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Supplementary Information for

Invariable stoichiometry of ribosomal proteins in mouse brain tissues with aging

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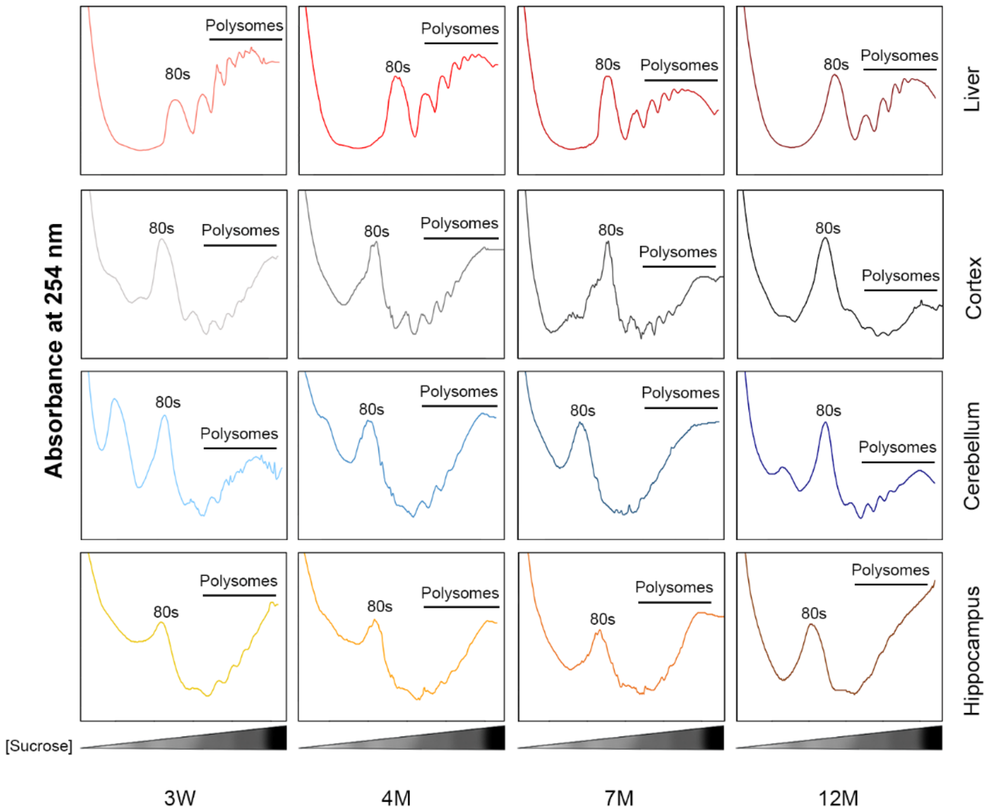

Figure S1. Polysome profiles of brain and liver tissues. 80S and polysomal fractions were separated on sucrose gradients. For clear separation between 80S and polysomes, the fraction of the disome peak was omitted. W, week; M, month.

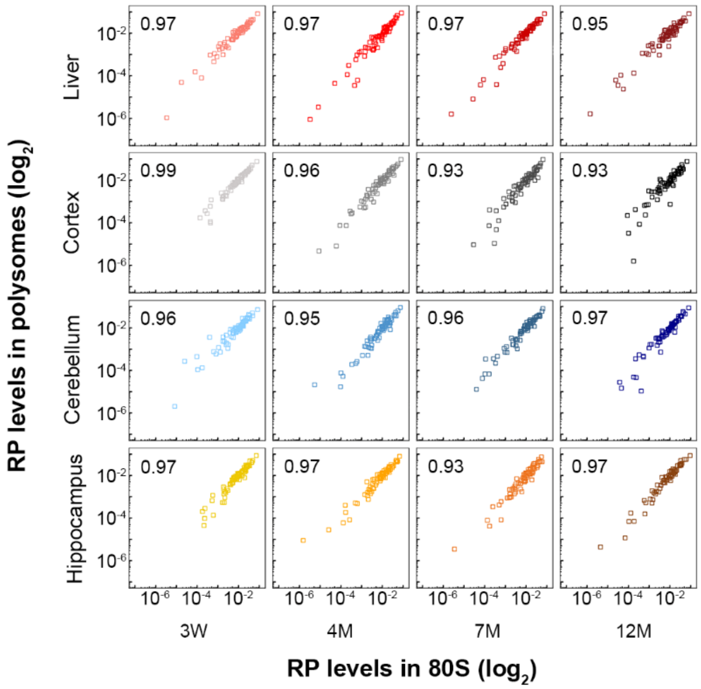

Figure S2. Correlation between the RP levels in the 80S and polysomal fraction. R^2, Pearson correlation coefficient is given in each plot and also summarized in Table S3. W, week; M, month.

