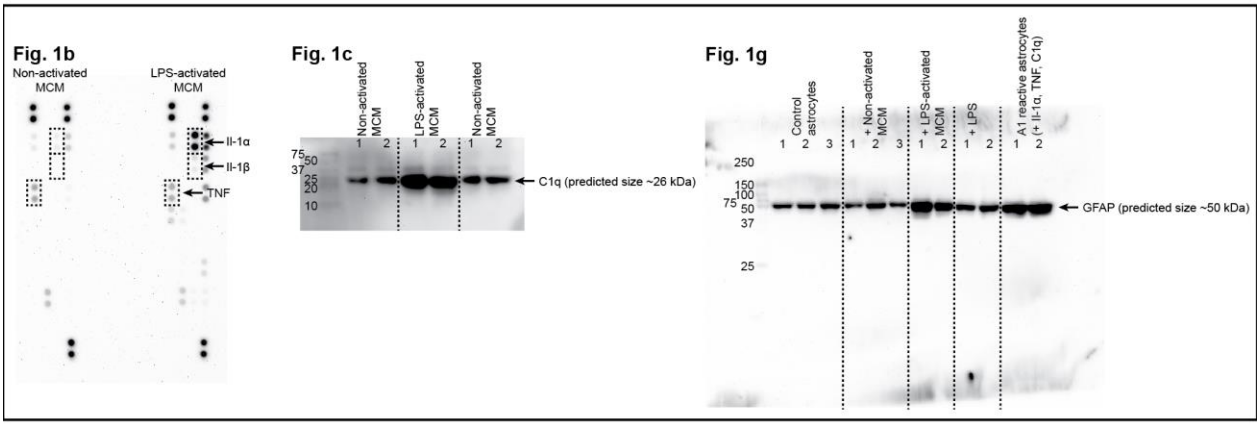
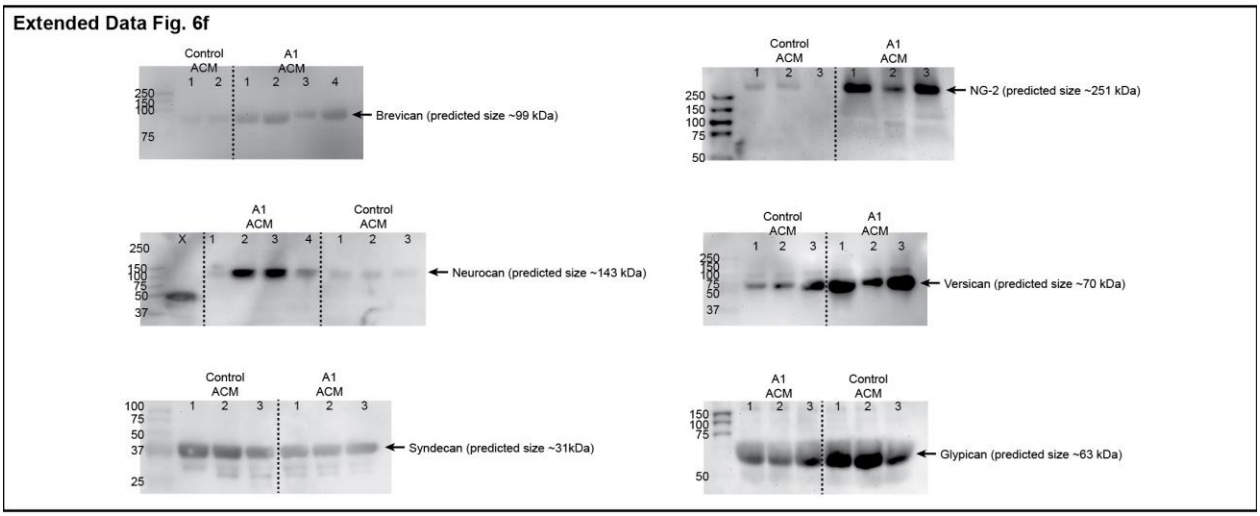
doi:10.1038/nature21029

Supplemental Figure 1: Raw blots used in main figures.





Supplemental Data Table 1: Rat primer sequences.

