	RIN ≥ 6.0, RNA amount ≥ 50ng, no obvious RNA degradation, no noticeable DNA or other contamination.
Toxicology	Postmortem blood is assessed for presence and concentration (when possible) of a broad range of therapeutic drugs and drugs with abuse potential.	Absence of drugs prescribed for neuropsychiatric disorders; absence of drugs at toxicologically significant levels (as reported by testing lab).
Gross neuropathology	Assessment of brain for gross morphological abnormalities indicating neuropathology (e.g. stroke, tumor, atrophy) by a radiologist using MRI data or by a pathologist using digital images of fresh brain sections.	'Normal' assessment by consulting radiologist or pathologist.
Microneuropathology	Analysis of histologically stained tissue sections to assess microscopic indications of pathology such as local ischemic events, abnormal levels of amyloid plaques or neurofibrillary tangles, or indications of abnormal cell morphology.	'Normal' assessment by consulting pathologist.

Table 2. Donor profile: H0351.1009.

Table 2. Donor profile: H0351.1009.						
Donor H0351.1009 – Micros	array Survey, Neur	otransmitter Study (ISH)				
Tissue Receipt Date	2/8/2011					
Sex	Male	Male				
Age	57 years	57 years				
Race/Ethnicity	Caucasian					
Handedness	Cross-dominant	Cross-dominant				
Postmortem Interval	25.5 hours (estir	nated time of death to time that t	issue is frozen)			
Serology	Pass					
Toxicology	Positive for caffe significant	eine and theobromine, at levels u	sually not toxicologically			
Tissue pH	6.9 (measured in	r frontal pole)				
RNA Quality	Pass	Region Tested	RIN value (Mean ± SD)			
		Frontal poles	6.4 ± 0.4			
		Occipital poles	6.1 ± 0.8			
		Cerebellum (left & right)	7.1 ± 0.5			
		Brainstem	5.6 ± 1.0			
Neuropathology	Gross pathology	: NormalMicroneuropathology:	Normal			
Tissue Received	12 left hemisphere 1 cm cerebral slabs in coronal orientation 7 right hemisphere cerebral slabs in coronal orientation 7 cerebellar slabs in sagittal orientation; 1 cm thickness 1 brainstem, whole					
Additional Medical Information	History of athero	sclerotic cardiovascular disease				
Available Datasets	MRI, DTI, Photo	documentation				
	MRI	Viewable online, avai	Viewable online, available for download			
	Blockface image	Left hemisphere	Left hemisphere			
	Histology					
	NissI	mosaic reconstruction	Coronal left hemisphere, intact (6x8) and as mosaic reconstructions from 2x3 sections; individual 2x3 sections			
	SMI-32 2x3 sections					
	Gene Expression					
	Microarray	striatum and white ma	~400 samples from left cerebral cortex, striatum and white matter structures, including controls and sample replicates			
	ISH	88 and 176 genes in respectively; right her	subcortex and cortex, misphere			

Table 3. Donor profile: H0351.1010.

ansmitter Study (I	SH)				
2/23//2011					
Male	Male				
26 years					
Hispanic					
Right					
30 hours (estimate	ted time of death to time that tiss	sue is frozen)			
Pass					
	Positive for atropine, caffeine, guaifenesin and theobromine, at levels usually not toxicologically significant				
6.6 (measured in	frontal pole)				
Pass	Region Tested	RIN value (Mean ± SD)			
	Frontal poles	6.4 ± 0.3			
	Occipital poles	6.3 ± 0.6			
	Cerebellum (left & right)	6.9 ± 0.4			
	Brainstem	5.4 ± 0.0			
		oted			
16 left hemisphere 1 cm cerebral slabs in coronal orientation 8 right hemisphere cerebral slabs in coronal orientation 7 cerebellar slabs in sagittal orientation; 1 cm thickness 1 brainstem, whole					
No clinically remarkable history.					
Histology					
Nissl Neurotransmitter Study histology (2x3)		dy histology (2x3)			
SMI-32 Neurotransmitter Study histology (2x3)					
Gene Expression					
ISH	88 and 176 genes in respectively; right her	subcortex and cortex, misphere			
	2/23//2011 Male 26 years Hispanic Right 30 hours (estimated and pass) Positive for atropologically not toxically not toxically not toxically for a significant and pass Gross pathology: Microneuropatho 16 left hemisphered a right hemisphered and pass and	Male 26 years Hispanic Right 30 hours (estimated time of death to time that tiss Pass Positive for atropine, caffeine, guaifenesin and the usually not toxicologically significant 6.6 (measured in frontal pole) Pass Region Tested Frontal poles Occipital poles Occipital poles Cerebellum (left & right) Brainstem Gross pathology: Normal Microneuropathology: Normal, hemosiderosis not as right hemisphere 1 cm cerebral slabs in corona 8 right hemisphere cerebral slabs in coronal orier 7 cerebellar slabs in sagittal orientation; 1 cm thick 1 brainstem, whole No clinically remarkable history. Histology Nissl Neurotransmitter Stude SMI-32 Neurotransmitter Stude Gene Expression ISH 88 and 176 genes in			