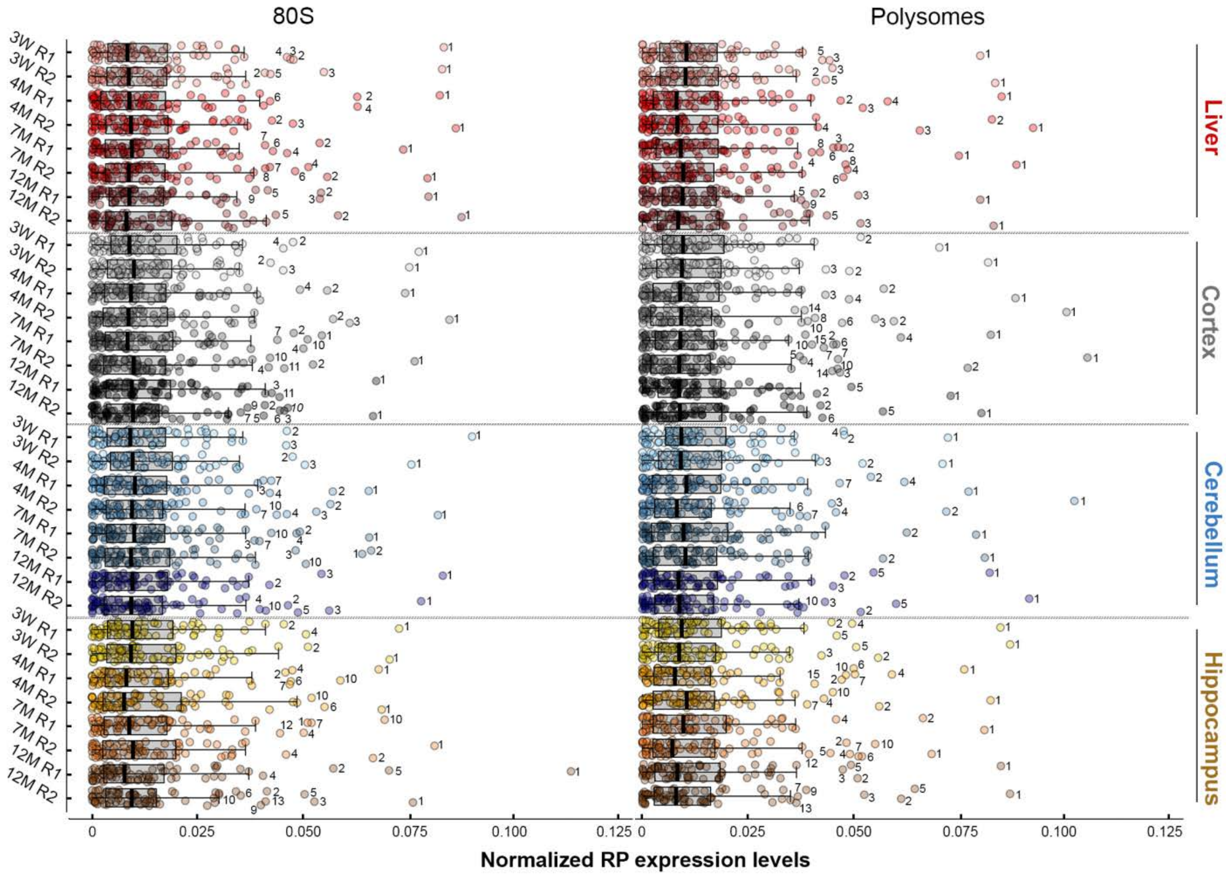

Figure S3. Expression span of RPs in the replicates. Boxplot of the expression levels of RPs in 80S and polysomes in each analyzed sample. Each dot is a single RP. R1, R2 denote each of the two biological replicate; W, week and M, month. Boxplots are median of expression ± SD (n=2). The outliers are RPs with the highest detected levels and are designated as follows: 1 – uS3; 2 – uS2; 3 – uL4; 4 – uS4; 5 – RACK1; 6 – eL13; 7 – uL30; 8 – eS10; 9 – uL18; 10 – uL15; 11 – eS4; 12 – eL18; 13 – eS8; 14 – uL10; 15 – eS25. Both biological replicates are highly similar (p-values, Wilcoxon rank sum test, or each replicate pair are summarized in Table S3).

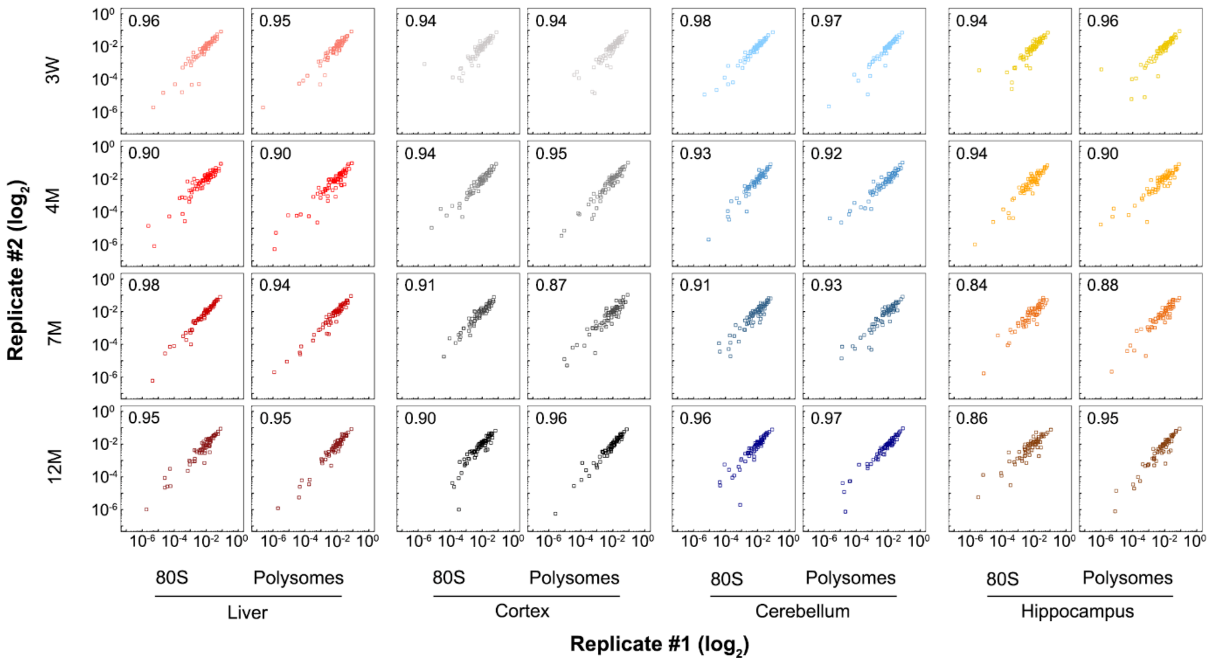

Figure S4. Correlation between biological replicates. The RPs in each biological replicate consisted of pooled homogenized tissues from three littermates. R^2, Pearson correlation coefficient is given in each plot and also summarized in Table S3. W, week; M, month.