ID	FWD	REV	PRODUCT SIZE
Aif1	AAGGATTTGCAGGGAGGAAAAGC	CTCCATGTACTTCGTCTTGAAGG	156
Aldh1l1	AGTGAAGGAGCTGTGTGACG	TCCATCCGTTGGGTTGATGG	253
Amigo2	GTTCGCCACAACAACATCAC	GTTTCTGCAAGTGGGAGAGC	211
Aqp4	AACCCCAGAAGACAGCACCT	ACACTTACAGCTGTCCAGGGTTG	76
Aspg	CAGGTGCCCAGGTTCCTATC	GTCCACCTTGGTTGTCCGAT	152
Axl	GACACCCCCGAGGTACTTATG	TGGGGGTTCACTCACTGGG	177
B3gnt5	TGCTCCTGGATGAAAGGTCC	ACATGCTTGATCCGTGTGGT	161
Cd109	GTCGCTCACAGGTACCTCAA	CTGTGAAGTTGAGCGTTGGC	116
Cd14	TCAGAATCTACCGACCATGAAGC	GGACACTTTCCTCGTCCTGG	119
Cd44	TCAGGATAGCCCCACAACAAC	GACTCCGTACCAGGCATCTTC	159
Cd68	CGCATCTTGTACCTGACCCA	TTCTGCGCTGAGAATGTCCA	254
Clcf1	GACTCGTGGGGGATGTTAGC	CCCCAGGTAGTTCAGGTAGGT	180
Cp	GATGTTTCCCCAAACGCCTG	GTAGCTCTGAGACGATGCTTGA	118
Cx3cr1	TTCCTGCAGAAGTCCCCGT	CCGAACGTGAAGACAAGGGA	179
Cxcl10	TGCAAGTCTATCCTGTCCGC	ACGGAGCTCTTTTTGACCTTC	140
Emp1	ACCATTGCCAACGTCTGGAT	TGGAACACGAAGACCACGAG	188
Fbln5	AGGGGGTTAAGCGAAACCAG	GTGAGTATCCTTTTAATCCTGGCA	198
Fkbp5	TGCAGTGTCGGCAGTTGTAT	GGGTCGCCCAAGTTAGAACA	112
Gabra1	TCCATGATGGCTCAAACCGT	TCTTCATCACGGGCTTGTCC	183
Gapdh	GTGCCAGCCTCGTCTCATAG	AGAGAAGGCAGCCCTGGTAA	91
Gas6	ACCTCGTCCAGAAGATTAAC	TCCGGGTGTAGTTGAGGCTA	189
Gbp2	TAAAGGTCCGAGGCCCAAAC	AACATATGTGGCTGGGCGAA	192
Gfap	AACCGCATCACCATTCCTGT	TCCTTAATGACCTCGCCATCC	146
Ggta1	TCTCAGGATCTGGGAGTTGGA	GAGTTCTATGGAGCTCCCGC	84
Gjc2	GGAAGGGCTCATCAGAAGGT	CCGTTAGCACAATGCGGAAG	179
Gpc4	TGGACCGACTGGTTACTGATG	CCCTGGTTGGCTAATCCGTT	190
Gpc6	TTTCGACCCTACAACCCGGA	GTCTGTGACACTGTGCTGCAT	102
H2-D1	ATGGAACCTTCCAGAAGTGGG	GAAGTAAGTTGGAGTCGGTGGA	144
H2-T23	ATTGGAGCTGTTGTGAGGAGG	CCACGAGGCAACTGTCTTTTC	130
Hsbp1	GAGATCACTGGCAAGCACGA	ATTGTGTGACTGCTTTGGGC	172
Iigp1	ATTTGGCTCGAAGCCTTTGC	ACGGCATTTGCCAGTCCTTA	169