Table 4. Donor profile: H0351.1012.

rable 4. Donor profile: HU351.1012					
Donor H0351.1012 – Micro	oarray Survey, Neເ	urotransmit	tter Study (ISH)		
Tissue Receipt Date	5/24/2011				
Sex	Male	Male			
Age	31 years				
Race/Ethnicity	Caucasian				
Handedness	Right				
Postmortem Interval	17.5 hours (est	timated time	e of death to time that ti	issue is frozen)	
Serology	Pass				
Toxicology	Positive for atrousually not toxi		ine, ibuprofen and theo	bbromine, at levels	
Tissue pH	6.8 (measured	in frontal po	ole)		
RNA Quality	Pass	Region	Tested	RIN value (Mean ± SD)	
		Frontal	poles	6.3 ± 0.3	
		Occipita	al poles	5.8 ± 0.3	
		Cerebe	llum (left & right)	6.9 ± 0.2	
		Brainste	em	6.4 ± 0.0	
Neuropathology		Gross pathology: Normal Microneuropathology: Normal			
Tissue Received	8 right hemisph 8 cerebellar sla	18 left hemisphere 1 cm cerebral slabs in coronal orientation 8 right hemisphere cerebral slabs in coronal orientation 8 cerebellar slabs in sagittal orientation; 1 cm thickness 1 brainstem, whole			
Additional Medical Information	calcification in	temporal ho	enign spindle cell prolife orn of lateral ventricle, - egenerated xanthogran	-5 mm, possibly an old	
Available Datasets	MRI, DTI, Pho	todocumer	ntation		
	MRI		Viewable online, available for download		
	Blockface imag	ges	Left hemisphere		
	Histology				
	Nissl		Coronal left hemisphere, intact (6x8) and as mosaic reconstructions from 2x3 sections; individual 2x3 sections		
	SMI-32 2x3 sections				
	Gene Express	sion			
	Microarray	Microarray		off cerebral, cerebellar lires, including controls	
	ISH		88 and 176 genes in respectively; right her	subcortex and cortex, misphere	

Table 5. Donor profile: H0351.1015.

Donor H0351 1015 - Microarray Survey							
Donor H0351.1015 – Microarray Survey Tissue Receipt Date 10/11/2011							
Sex	Female						
Age	49 years						
Race/Ethnicity	Hispanic						
Handedness	Right						
Postmortem Interval	30 hours (estimate	ed time of death to time that tiss	sue is frozen)				
Serology	Pass						
Toxicology	Positive for caffei	ne, at levels usually not toxicolo	gically significant				
Tissue pH	6.9 (measured in	frontal pole)					
RNA Quality	Pass	Region Tested	RIN value (Mean ± SD)				
		Frontal poles	7.0 ± 0.2				
		Occipital poles	5.8 ± 1.2				
		Cerebellum (left & right)	7.5 ± 0.2				
		6.1 ± 0.4					
Neuropathology	Microneuropatho macrophages not	Gross Pathology: Normal Microneuropathology: Normal; modest numbers of hemosiderin laden macrophages noted in Virchow-Robin spaces in parietal and occipital lobes, mild arteriosclerosis					
Tissue Received	16 left hemisphere 1 cm cerebral slabs in coronal orientation 8 right hemisphere cerebral slabs in coronal orientation 8 cerebellar slabs in sagittal orientation; 1 cm thickness 1 brainstem, whole						
Additional Medical Information	Splenectomy, hyp	oothyroidism treated with Levoth	roid				
Available Datasets	MRI, DTI, Photo	documentation					
	MRI	Viewable online, available fo	r download				
	Blockface images	Left hemisphere					
	Histology	Histology					
	Nissl	Nissl Coronal left hemisphere, intact (6x8) and as mosaic reconstructions from 2x3 sections; individual 2x3 sections					
	SMI-32	2x3 sections					
	Gene Expressio	n					
	Microarray ~500 samples from left cerebral, cerebe brainstem structures including controls replicates						

Table 6. Donor profile: H0351.1016.