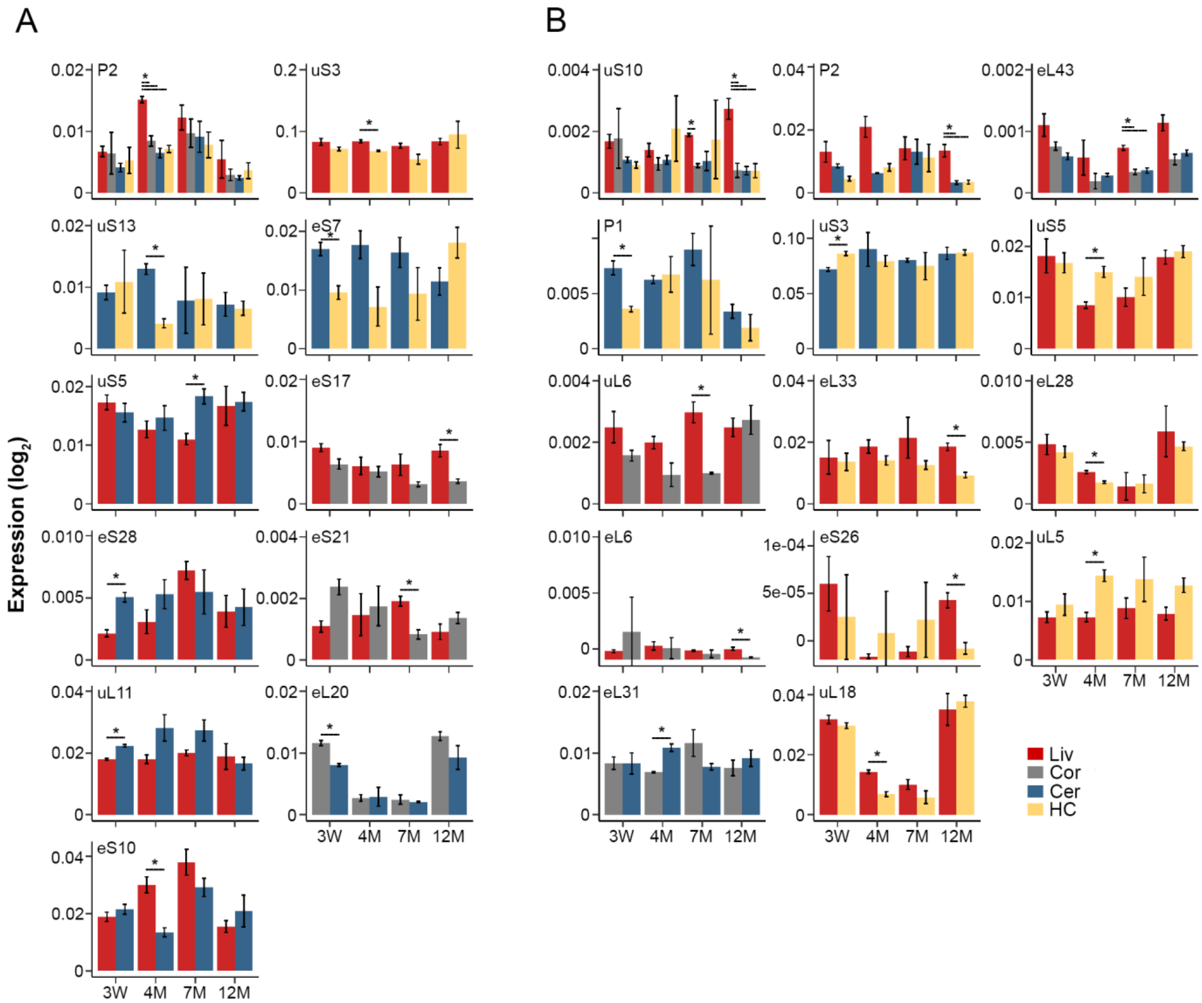

Figure S5. The expression level of some RPs changes across tissues which changes however score insignificant. *, P ≤ 0.05 in two tailed Student's *t*-test, which is insignificant by FDR < 0.1 considering the fluctuations between two biological replicates. W, week; M, month.

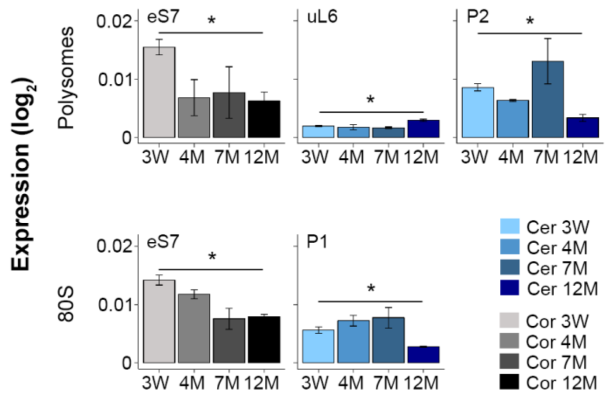

Figure S6. The expression level of few RPs changes with age which scores insignificant. *, P ≤ 0.05 in two tailed Student's *t*-test, which is insignificant by FDR < 0.1 considering the fluctuations between two biological replicates. W, week; M, month.

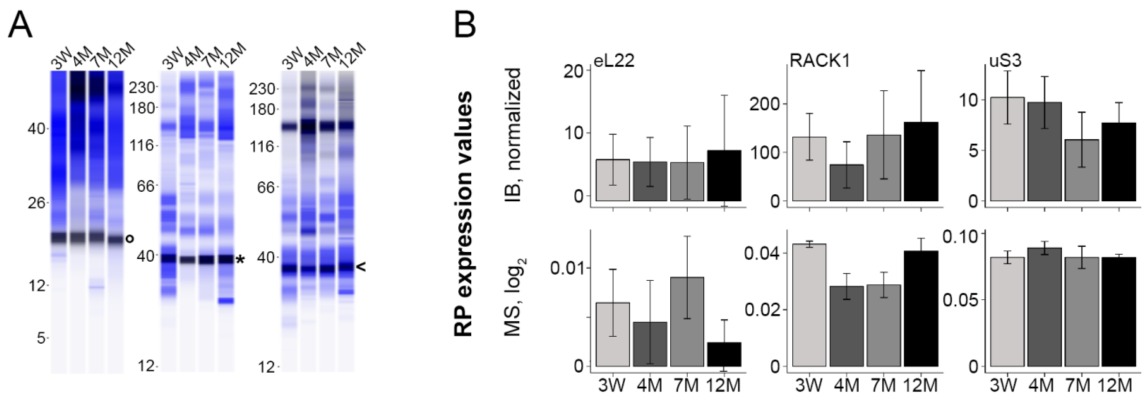

Figure S7. Immunoblot analysis of the expression level of three liver RP proteins show no changes. (A) Representative immunoblot of polysomal fraction from liver samples analyzed by capillary electrophoreses and probed with antibodies recognizing eL22 (o), RACK1 (*) and uS3 (<). The immunofluorescence signal is overlaid with signal from the total protein staining. Protein weight markers in kDa are shown on the left of each blot. (B) The signal for each RP from the immunoblot (IB) is normalized to the total protein concentration of each samples using the total protein staining. Data are means ± SEM, n=4-6 biological replicates. For comparison, the RP expression level of these three proteins from the LC/MS-MS are shown (MS).