Itgam	GACTCCGCATTTGCCCTACT	TGCCCACAATGAGTGGTACAG	109
Lcn2	CCGACACTGACTACGACCAG	AATGCATTGGTCGGTGGGAA	197
Mbp	AGGCGTAGAGGAACTATGGGT	TCACCACTGTCCAATCAGGG	125
Megf10	TACCGCCATGGGGAGAAAAC	TTATCAGCGCAGTGAGGGAC	98
Mertk	CTGCTTCTGCGGGTTTGTTC	GGCTTTGCAAGGTAAGCTCG	179
Mog	AACTCCGTGCAGAAGTCGAG	TCACTCAAAAGGGGTTTCTTAGC	195
Nefl	AAGCACGAAGAGCGAGATGG	ACCTGCGAGCTCTGAGAGTA	177
Osmr	GTCATTCTGGACATGAAGAGGT	AATCACAGCGTTGGGTCTGA	144
Psmb8	TATCTGCGGAATGGGGAACG	AAAGTCCCGGTCCCTTCTTG	136
Ptgs2	CTCAGCCATGCAGCAAATCC	GGGTGGGCTTCAGCAGTAAT	172
Ptx3	CATCCCGTTCAGGCTTTGGA	CACAGGGAAAGAAGCGAGGT	104
Rplp0	CCCACTGGCTGAAAAGGTCA	TTGGTGTGAGGGGCTTAGTC	192
S100a10	GAAAGGGAGTTCCCTGGGTT	CCCACTTTTCCATCTCGGCA	98
S1pr3	CTTGCAGAACGAGAGCCTGT	CCTCAACAGTCCACGAGAGG	70
Serpina3n	GTCTTTCAGGTGGTCCACAAGG	GCCAATCACAGCATAGAAGCG	297
Serping1	TGGCTCAGAGGCTAACTGGC	GAATCTGAGAAGGCTCTATCCCCA	122
Slc10a6	TCCATAGAGACCGGAGCACA	ATGCCTGATATGCTGCGACA	157
Snap25	GGATGAGCAAGGCGAACAAC	TCCTGATTATTGCCCCAGGC	180
Sox10	GACCCTATTATGGCCACGCA	GCCCCTCTAAGGTCGGGATA	182
Sparc	AAAACGTCCTGGTCACCTTG	TGGGACAGGTACCCATCAAT	232
Sparcl1	CAGTCCCGACAACGTTTCTCT	CTGTCGACTGTTCATGGGCT	186
Sphk1	AAAGCGAGACCCTGTTCCAG	CAGTCTGCTGGTTGCATAGC	231
Srgn	GTTCAAGGTTATCCTGCTCGGA	AAACAGGATCGGTCATCGGG	151
Steap4	CAAACGCCGAGTACCTTGCT	CAGACAAACACCTGCCGACT	121
Syt1	AGCCATAGTTGCGGTCCTTT	TCAGTCAGTCCGGTTTCAGC	189
Tgm1	AGACCCAATTTTCCTGGGGC	AGCGAGGACCTTCCATTGTG	100
Thbs1	TCGGGGCAGGAAGACTATGA	ACTGGGCAGGGTTGTAATGG	118
Thbs2	CGTGAGCGATGAGAAGGACA	CGATCTGTGCTTGGTTGTGC	122
Timp1	CGCTAGAGCAGATACCACGA	CCAGGTCCGAGTTGCAGAAA	140
Tm4sf1	CTGAGGGACAGTACCTTCTGGATTC	GGCTAGGCCTCAACACAGTTA	225
Ugt1a	GGAAGCTGTTAGTGATCCCC	TGCTATGACCACCACTTCGT	101
Vim	GAGGAGATGAGGGAGTTGCG	CTGCAATTTTTCTCGCAGCC	117