Table 6. Donor profile: H0351.1016.						
Donor H0351.1016 – Micro	array Survey, Neuro	otransmi	tter Study (ISH)			
Tissue Receipt Date	10/25/2011					
Sex	Male	Male				
Age	55 years	55 years				
Race/Ethnicity	Caucasian	Caucasian				
Handedness	Right	Right				
Postmortem Interval	18 hours (estima	18 hours (estimated time of death to time that tissue is frozen)				
Serology	Pass					
Toxicology	Positive for caffe significant	ine and th	neobromine, at levels us	sually not toxicologically		
Tissue pH	6.8 (measured in	frontal p	ole)			
RNA Quality	Pass	Region	Tested	RIN value (Mean ± SD)		
		Frontal	poles	6.4 ± 0.5		
		Occipita	al poles	6.7 ± 0.7		
		Cerebellum (left & right)		7.4 ± 0.3		
		Brainste	em	6.6 ± 0.2		
Neuropathology		Gross Pathology: Normal Microneuropathology: Normal				
Tissue Received	8 right hemisphe 9 cerebellar slab	16 left hemisphere cerebral slabs in coronal orientation 8 right hemisphere cerebral slabs in coronal orientation 9 cerebellar slabs in sagittal orientation; 1 cm thickness 1 brainstem, whole				
Additional Medical Information	Coronary artery a cholesterol.	atheroscle	erosis, prescriptions for	clotting and high		
Available Datasets	MRI, DTI, Photo	documer	ntation			
	MRI	MRI		Viewable online, available for download		
	Blockface image	Blockface images		Left hemisphere		
	Histology					
	Nissl		Coronal left hemisphere, intact (6x8) and as mosaic reconstructions from 2x3 sections; individual 2x3 sections			
	SMI-32 2x3 sections		2x3 sections			
	Gene Expression					
	Microarray	Microarray		off cerebral, cerebellar ares, including controls		
	ISH		88 and 176 genes in respectively; right hen	subcortex and cortex, nisphere		

Table 7. Donor profile: H0351.2001.

Donor H0351.2001 – Microard	ray Survey					
Tissue Receipt Date	7/29/2009					
Sex	Male					
Age	24 years					
Race/Ethnicity	African American	African American				
Handedness	Left					
Postmortem Interval	23 hours (estimat	ted time o	of death to time that tiss	sue is frozen)		
Serology	Pass					
Toxicology	Positive for atropi significant	ine and c	affeine, at levels usuall	y not toxicologically		
Tissue pH	6.72					
RNA Quality	Pass	Region	Tested	RIN value (Mean ± SD)		
		Frontal poles		7.1 ± 0.4		
		Occipital poles		6.5 ± 0.6		
		Cerebellum (left & right)		8.1 ± 0.4		
		Brainstem				
Neuropathology	MRI-based Radiology Report: Normal Microneuropathology: Normal					
Tissue Received		os in sagi [.]	al orientation; 5 mm thic ttal orientation; 5 mm th			
Additional Medical Information	History of asthma	l				
Available Datasets	MRI, DTI, Photoc	documen	tation			
	MRI		Viewable online, available for download			
	DTI		Viewable online, available for download			
	Histology					
	Nissl Full coronal mosaic recon sections; individual 2x3 se					
	Gene Expression	n				
	Microarray ~1000 samples from > cerebral, cerebellar an including controls and			nd brainstem structures,		

Table 8. Donor profile: H0351.2002.