Table S1. Number of detected and predicted peptides for each RP. n.d., not detected. The new nomenclature of naming ribosomal protein is considered (1).

RPs large subunit	# of detected unique peptides in LC-MS/MS	# of *in silico* predicted unique peptide[b]	RPs small subunit	# of detected unique peptides in LC-MS/MS	# of *in silico* predicted unique peptides[b]
uL1	5	19	**RACK1**	16	22
uL2	7	20	**eS1**	10	26
uL3	12	34	**uS2**	16	20
uL4	18	33	**uS3**	18	21
uL5	4	15	**eS4**	13	22
uL6	4	13	**uS4**	11	22
eL6	7	26	**uS5**	10	25
eL8	15	20	**eS6**	9	22
uL11	6	12	**uS7**	6	15
uL13	9	22	**eS7**	8	16
eL13	9	20	**uS8**	7	12
uL14	6	10	**eS8**	10	15
eL14	4	18	**uS9**	7	14
uL15	4	14	**uS10**	3	8
eL15	7	19	**eS10**	6	17
uL16	2	20	**uS11**	6	8
uL18	11	28	**uS12**	1	11
eL18	6	13	**eS12**	7	10
eL19	5	17	**uS13**	11	14
eL20	6	18	**uS14**	1	8
eL21	5	16	**uS15**	6	14
uL22	8	16	**uS17**	8	14
eL22	4	10	**eS17**	9	10
uL23	6	11	**uS19**	n.d.	10
uL24	7	14	**eS19**	6	16
eL24	5	12	**eS21**	3	8
eL27	7	12	**eS24**	5	11
eL28	3	16	**eS25**	4	9
uL29	5	9	**eS26**	1	9
eL29	n.d.	13	**eS27**	n.d.	6
uL30	12	23	**eS28**	3	5
eL30	4	10	**eS30**	2	5
eL31	2	11	**eS31**	2	15
eL32	6	12	**eS27L**	1	6
eL33	3	12			
eL34	n.d.	11			
eL36	2	8			
eL37	n.d.	10			
eL38	5[a]	4			
eL39	2	3			
eL40	n.d.	17			
eL41	n.d.	0			
eL42	3	10			
eL43	2	6			
uL10	12	24			
P1	1	5			
P2	4	6			
eL22L	1	12			

[a]Note that in some cases the number of detected peptides can be higher than that of the *in silico* predicted peptides as peptides with modified amino acids are considered as unique peptide.
[b]All lengths of *in silico* predicted peptides were considered without length restriction. The shortest peptides were composed of three amino acids.

Table S2. Peptide coverage of detected RPs. n.d., not detected.

RPs large subunit	Length, amino acids	Total amino acid coverage, %	Sequence and position of the detected peptides[a]
		Large subunit	
uL1	217	23.04	5-VSRDTLYEAVR-15; 79-AVDIPHMDIEALKK-92; 79-AVDIPHMDIEALKK-92; 106-KYDAFLASESLIK-118; 107-YDAFLASESLIK-118; 162-VLCLAVAVGHVK-173
uL2	257	40.86	43-GIVKDIIHDPGR-54; 73-TELFIAAEGIHTGQFVYCGK-92; 93-KAQLNIGNVLPVGTMPEGTIVCCLEEKPGDR-123; 129-ASGNYATVISHNPETK-144; 164-AVVGVVAGGGR-174 164-AVVGVVAGGGRIDKPILK-181; 234-KVGLIAAR-241
uL3	403	30.27	11-HGSLGFLPR-19; 35-DDASKPVHLTAFLGYK-50; 104-TVFAEHISDECK-115; 145-QLEKDFNSMK-154 177-KAHLMEIQVNGGTVAEK-193; 178-AHLMEIQVNGGTVAEK-193; 199-ERLEQQVPVNQVFGQDEMIDVIGVTK-224; 201-LEQQVPVNQVFGQDEMIDVIGVTK-224; 250-KVACIGAWHPAR-261; 251-VACIGAWHPAR-261; 287-IGQGYLIK-294; 301-NNASTDYDLSDK-312
uL4	419	36.04	1-MACARPLISVYSEK-14; 1-MACARPLISVYSEKGESSGK-20; 30-APIRPDIVNFVHTNLR-45; 30-APIRPDIVNFVHTNLRK-46; 47-NNRQPYAVSELAGHQTSAESWGTGR-71; 50-QPYAVSELAGHQTSAESWGTGR-71; 121-RYAICSALAASALPALVMSK-140; 122-YAICSALAASALPALVMSK-140; 144-IEEVPELPLVVEDK-157; 206-GPCIIYNEDNGIIK-219; 149-FCIWTESAFR-258; 249-FCIWTESAFRK-259; 259-KLDELYGTWR-268; 259-KLDELYGTWRK-269; 260-LDELYGTWR-268; 284-MMNTDLSR-291; 353-KLEAAATALATK-364; 354-LEAAATALATK-364
uL5	178	17.42	19-KLCLNICVGESGDR-32; 20-LCLNICVGESGDR-32; 30-LCLNICVGESGDRLTR-35; 39-VLEQLTGQTPVFSK-52
uL6	192	29.69	3-TILSNQTVDIPENVEITLK-21; 37-DFNHINVELSLLGKK-51; 72-TICSHVQNMIK-82; 130-TGVACSVSQAQK-141
eL6	296	25	123-YYPTEDVPR-131; 175-QLDSGLLLVTGPLVINRVPLR-195; 175-QLDSGLLLVTGPLVINRVPLRR-196; 209-VDISDVKIPK-218; 219-HLTDAYFK-226; 235-HQEGEIFDTEKEK-247; 269-IKAVPQLQGYLR-280
eL8	266	37.22	26-KVVNPLFEK-34; 27-VVNPLFEK-34; 38-NFGIGQDIQPK-48; 38-NFGIGQDIQPKR-49; 76-VPPAINQFTQALDR-89; 90-QTATQLLK-97; 138-AGVNTVTTLVENK-150; 138-AGVNTVTTLVENKK-151; 176-KMGVPYCIIK-185; 177-MGVPYCIIK-185; 197-KTCTTVAFTQVNSEDKGALAK-217; 198-TCTTVAFTQVNSEDK-212; 198-TCTTVAFTQVNSEDKGALAK-217; 235-RHWGGNVLGPK-245; 236-HWGGNVLGPK-245
uL11	165	49.70	32-IGPLGLSPK-40; 78-QAQIEVVPSASALIIK-83; 100-HSGNITFDEIVNIAR-114; 124-ELSGTIKEILGTAQSVGCNVDGR-146;131-EILGTAQSVGCNVDGR-146; 147-HPHDIIDDINSGAVECPAS-165
uL13	203	34.98	1-MAEGQVLVLDGR-12; 1-MAEGQVLVLDGRGHLLGR-18; 38-CEGINISGNFYR-49; 54-YLAFLRK-60; 102-LKVLDGIPPPYDK-114; 104-VLDGIPPPYDKK-115; 117-RMVVPAALK-125; 118-MVVPAALK-125; 149-YQAVTATLEEK-159
eL13	211	38.389	6-NGMILKPHFHK-16; 22-VDTWFNQPAR-31; 22-VDTWFNQPARK-32; 75-GFSLEELR-82; 93-TIGISVDPR-101; 106-STESLQANVQR-116; 122-SKLILFPR-129; 136-KGDSSAEELKLATQLTGPVMPIR-158; 146-LATQLTGPVMPIR-158
uL14	140	35	14-FRISLGLPVGAVINCADNTGAK-35; 16-ISLGLPVGAVINCADNTGAK-35; 49-LNRLPAAGVGDMVMATVK-66; 52-LPAAGVGDMVMATVK-66; 52-LPAAGVGDMVMATVKK-67; 124-ECADLWPR-131
eL14	217	21.66	12-VAYISFGPHAGK-23; 24-LVAIVDVIDQNR-35; 54-CMQLTDFILK-63; 148-AAIAAAAAAAAAK-160
uL15	148	23.65	66-NQSFCPTVNLDK-77; 78-LWTLVSEQTR-87; 93-NKTGVAPIIDVVR-105; 95-TGVAPIIDVVR-105
eL15	204	28.92	1-MGAYKYIQELWR-12; 6-YIQELWR-12; 57-QGYVIYR-63; 115-VLNSYWVGEDSTYK-128; 129-FFEVILIDPFHK-140 144-RNPDTQWITKPVHK-157; 145-NPDTQWITKPVHK-157
uL16	214	6.54	176-FNADEFEDMVAEK-188; 176-FNADEFEDMVAEKR-189
uL18	297	44.44	55-VTNRDIICQIAYAR-68; 59-DIICQIAYAR-68; 69-IEGDMIVCAAYAHELPK-85; 90-VGLTNYAAAYCTGLLLAR-107; 153-TTTGNKVFGALK-164; 165-GAVDGGLSIPHSTKR-179; 179-RFPGYDSESKEFNAEVHR-196; 197-KHIMGQNVADYMR-209; 198-HIMGQNVADYMR-209;