Supplemental Data Table 2: Mouse primer sequences.

ID	FWD	REV	PRODUCT SIZE
Aif1	GGATCAACAAGCAATTCCTCGA	CTGAGAAAGTCAGAGTAGCTGA	247
Aldh1l1	GCAGGTACTTCTGGGTTGCT	GGAAGGCACCCAAGGTCAAA	86
Amigo2	GAGGCGACCATAATGTCGTT	GCATCCAACAGTCCGATTCT	263
Aqp4	CTGGGCATCCTGTCACAACA	CAGGAATGTCCACACTTAGACAC	94
Arg1	TTTTAGGGTTACGGCCGGTG	CCTCGAGGCTGTCCTTTTGA	146
Aspg	GCTGCTGGCCATTTACACTG	GTGGGCCTGTGCATACTCTT	133
B3gnt5	CGTGGGGCAATGAGAACTAT	CCCAGCTGAACTGAAGAAGG	207
C1q	TCTGCACTGTACCCGGCTA	CCCTGGTAAATGTGACCCTTTT	232
Ccl2	CACTCACCTGCTGCTACTCA	GCTTGGTGACAAAAACTACAGC	117
Cd109	CACAGTCGGGAGCCCTAAAG	GCAGCGATTTCGATGTCCAC	147
Cd14	GGACTGATCTCAGCCCTCTG	GCTTCAGCCCAGTGAAAGAC	232
Cd44	ACCTTGGCCACCACTCCTAA	GCAGTAGGCTGAAGGGTTGT	299
Cd68	ACTGGTGTAGCCTAGCTGGT	CCTTGGGCTATAAGCGGTCC	85
Celf4	TGCGCTTTCCTCACCTACTG	TTTCTATGTGAAGGGGGCTGG	111
Clcf1	CTTCAATCCTCCTCGACTGG	TACGTCGGAGTTCAGCTGTG	176
Cp	TGTGATGGGAATGGGCAATGA	AGTGTATAGAGGATGTTCCAGGTCA	282
Cx3cr1	CAGCATCGACCGGTACCTT	GCTGCACTGTCCGGTTGTT	65
Cxcl10	CCCACGTGTTGAGATCATTG	CACTGGGTAAAGGGGAGTGA	211
Emp1	GAGACACTGGCCAGAAAAGC	TAAAAGGCAAGGGAATGCAC	183
Fbln5	CTTCAGATGCAAGCAACAA	AGGCAGTGTCAGAGGCCTTA	281
Fkbp5	TATGCTTATGGCTCGGCTGG	CAGCCTTCCAGGTGGACTTT	194
Gabra1	GCTTCCTAGCTTGCGTTCATT	AACTTGCACTCTGGCCCTAA	293
Gapdh	AAGAGGGATGCTGCCCTTAC	TACGGCCAAATCCGTTCACA	119
Gbp2	GGGGTCACTGTCTGACCACT	GGGAAACCTGGGATGAGATT	285
Gfap	AGAAAGGTTGAATCGCTGGA	CGGCGATAGTCGTTAGCTTC	299
Gfap	AGAAAGGTTGAATCGCTGGA	CGGCGATAGTCGTTAGCTTC	299
Ggta1	GTGAACAGCATGAGGGGTTT	GTTTTGTTGCCTCTGGGTGT	115
Gjc2	CTTGTGCATCTCCAGGTCCCA	TGTCAGCACAATGCGGAAGA	151
H2-D1	TCCGAGATTGTAAAGCGTGAAGA	ACAGGGCAGTGCAGGGATAG	204
H2-T23	GGACCGCGAATGACATAGC	GCACCTCAGGGTGACTTCAT	212
Hsbp1	GACATGAGCAGTCGGATTGA	GGATGGGGTGTAGGGGTACT	265
Iigp1	GGGGCAATAGCTCATTGGTA	ACCTCGAAGACATCCCCTTT	104
Il1a	CGCTTGAGTCGGCAAAGAAAT	CTTCCCGTTGCTTGACGTTG	271
Il1b	TGCCACCTTTTGACAGTGATG	TGATGTGCTGCTGCGAGATT	138
Itgam	TGGCCTATACAAGCTTGGCTTT	AAAGGCCGTTACTGAGGTGG	93
Lcn2	CCAGTTCGCCATGGTATTTT	CACACTCACCACCCATTCAG	206
Marco	TTCTGTCGCATGCTCGGTTA	CAGATGTTCCCAGAGCCACC	71
Mbp	GAGACCCTCACAGCGATCCAAG	GGAGGTGGTGTTCGAGGTGTC	282
Mog	CACCGAAGACTGGCAGGACA	CCACAGCAAAGAGGCCAATG	129
Msr1	CCAGCAATGACAAAAGAGATGACA	CTGAAGGGAGGGGCCATTTT	150
Nefl	CAAGGACGAGGTGTCGGAAA	TGATTGTGTCCTGCATGGCG	152
Osmr	GTGAAGGACCCAAAGCATGT	GCCTAATACCTGGTGCGTGT	199
Psmb8	CAGTCCTGAAGAGGCCTACG	CACTTTCACCCAACCGTCTT	121
Ptgs2	GCTGTACAAGCAGTGGCAAA	CCCCAAAGATAGCATCTGGA	232
Ptx3	AACAAGCTCTGTTGCCCATT	TCCCAAATGGAACATTGGAT	147
S100a10	CCTCTGGCTGTGGACAAAAT	CTGCTCACAAGAAGCAGTGG	238
S1pr3	AAGCCTAGCGGGAGAGAAAC	TCAGGGAACAATTGGGAGAG	197
Saa3	GGGTCTAGAGACATGTGGCG	TCTGGCATCGCTGATGACTT	150
Serpina3n	CCTGGAGGATGTCCTTTCAA	TTATCAGGAAAGGCCGATTG	233
Serping1	ACAGCCCCCTCTGAATTCTT	GGATGCTCTCCAAGTTGCTC	299
Slc10a6	GCTTCGGTGGTATGATGCTT	CCACAGGCTTTTCTGGTGAT	217
Snap25	AGCAAGGCGAACAACTCGAT	AGGCCACAGCATTTGCCTAA	106
Sphk1	GATGCATGAGGTGGTGAATG	TGCTCGTACCCAGCATAGTG	135
Srgn	GCAAGGTTATCCTGCTCGGA	TGGGAGGGCCGATGTTATTG	134
Steap4	CCCGAATCGTGTCTTTCCTA	GGCCTGAGTAATGGTTGCAT	262
Syt1	CGCTCCAGTTTCCCTCTGAAT	GGATGTTGGTTGTTCGAGCG	126
Tgm1	CTGTTGGTCCCGTCCCAAA	GGACCTTCCATTGTGCCTGG	97
Timp1	AGTGATTTCCCCGCCAACTC	GGGGCCATCATGGTATCTGC	123
Tm4sf1	GCCCAAGCATATTGTGGAGT	AGGGTAGGATGTGGCACAAG	258
Tmem119	GTGTCTAACAGGCCCCAGAA	AGCCACGTGGTATCAAGGAG	119
Tnfa	TGTGCTCAGAGCTTTCAACAA	CTTGATGGTGGTGCATGAGA	88
Ugt1a	CCTATGGGTCACTTGCCACT	AAAACCATGTTGGGCATGAT	136
Vim	AGACCAGAGATGGACAGGTGA	TTGCGCTCCTGAAAAACTGC	169