Tissue Receipt Date 8/25/2009 Sex Male Age 39 years Race/Ethnicity Handedness Left Postmortem Interval 10 hours (estimated time of death to time that tissue is frozen) Serology Pass Toxicology Positive for atropine, caffeine, lidocaine and monoethylglycinexylidide (MEGX) at levels usually not toxicologically significant Tissue pH 6.86 RNA Quality Region Tested RIN value (Mean ± SD) Frontal pole (left & right) Cerebellum (left & right) Cerebellum (left & right) Cerebellum (left & right) Resion To set on the right) Brainstem 7.3 ± 0.0 Neuropathology MRI-based Radiology Report: Normal; possible small pituitary adenoma Microneuropathology: Normal; single neurofibrillary tangle in entorhinal cortex Tissue Received 25 cerebral slabs in coronal orientation; 5 mm thickness; 1 broken and irreparable 1 brainstem, whole Additional Medical Information Available Datasets MRI, DTI, Photodocumentation MRI DTI Viewable online, available for download DTI Blockface images Left and right hemispheres Histology Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive controls and sample replicates	Table 8. Donor profile: H0351.2002.						
Sex	Donor H0351.2002 – Microard	ay Survey					
Age 39 years Race/Ethnicity African American Handedness Left Postmortem Interval 10 hours (estimated time of death to time that tissue is frozen) Serology Pass Toxicology Positive for atropine, caffeine, lidocaine and monoethylglycinexylidide (MEGX) at levels usually not toxicologically significant Tissue pH 6.86 RNA Quality Region Tested Rink value (Mean ± SD) Frontal pole (left & right) 7.5 ± 0.2 Occipital pole (left & right) 8.6 ± 0.6 Brainstem 7.3 ± 0.0 Neuropathology MRI-based Radiology Report: Normal; possible small pituitary adenoma Microneuropathology: Normal; single neurofibrillary tangle in entorhinal contex Tissue Received 25 cerebral slabs in coronal orientation; 5 mm thickness 17 cerebellar slabs in sagittal orientation; 5 mm thickness; 1 broken and irreparable 1 brainstem, whole Additional Medical Information None known MRI Viewable online, available for download DTI Viewable online, available for download Blockface images Left and right hemispheres Histology Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive	Tissue Receipt Date	8/25/2009	8/25/2009				
Race/Ethnicity	Sex	Male	Male				
Handedness Left	Age	39 years					
Postmortem Interval 10 hours (estimated time of death to time that tissue is frozen)	Race/Ethnicity	African America	an				
Pass Positive for atropine, caffeine, lidocaine and monoethylglycinexylidide (MEGX) at levels usually not toxicologically significant	Handedness	Left					
Toxicology Positive for atropine, caffeine, lidocaine and monoethylglycinexylidide (MEGX) at levels usually not toxicologically significant Tissue pH 6.86 RNA Quality Pass Region Tested RIN value (Mean ± SD) Frontal pole (left & right) Cerebellum (left & right) Rocipital pole (left & right) Rocipit	Postmortem Interval	10 hours (estim	ated time o	of death to time that tiss	sue is frozen)		
(MEGX) at levels usually not toxicologically significant Tissue pH 6.86 RNA Quality Pass Region Tested RIN value (Mean ± SD) Frontal pole (left & right) 7.5 ± 0.2 Occipital pole (left & right) 7.1 ± 1.0 Cerebellum (left & right) 8.6 ± 0.6 Brainstem 7.3 ± 0.0 Neuropathology MRI-based Radiology Report: Normal; possible small pituitary adenoma Microneuropathology: Normal; single neurofibrillary tangle in entorhinal cortex Tissue Received 25 cerebral slabs in coronal orientation; 5 mm thickness 17 cerebellar slabs in sagittal orientation; 5 mm thickness; 1 broken and irreparable 1 brainstem, whole Additional Medical Information Available Datasets MRI, DTI, Photodocumentation MRI Viewable online, available for download DTI Viewable online, available for download Blockface images Left and right hemispheres Histology Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive	Serology	Pass					
RNA Quality Pass Region Tested RIN value (Mean ± SD) Frontal pole (left & right) 7.5 ± 0.2 Occipital pole (left & right) 7.1 ± 1.0 Cerebellum (left & right) 8.6 ± 0.6 Brainstem 7.3 ± 0.0 Neuropathology MRI-based Radiology Report: Normal; possible small pituitary adenoma Microneuropathology: Normal; single neurofibrillary tangle in entorhinal cortex Tissue Received 25 cerebral slabs in coronal orientation; 5 mm thickness 17 cerebellar slabs in sagittal orientation; 5 mm thickness; 1 broken and irreparable 1 brainstem, whole Additional Medical Information Available Datasets MRI, DTI, Photodocumentation MRI Viewable online, available for download DTI Viewable online, available for download Blockface images Left and right hemispheres Histology Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive	Toxicology						
Region Fested	Tissue pH	6.86					
Occipital pole (left & right) Cerebellum (left & right) Reference to the context of the contex	RNA Quality	Pass	Region	Tested			
Cerebellum (left & right) 8.6 ± 0.6 Brainstem 7.3 ± 0.0 Neuropathology MRI-based Radiology Report: Normal; possible small pituitary adenoma Microneuropathology: Normal; single neurofibrillary tangle in entorhinal cortex Tissue Received 25 cerebral slabs in coronal orientation; 5 mm thickness 17 cerebellar slabs in sagittal orientation; 5 mm thickness; 1 broken and irreparable 1 brainstem, whole Additional Medical Information None known			Frontal	pole (left & right)	7.5 ± 0.2		
Brainstem 7.3 ± 0.0			Occipital pole (left & right)		7.1 ± 1.0		
MRI-based Radiology Report: Normal; possible small pituitary adenoma Microneuropathology: Normal; single neurofibrillary tangle in entorhinal cortex			Cerebellum (left & right)		8.6 ± 0.6		
Microneuropathology: Normal; single neurofibrillary tangle in entorhinal cortex Tissue Received 25 cerebral slabs in coronal orientation; 5 mm thickness 17 cerebellar slabs in sagittal orientation; 5 mm thickness; 1 broken and irreparable 1 brainstem, whole Additional Medical Information Available Datasets MRI, DTI, Photodocumentation MRI Viewable online, available for download DTI Viewable online, available for download Elockface images Left and right hemispheres Histology Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive			Brainstem 7.3 ± 0.0				
17 cerebellar slabs in sagittal orientation; 5 mm thickness; 1 broken and irreparable 1 brainstem, whole Additional Medical Information Available Datasets MRI, DTI, Photodocumentation MRI Viewable online, available for download DTI Viewable online, available for download Blockface images Left and right hemispheres Histology Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive	Neuropathology	Microneuropathology: Normal; single neurofibrillary tangle in entorhinal					
Information Available Datasets MRI, DTI, Photodocumentation MRI Viewable online, available for download DTI Viewable online, available for download Blockface images Left and right hemispheres Histology Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive	Tissue Received	17 cerebellar sla irreparable	abs in sagi				
MRI Viewable online, available for download DTI Viewable online, available for download Blockface images Left and right hemispheres Histology Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive		None known					
DTI Viewable online, available for download Blockface images Left and right hemispheres Histology Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive	Available Datasets	MRI, DTI, Phot	odocumer	ntation			
Histology Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive		MRI		Viewable online, available for download			
Histology Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive		DTI		Viewable online, available for download			
Nissl Full coronal 6x8 sections and full coronal mosaic reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive		Blockface image	es	Left and right hemispheres			
reconstructions from 2x3 sections; individual 2x3 sections SMI-32 2x3 sections Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive		Histology	Histology				
Gene Expression Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive		reconstructions from 2x3 sections; individua					
Microarray ~1,000 samples from > 300 left and right cerebral, cerebellar and brainstem structures, including positive		SMI-32 2x3 sections					
cerebellar and brainstem structures, including positive		Gene Expressi	on				
		cerebellar and brainstem structures, including					