			210-YLMEEDEDAYKK-221; 229-NNVTPDMMEEMYKK-242;
eL18	188	21.81	38-RTNSTFNQVVLK-49; 39-TNSTFNQVVLK-49; 39-TNSTFNQVVLKR-50; 79-TAVVVGTVTDDVR-91; 120-ILTFDQLALESPK-132; 120-ILTFDQLALESPKGR-134
eL19	196	18.88	20-KKVWLDPNETNEIANANSR-38; 21-KVWLDPNETNEIANANSR-38; 22-VWLDPNETNEIANANSR-38; 44-LIKDGLIIR-52; 154-LLADQAEAR-162
eL20	176	28.98	42-SRFWYFVSQLKK-53; 57-SSGEIVYCGQVFEK-70; 75-VKNFGIWLR-83; 77-NFGIWLR-83; 96-EYRDLTTAGAVTQCYR-111; 99-DLTTAGAVTQCYR-111
eL21	160	37.5	21-KHGVVPLATYMR-32; 22-HGVVPLATYMR-32; 36-KGDIVDIKGMGTVQK-50; 64-VYNVTQHAVGIIVNK-78; 143-TNGKEPELLEPIPYEFMA-160
uL22	184	38.59	4-YSLDPENPTK-13; 75-QWGWTQGR-82; 75-QWGWTQGRWPK-85; 86-KSAEFLLHMLK-96; 87-SAEFLLHMLK-96; 97-NAESNAELKGLDVDSLVIEHIQVNK-121; 106-GLDVDSLVIEHIQVNK-121 154-EQIVPKPEEEVAQK-167
eL22	128	21.09	53-AGNLGGGVVTIER-65; 68-SKITVTSEVPFSK-80; 68-SKITVTSEVPFSKR-81; 70-ITVTSEVPFSKR-81
uL23	156	28.21	69-NKLDHYAIIK-78; 71-LDHYAIIKFPLTTESAMK-88; 79-FPLTTESAMK-88; 89-KIEDNNTLVFIVDVK-103; 115-KLYDIDVAK-123; 116-LYDIDVAK-123
uL24	145	38.62	1-MKFNPFVTSDR-11; 3-FNPFVTSDR-11; 29-IMSSPLSK-36; 46-SMPIRKDDEVQVVR-59; 76-KKYVIYIER-84; 78-YVIYIER-84 90-ANGTTVHVGIHPSK-103
eL24	157	29.30	1-MKVELCSFSGYK-12; 3-VELCSFSGYK-12; 24-TDGKVFQFLNAK-35; 48-QINWTVLYR-56; 81-AITGASLADIMAK-93
eL27	136	47.06	10-VVLVLAGR-17; 28-NIDDGTSDRPYSHALVAGIDR-48; 28-NIDDGTSDRPYSHALVAGIDRYPR-51; 74-VYNYNHLMPTR-84; 94-TVVNKDVFRDPALK-107; 99-DVFRDPALK-107; 127-NKWFFQK-133
eL28	137	21.90	1-MSAHLQWMVVR-11; 12-NCSSFLIK-19; 23-QTYSTEPNNLK-33
uL29	123	30.08	20-QLDDLKVELSQLR-32; 57-VLTVINQTQK-66; 57-VLTVINQTQKENLR-70; 77-KYKPLDLRPK-86; 78-YKPLDLRPK-86
eL29	n.d.		
uL30	270	30	10-KVATVPGTLK-19; 31-KKVPAVPETLK-41; 32-KVPAVPETLK-41; 99-KAGNFYVPAEPK-110; 100-AGNFYVPAEPK-110; 129-KVLQLLR-135; 138-QIFNGTFVK-146; 171-SVNELIYK-178; 188-RIALTDNSLIAR-199; 189-IALTDNSLIAR-199; 223-FKEANNFLWPFK-234; 225-EANNFLWPFK-234
eL30	115	51.30	45-LVILANNCPALR-56; 57-KSEIEYYAMLAK-68; 69-TGVHHYSGNNIELGTACGK-87; 91-VCTLAIIDPGDSDIIR-106
eL31	125	18.4	93-NEDEDSPNKLYTLVTYVPVTTFK-115; 102-LYTLVTYVPVTTFK-115
eL32	135	25.93	49-FKGQILMPNIGYGSNK-64; 49-FKGQILMPNIGYGSNKK-65; 51-GQILMPNIGYGSNK-64; 51-GQILMPNIGYGSNKK-65 68-HMLPSGFR-75;84-ELEVLLMCNK-93
eL33	110	22.73	30-IEGVYARDETEFYLGKR-46; 37-DETEFYLGKR-46; 103-VMLYPSRI-110
eL34	n.d.		
eL36	105	21.91	1-MALRYPMAVGLNK-13; 46-EVCGFAPYER-55
eL37	n.d.		
eL38	70	52.857	4-KIEEIKDFLLTAR-16; 5-IEEIKDFLLTAR-16; 41-YLYTLVITDKEK-52; 56-LKQSLPPGLAVK-67; 58-QSLPPGLAVK-67
eL39	51	23.529	17-QKQNRPIPQWIR-28; 19-QNRPIPQWIR-28
eL40	n.d.		
eL41	n.d.		
eL42	106	25.48	45-QSGYGGQTKPIFR-57; 65-KIVLRLECVEPNCR-78; 70-LECVEPNCR-78
eL43	92	32.61	51-AVGIWHCGSCMK-62; 63-TVAGGAWTYNTTSAVTVK-80
uL10	317	46.06	17-IIQLLDDYPK-26; 27-CFIVGADNVGSK-38; 84-GNVGFVFTK-92; 93-EDLTEIRDMLLANK-106; 93-EDLTEIRDMLLANKVPAAAR-112; 100-DMLLANKVPAAAR-112; 113-AGAIAPCEVTVPAQNTGLGPEK-134; 113-AGAIAPCEVTVPAQNTGLGPEKTSFFQALGITTK-146; 135-TSFFQALGITTK-146; 150-GTIEILSDVQLIK-162; 248-VLALSVETEYTFPLTEK-264; 267-AFLADPSAFAAAAPAAAATTAAPAAAAAPAK-297
P1	114	14.04	34-AAGVSVEPFWPGLFAK-49
P2	115	41.74	3-YVASYLLAALGGNSSPSAK-21; 25-KILDSVGIEADDDRLNK-4; 26-ILDSVGIEADDDRLNK-41; 50-NIEDVIAQGVGK-61
eL22L	122	9.84	48-TGNLGNVVHIER-59