Supplemental Data Table 3: Clinical and pathological characteristics of human post mortem tissue samples from multiple sclerosis patients and age-matched controls.

Sex	Age (years)	PMD (hours)	Disease duration (years)	Disease course	FDX
F	51	10	23	SP	active
F	35	9	5	SP	active
M	40	27	16	SP	active
F	50	22	23	SP	active, chronic inactive
F	42	11	6	PP	chronic active
F	34	12	11	SP	chronic active
F	59	21	39	SP	chronic active
F	59	21	39	SP	chronic active
F	53	17	28	SP	chronic inactive
M	53	13	16	SP	chronic inactive
F	57	12	19	SP	chronic inactive
M	82	21	NA	NA	control, unknown
M	35	22	NA	NA	control, carcinoma of the tongue
M	84	5	NA	NA	control, carcinoma of the bladder
M	82	21	NA	NA	control, myelodysplastic syndrome

Inflammatory staging of subcortical MS lesions was carried out according to established histological criteria: active - presence of MOG+/LFB+ phagocytes and strong microglia activation; early inactive - presence of PAS+ phagocytes and strong microglia activation; late inactive - no macrophages and diffuse microglia activation[49-51]. Abbreviations: F, female; FDX, functional diagnosis; LFB, Luxol fast blue; M, male; MOG, myelin oligodendrocyte glycoprotein; MS, multiple sclerosis; NA, not applicable; PAS, periodic acid Schiff; PMD, postmortem delay; PP, primary progressive MS; SP, secondary progressive MS.