Table 9. Donor profile H0351.2003 .

Tissue Receipt Date ### African	Table 9. Donor profile H0351.2003 .				
Sex	Donor H0351.2003 – Subcort	ex Study			
Age 48 years Race/Ethnicity Caucasian Handedness Right Postmortem Interval 24 hours (estimated time of death to time that tissue is frozen) Serology Pass Toxicology Positive for caffeine and theobromine at levels usually not toxicologically significant, acetone (1.6 mg/dL) consistent with low level fasting or diabetes. Tissue pH 6.65 RNA Quality Pass Region Tested RIN value (Mean ± SD) Frontal pole (left & right) 5.9 ± 0.7 Occipital pole (left & right) 8.2 ± 0.3 Brainstem 7.5 ± 0.1 Neuropathology MRI-based Radiology Report: Normal; incidental 4mm angioma in left thalamus Microneuropathology: Normal; moderate arteriosclerosis and perivascular hemosiderosis. Tissue Received 6 cerebral slabs in coronal orientation, anatomy-based cuts 10 cerebellar slabs in sagittal orientation, average thickness: 7 mm Additional Medical Information Enlarged heart, history of sleep apnea and morbid obesity MRI Available for download DTI Available for download Histology Nissl 2x3 sections Vicochrome Oxidase 2x3 sections Cytochrome Oxidase 2x3 sections	Tissue Receipt Date	4/1/2010			
Race/Ethnicity Caucasian	Sex	Female			
Right Postmortem Interval 24 hours (estimated time of death to time that tissue is frozen)	Age	48 years			
Postmortem Interval 24 hours (estimated time of death to time that tissue is frozen) Serology Pass Positive for caffeine and theobromine at levels usually not toxicologically significant, acetone (1.6 mg/dL) consistent with low level fasting or diabetes. Tissue pH 6.65 RNA Quality Pass Region Tested RIN value (Mean ± SD) Frontal pole (left & right) Cocipital pole (left & right) Brainstem 7.5 ± 0.1 Neuropathology MRI-based Radiology Report: Normal; incidental 4mm angioma in left thalamus Microneuropathology: Normal; moderate arteriosclerosis and perivascular hemosiderosis. Tissue Received 6 cerebral slabs in coronal orientation, anatomy-based cuts 10 cerebellar slabs in sagittal orientation, average thickness: 7 mm Additional Medical Information Available Datasets MRI, DTI, Photodocumentation MRI Available for download DTI Available for download Histology Nissl Available for download DTI Available for download Histology Nissl 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior	Race/Ethnicity	Caucasian			
Pass Positive for caffeine and theobromine at levels usually not toxicologically significant, acetone (1.6 mg/dL) consistent with low level fasting or diabetes.	Handedness	Right			
Positive for caffeine and theobromine at levels usually not toxicologically significant, acetone (1.6 mg/dL) consistent with low level fasting or diabetes. Tissue pH 6.65 RNA Quality Region Tested Rin value (Mean ± SD) Frontal pole (left & right) Cerebellum (left & right) Roccipital pole (left & right) Region Tested Rin value (Mean ± SD) Frontal pole (left & right) Region Tested Rin value (Mean ± SD) Frontal pole (left & right) Region Tested Rin value (Mean ± SD) Frontal pole (left & right) Roccipital pole (left & righ	Postmortem Interval	24 hours (estimate	ed time o	of death to time that tissue is fr	ozen)
significant, acetone (1.6 mg/dL) consistent with low level fasting or diabetes. Final Quality Pass Region Tested RIN value (Mean ± SD) Frontal pole (left & right)	Serology	Pass			
RNA Quality Pass Region Tested RIN value (Mean ± SD) Frontal pole (left & right) Coccipital pole (left & right) Roccipital pole (left & right) Cerebellum (left & right) Roccipital pole (left & right) Soccipital pole (left & right) Roccipital po	Toxicology	significant, aceton			
Frontal pole (left & right) Frontal pole (left & right) Cerebellum (left & right) Reuropathology MRI-based Radiology Report: Normal; incidental 4mm angioma in left thalamus Microneuropathology: Normal; moderate arteriosclerosis and perivascular hemosiderosis. Tissue Received 6 cerebral slabs in coronal orientation, anatomy-based cuts 10 cerebellar slabs in sagittal orientation, average thickness: 7 mm Additional Medical Information Available Datasets MRI, DTI, Photodocumentation MRI Available for download DTI Available for download Histology Nissl AchE 2x3 sections Cytochrome Oxidase Zx3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior	Tissue pH	6.65			