	Small subunit		
RACK1	317	68.14	13-GHNGWVTQIATTPQFPDMILSASR-36; 37-DKTIIMWK-44; 89-LWDLTTGTTTR-99; 89-LWDLTTGTTTRR-100; 107-DVLSVAFSSDNR-118; 131-LWNTLGVCK-139 140-YTVQDESHSEWVSCVR-155; 156-FSPNSSNPIIVSCGWDK-172; 184-LKTNHIGHTGYLNTVTVSPDGSLCASGGK-212; 186-TNHIGHTGYLNTVTVSPDGSLCASGGK-212; 213-DGQAMLWDLNEGK-225; 226-HLYTLDGGDIINALCFSPNR-245; 246-YWLCAATGPSIK-257; 258-IWDLEGK-264; 281-AEPPQCTSLAWSADGQTLFAGYTDNLVR-208; 309-VWQVTIGTR-317
eS1	264	40.53	35-APAMFNIR-42; 66-VFEVSLADLQNDEVAFR-82; 66-VFEVSLADLQNDEVAFRK-83; 84-FKLITEDVQGK-94; 95-NCLTNFHGMDLTR-107; 137-LFCVGFTK-144; 168-MMEIMTR-174; 175-EVQTNDLKEVVNK-187; 200-ACQSIYPLHDVFVR-213 250-VERADGYEPPVQESV-264
uS2	295	65.42	1-MSGALDVLQMK-11; 1-MSGALDVLQMKEEDVLK-17; 18-FLAAGTHLGGTNLDFQMEQYIYK-40; 42-KSDGIYIINLK-52; 42-KSDGIYIINLKR-53; 43-SDGIYIINLK-52; 64-AIVAIENPADVSVISSR-80; 86-AVLKFAAATGATPIAGR-102; 90-FAAATGATPIAGR-102; 103-FTPGTFTNQIQAAFR-117; 103-FTPGTFTNQIQAAFREPR-120; 121-LLVVTDPR-128; 129-ADHQPLTEASYVNLPTIALCNTDSPLR-155; 156-YVDIAIPCNNK-166; 167-GAHSVGLMWWMLAR-180; 192-EHPWEVMPDLYFYRDPEEIEKEEQAAAEK-220
uS3	243	73.66	10-KFVADGIFK-18; 11-FVADGIFK-18; 19-AELNEFLTR-27; 28-ELAEDGYSGVEVR-40; 46-TEIIILATR-54; 66-IRELTAVVQK-75; 66-IRELTAVVQKR-76; 77-FGFPEGSVELYAEK-90; 95-GLCAIAQAESLR-106; 107-YKLLGGLAVR-116; 133-GCEVVVSGK-141; 152-FVDGLMIHSGDPVNYYVDTAVR-173; 179-QGVLGIKVK-187; 186-VKIMLPWDPSGK-197; 188-IMLPWDPSGK-197; 202-KPLPDHVSIVEPKDEILPTTPISEQK-227; 215-DEILPTTPISEQK-227; 228-GGKPEPPAMPQPVPTA-243
eS4	263	47.91	38-LRECLPLIIFLR-49; 52-LKYALTGDEVKK-63; 76-VRTDITYPAGFMDVISIDK-94; 76-VRTDITYPAGFMDVISIDKTGENFR-100; 78-TDITYPAGFMDVISIDK-94; 146-TIRYPDPLIK-155; 149-YPDPLIK-155; 156-VNDTIQIDLETGK-168; 169-ITDFIKFDTGNLCMVTGGANLGR-191; 175-FDTGNLCMVTGGANLGR-191; 201-HPGSFDVVHVK-211; 201-HPGSFDVVHVKDANGNSFATR-221; 231-GNKPWISLPR-240
uS4	194	37.63	23-SRLDQELKLIGEYGLR-38; 31-LIGEYGLR-38; 59-ELLTLDEKDPR-69; 59-ELLTLDEKDPRR-70; 70-RLFEGNALLR-79; 71-LFEGNALLR-79; 92-MKLDYILGLK-101; 102-IEDFLER-108; 139-KQVVNIPSFIVR-150; 140-QVVNIPSFIVR-150; 156-HIDFSLR-162
uS5	293	35.15	55-AEDKEWIPVTK-65; 126-AFVAIGDYNGHVGLGVK-142; 160-LSIVPVRR-167 201-GTGIVSAPVPK-211; 212-KLLMMAGIDDCYTSAR-227; 213-LLMMAGIDDCYTSAR-227; 228-GCTATLGNFAK-238 247-TYSYLTPDLWK-257; 247-TYSYLTPDLWKETVFTK-263 264-SPYQEFTDHLVK-275
eS6	249	25.30	1-MKLNISFPATGCQK-14; 3-LNISFPATGCQK-14 31-RMATEVAADALGEEWKGYVVR-51; 32-MATEVAADALGEEWK-46; 32-MATEVAADALGEEWKGYVVR-51; 116-KGEKDIPGLTDTTVPR-131; 117-GEKDIPGLTDTTVPR-131; 143-KLFNLSKEDDVR-154; 144-LFNLSKEDDVR-154
uS7	204	31.86	1-MTEWEAATPAVAETPDIK-18; 1-MTEWEAATPAVAETPDIKLFGK-22; 23-WSTDDVQINDISLQDYIAVK-42; 137-QAVDVSPLR-145; 146-RVNQAIWLLCTGAR-159; 147-VNQAIWLLCTGAR-159
eS7	194	51.55	8-IVKPNGEKPDEFESGISQALLELEMNSDLK-37; 58-KAIIIFVPVPQLK-70; 59-AIIIFVPVPQLK-70; 121-TLTAVHDAILEDLVFPSEIVGKR-143; 161-AQQNNVEHKVETFSGVYK-178; 161-AQQNNVEHKVETFSGVYKK-179; 170-VETFSGVYKK-179; 180-LTGKDVNFEFPEFQL-194
uS8	130	46.15	4-MNVLADALK-12; 37-FLTVMMK-43; 44-HGYIGEFEIIDDHR-57; 61-IVVNLTGR-68; 61-IVVNLTGRLNK-71; 79-FDVQLKDLEKWQNNLLPSR-97; 89-WQNNLLPSR-97
eS8	208	54.81	57-ALRLDVGNFSWGSECCTR-74; 60-LDVGNFSWGSECCTR-74; 78-IIDVVYNASNNELVR-92; 99-NCIVLIDSTPYR-110; 111-QWYESHYALPLGR-123; 129-LTPEEEEILNKKR-141; 158-ISSLLEEQFQQGK-170; 171-LLACIASRPGQCGR-184; 185-ADGYVLEGKELEFYLR-200; 194-ELEFYLR-200
uS9	146	39.73	1-MPSKGPLQSVQVFGR-15; 5-GPLQSVQVFGR-15; 34-VNGRPLEMIEPR-45; 74-GGGHVAQIYAIR-85; 107-EIKDILIQYDR-117; 110-DILIQYDR-117; 118-TLLVADPR-125
uS10	119	26.05	1-MAFKDTGKTPVEPEVAIHR-19; 9-TPVEPEVAIHR-19; 88-LIDLHSPSEIVK-99
eS10	165	39.39	32-HPELADKNVPNLHVMK-47; 56-GYVKEQFAWR-65; 81-DYLHLPPEIVPATLR-95; 130-SAVPPGADKKAEAGAGSATEFQFR-153; 139-KAEAGAGSATEFQFR-153; 140-AEAGAGSATEFQFR-153