Supplemental Data Table 4: Clinical and pathological characteristics of human post mortem tissue samples from Alzheimer's disease patients and age-matched controls.

Sex	Age (years)	PMD (hours)	FDX	Brain region
M	89	8.75	AD	PFC
F	80	7	AD	PFC
F	79	9.5	AD	PFC
M	79	-	control, unknown	PFC
M	80	-	control, unknown	PFC
F	82	-	control, unknown	PFC
M	81	-	control, unknown	PFC
M	84	-	control, unknown	PFC
F	90	-	control, unknown	PFC
F	61	6	AD	Hippocampus
F	85	14	AD	Hippocampus
F	76	23	AD	Hippocampus
F	56	12	control, unknown	Hippocampus
-	-	-	control, unknown	Hippocampus
-	-	-	control, unknown	Hippocampus

Abbreviations: AD, Alzheimer's disease; F, female; FDX, functional diagnosis; M, male; PFC, prefrontal cortex; PMD, post mortem delay.

Supplemental Data Table 5: Clinical and pathological characteristics of human post mortem tissue samples from Parkinson's disease patients and age-matched controls.

Sex	Age (years)	Race	PMD (hours)	FDX	CERAD	BRAAK	Brain region
M	76	W	18	PD	0	2	SN
M	86	W	19	Lewy body disease, incipient AD	0	2	SN
M	90	W	7	PD, neurofibrillary tangles and tau pathology BRAAK 4, TBI possible	0	4	SN
M	92	W	17	PD, dementia	0	3	SN
M	80	W	9.5	PD, dementia	0	3	SN
F	85	W	19	PD, dementia, FTD, cerebrovascular disease	0	4	SN
M	76	W	13.5	PD	0	1	SN
M	76	W	25	Control	NA	NA	SN
M	82	W	20	Control	NA	NA	SN
M	81	W	26	Control	NA	NA	SN
M	76	W	9	Control	NA	NA	SN
M	83	W	25	Control, vascular disease	NA	NA	SN

Abbreviations: AD, Alzheimer's disease; BRAAK, Braak staging[52]; CERAD, Consortium to Establish a Registry for Alzheimer's Disease (CERAD) neurocognitive test battery result; F, female; FDX, functional diagnosis; FTD, Frontotemporal dementia; M, male; PMD, post mortem delay; SN, substantia nigra; NA, not applicable; TBI, traumatic brain injury; W, white (Caucasian).

Supplemental Data Table 6: Clinical and pathological characteristics of human post mortem tissue samples from Huntington's disease patients and age-matched controls.

Sex	Age (years)	PMD (hours)	FDX	CAG Number	Vonsattel grade	Brain region
F	59	7	HD	47	HD4	Caudate nucleus
M	54	8	HD	46	HD4	Caudate nucleus
F	45	16	HD	Unknown	HD4	Caudate nucleus
M	51	16	Control	Unknown	N/A	Caudate nucleus
M	54	6.5	Control	Unknown	N/A	Caudate nucleus
F	63	16	Control	16	N/A	Caudate nucleus
M	60	17	Control	17	N/A	Caudate nucleus
M	41	16	Control	22	N/A	Caudate nucleus

Abbreviations: HD, Huntington's disease; CAG Number, number of CAG repeats in the huntingtin gene; F, female; M, male; FDX, functional diagnosis; PMD, post mortem delay

Supplemental Data Table 7: Clinical and pathological characteristics of human post mortem tissue samples from amyotrophic lateral sclerosis patients and age-matched controls.

Sex	Age (years)	PMD (hours)	FDX	Brain Atrophy	Dementia	Brain region
F	67	19	ALS	None	No	Motor cortex
M	67	8	ALS	None	No	Motor cortex
M	56	4	ALS	Severe	No	Motor cortex
F	56	12	Control	None	No	Motor cortex
-	-	-	Control	None	No	Motor cortex
-	-	-	Control	None	No	Motor cortex

Abbreviations: ALS, Amyotrophic lateral sclerosis; F, female; FDX, functional diagnosis; M, male; PMD, post mortem delay.

References for Supplemental Data

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