Occipital pole (left & right) 7.7 ± 0.4 Cerebellum (left & right) 8.2 ± 0.3 Brainstem 7.5 ± 0.1 Neuropathology MRI-based Radiology Report: Normal; incidental 4mm angioma in left thalamus Microneuropathology: Normal; moderate arteriosclerosis and perivascular hemosiderosis. Tissue Received 6 cerebral slabs in coronal orientation, anatomy-based cuts 10 cerebellar slabs in sagittal orientation, average thickness: 7 mm Additional Medical Information Enlarged heart, history of sleep apnea and morbid obesity MRI Available Datasets MRI, DTI, Photodocumentation MRI Available for download DTI Available for download Histology Nissl 2x3 sections AchE 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior	RNA Quality	Pass	Regio	n Tested	
Cerebellum (left & right) 8.2 ± 0.3			Fronta	l pole (left & right)	5.9 ± 0.7
Brainstem 7.5 ± 0.1 Neuropathology MRI-based Radiology Report: Normal; incidental 4mm angioma in left thalamus Microneuropathology: Normal; moderate arteriosclerosis and perivascular hemosiderosis. Tissue Received 6 cerebral slabs in coronal orientation, anatomy-based cuts 10 cerebellar slabs in sagittal orientation, average thickness: 7 mm Additional Medical Information Enlarged heart, history of sleep apnea and morbid obesity MRI Available for download DTI Available for download Histology Nissl 2x3 sections AchE 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior			Occipital pole (left & right)		7.7 ± 0.4
MRI-based Radiology Report: Normal; incidental 4mm angioma in left thalamus Microneuropathology: Normal; moderate arteriosclerosis and perivascular hemosiderosis. Tissue Received 6 cerebral slabs in coronal orientation, anatomy-based cuts 10 cerebellar slabs in sagittal orientation, average thickness: 7 mm Additional Medical Information Enlarged heart, history of sleep apnea and morbid obesity MRI Available Datasets MRI, DTI, Photodocumentation MRI Available for download DTI Available for download Histology Nissl 2x3 sections AchE 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior			Cerebellum (left & right)		8.2 ± 0.3
thalamus Microneuropathology: Normal; moderate arteriosclerosis and perivascular hemosiderosis. Tissue Received 6 cerebral slabs in coronal orientation, anatomy-based cuts 10 cerebellar slabs in sagittal orientation, average thickness: 7 mm Additional Medical Information Enlarged heart, history of sleep apnea and morbid obesity MRI, DTI, Photodocumentation MRI Available for download DTI Available for download Histology Nissl 2x3 sections AchE 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior			Brains	tem	7.5 ± 0.1
Additional Medical Information Available Datasets MRI, DTI, Photodocumentation MRI Available for download DTI Available for download Histology Nissl 2x3 sections AchE 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriory to the posterior	Neuropathology	thalamus Microneuropathology: Normal; moderate arteriosclerosis and			
Information Available Datasets MRI, DTI, Photodocumentation MRI Available for download DTI Available for download Histology Nissl 2x3 sections AchE 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior	Tissue Received				
MRI Available for download DTI Available for download Histology Nissl 2x3 sections AchE 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior		Enlarged heart, his	story of	sleep apnea and morbid obesi	ty
DTI Available for download Histology Nissl 2x3 sections AchE 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior	Available Datasets	MRI, DTI, Photod	ocumer	ntation	
Nissl 2x3 sections AchE 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior		MRI		Available for download	
Nissl 2x3 sections AchE 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior		DTI		Available for download	
AchE 2x3 sections Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior		Histology			
Cytochrome Oxidase 2x3 sections Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior		Nissl		2x3 sections	
Gene Expression ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior		AchE		2x3 sections	
ISH Right hypothalamus/amygdala: 10 genes Left subcortical region extending from head of caudate nucleus posteriorly to the posterior		Cytochrome Oxidase 2x3 sections			
Left subcortical region extending from head of caudate nucleus posteriorly to the posterior		Gene Expression	1		
caudate nucleus posteriorly to the posterior		Left subcortical region extending fr caudate nucleus posteriorly to the			la: 10 genes
					to the posterior