uS11	151	33.113	62-VKADRDESSPYAAMLAAQDVAQR-84; 64-ADRDESSPYAAMLAAQDVAQR-84; 87-ELGITALHIK-96; 126-IGRIEDVTPIPSDSTR-141; 129-IEDVTPIPSDSTR-141; 129-IEDVTPIPSDSTRR-142
uS12	143	7.69	125-VANVSLLALYK-135
eS12	132	59.09	1-MAEEGIAAGGVMDVNTALQEVLK-23; 46-QAHLCVLASNCDEPMYVK-63; 85-LGEWVGLCK-93; 102-KVVGCSCVVVK-112; 102-KVVGCSCVVVKDYGK-116; 117-ESQAKDVIEEYFK-129; 122-DVIEEYFK-129
uS13	152	49.34	1-MSLVIPEK-8; 1-MSLVIPEKFQHILR-14; 25-KIAFAITAIK-34; 26-IAFAITAIK-34; 55-RAGELTEDEVER-66; 56-AGELTEDEVER-66; 56-AGELTEDEVERVITIMQNPR-75; 67-VITIMQNPR-75; 76-QYKIPDWFLNR-86 95-YSQVLANGLDNK-106; 95-YSQVLANGLDNKLREDLER-113
uS14	56	21.43	1-MGHQQLYWSHPR-12
uS15	151	37.75	10-GLSQSALPYR-19; 28-LTSDDVKEQIYK-39; 43-KGLTPSQIGVILR-55; 44-GLTPSQIGVILR-55; 79-GLAPDLPEDLYHLIK-93; 115-LILIESR-121
uS17	158	46.20	13-QPTIFQNK-20; 49-EAIEGTYIDKK-59; 59-KCPFTGNVSIR-69; 60-CPFTGNVSIR-69; 72-ILSGVVTK-79; 91-DYLHYIR-97; 108-NMSVHLSPCFR-118; 119-DVQIGDIVTVGECRPLSK-136
eS17	135	53.33	33-RVCEEIAIIPSK-44; 33-RVCEEIAIIPSKK-45; 34-VCEEIAIIPSK-44; 34-VCEEIAIIPSKK-45; 50-IAGYVTHLMK-59; 81-RDNYVPEVSALDQEIIEVDPDTK-103; 81-RDNYVPEVSALDQEIIEVDPDTKEMLK-107; 82-DNYVPEVSALDQEIIEVDPDTK-103; 108-LLDFGSLSNLQVTQPTVGMNFK-129
uS19	n.d.		
eS19	145	45.52	1-MPGVTVKDVNQQEFVR-16; 8-DVNQQEFVR-16; 28-LKVPEWVDTVK-38; 42-HKELAPYDENWFYTR-56; 102-RVLQALEGLK-111; 130-DLDRIAGQVAAANK-143
eS21	83	40.96	1-MQNDAGEFVDLYVPRK-16; 28-DHASIQMNVAEVDR-41 28-DHASIQMNVAEVDRTTGR-45
eS24	133	27.07	1-MNDTVTIR-8; 21-KQMVIDVLHPGK-32; 22-QMVIDVLHPGK-32; 69-TTGFGMIYDSLDYAK-83; 69-TTGFGMIYDSLDYAKK-84
eS25	125	20.8	42-DKLNNLVLFDK-52; 42-DKLNNLVLFDKATYDK-57; 44-LNNLVLFDK-52; 67-LITPAVVSER-76
eS26	115	10.44	71-LHYCVSCAIHSK-82
eS27	n.d.		
eS28	69	27.54	48-GPVREGDVLTLLESER-63; 52-EGDVLTLLESER-63; 52-EGDVLTLLESEREAR-66
eS30	59	20.34	41-RFVNVVPTFGK-51; 42-FVNVVPTFGKK-52
eS31	156	12.178	120-ECPSDECGAGVFMGSHFDR-138
eS27L	84	14.29	6-DLLHPSLEEEKK-17