Table 9. Donor profile: H0372-006.

Table 9. Donor profile: HU372-UU6.					
Donor H0372-006 - Subcorte	x Study				
Tissue Receipt Date	12/04/2009				
Sex	Male				
Age	44 years				
Race/Ethnicity	Caucasian				
Handedness	Right				
Postmortem Interval	24 hours (estimate	ed time o	of death to time that tissue is fr	ozen)	
Serology	Pass				
Toxicology			ine, lidocaine, theobromine, a ally not toxicologically significa		
Tissue pH	6.85				
RNA Quality	Pass	Regio	n Tested	RIN value	
		Frontal pole (left & right)		7.4	
		Occipital pole (left & right)		6.3	
		Cerebellum (left & right)		Not sampled	
		Brainstem 6.0			
Neuropathology	MRI-based Radiology Report: Normal Microneuropathology: Normal				
Tissue Received	4 cerebral slabs in coronal orientation Slab thickness: 3.25 - 3.5 mm				
Additional Medical Information	Flu-like symptoms	prior to	death		
Available Datasets	MRI, DTI, Photod	ocumer	tation		
	MRI		Available for download		
	DTI		Available for download		
	Histology				
	Nissl		2x3 sections		
	AchE		2x3 sections		
	Cytochrome Oxidase 2x3 sections				
	Gene Expression				
	ISH		Right hypothalamus/amygda	la: 10 genes	
			Left subcortical region extend caudate nucleus posteriorly taspect of the substantia nigra	to the posterior	