[a]Numbers denote the position of the first and last amino acid of the peptide in the RP sequence.

Table S3. Correlation between RP levels in both biological replicates and between different tissues and ages. R^2, Pearson correlation coefficient for expression in tissues (upper panel, data summarized in Fig. 1B) and ages (lower panel, data summarized in Fig. 1C). Cer, cerebellum; HC, hippocampus; Cor, cortex, Liv, liver; P, polysomes; W, week; M, month.

Compared to Liv 80S	Cer 80S	Cor 80S	HC 80S	Compared to Liv P	Cer P	Cor P	HC P
3 weeks R^2	0.98	0.97	0.96	3 weeks R^2	0.94	0.95	0.97
4 months R^2	0.93	0.95	0.91	4 months R^2	0.95	0.97	0.91
7 months R^2	0.94	0.93	0.89	7 months R^2	0.95	0.94	0.92
12 months R^2	0.97	0.94	0.96	12 months R^2	0.95	0.92	0.94

Comparisons	Cer 80S	Cer P	Cor 80S	Cor P	HC 80S	HC P	Liv 80S	Liv P
3W vs. 4M R^2	0.91	0.96	0.94	0.95	0.89	0.90	0.95	0.89
3W vs. 7M R^2	0.89	0.94	0.90	0.93	0.88	0.89	0.89	0.86
3W vs. 12M R^2	0.97	0.95	0.94	0.95	0.94	0.97	0.98	0.97

Table S4. Correlation between the RP expression levels in different samples. Pearson correlation coefficient (R^2) for the 80S and polysomal fractions (upper panel, data summarized in Fig. S2) and the whole RPs set (global) or for RPs within expression values in the lower 1/3rd between biological replicates (lower panel, data summarized in Fig. S4). P values for each two biological replicates from Wilcoxon rank sum test (middle panel, data summarized in Fig. S3). Cer, cerebellum; HC, hippocampus; Cor, cortex; Liv, liver; P, polysomes; W, week; M, month.

Ages	Cer 80S vs P	Cor 80S vs P	HC 80S vs P	Liv 80S vs P
3 weeks	0.96	0.99	0.97	0.97
4 months	0.95	0.96	0.97	0.97
7 months	0.96	0.93	0.93	0.97
12 months	0.97	0.93	0.97	0.95

Samples	Cer 80S	Cer P	Cor 80S	Cor P	HC 80S	HC P	Liv 80S	Liv P
3 weeks	0.90	0.97	0.93	0.85	0.92	0.92	0.95	0.94
4 months	0.79	0.98	0.77	0.75	0.89	0.66	0.57	0.85
7 months	0.79	0.86	0.99	0.80	0.78	0.65	0.85	0.89
12 months	0.73	0.89	0.98	0.77	0.67	0.62	0.72	0.64

	Cer 80S	Cer P	Cor 80S	Cor P	HC 80S	HC P	Liv 80S	Liv P
3W								
R^2 global	0.98	0.97	0.94	0.94	0.94	0.96	0.96	0.95
R^2 lower 1/3rd	0.92	0.94	0.75	0.84	0.69	0.82	0.77	0.83
4M								
R^2 global	0.93	0.92	0.94	0.95	0.94	0.90	0.90	0.90
R^2 lower 1/3rd	0.88	0.66	0.84	0.87	0.79	0.62	0.60	0.70
7M								
R^2 global	0.91	0.93	0.91	0.87	0.84	0.88	0.98	0.94
R^2 lower 1/3rd	0.81	0.80	0.69	0.71	0.77	0.85	0.93	0.73
12M								
R^2 global	0.96	0.97	0.90	0.96	0.86	0.95	0.95	0.95
R^2 lower 1/3rd	0.85	0.93	0.83	0.87	0.67	0.83	0.88	0.87

Table S5. Correlation between the RP levels in seven and twelve-month samples compared to four month sample. R^2, Pearson correlation coefficient (data are summarized in Fig. 3). Cer, cerebellum; HC, hippocampus; Cor, cortex; Liv, liver; P, polysomes; W, week; M, month.

	Cer 80S	Cer P	Cor 80S	Cor P	HC 80S	HC P	Liv 80S	Liv P
4M vs 7M	0.96	0.97	0.96	0.97	0.97	0.98	0.97	0.95
4M vs 12M	0.90	0.91	0.90	0.90	0.81	0.84	0.93	0.91

References

1. Ban N*, et al.* A new system for naming ribosomal proteins. *Cur Opin Struct Biol* 24:165-169 (2014).