

Supplementary Materials and Methods

TABLE S1. RT-PCR primers and their target introns

| Ensembl ^a | Transcript Name | Intron # | Intron Type | Primer | Sequence (5'-3') |
|----------------------|-----------------|-----------------|-------------|---------|---------------------------|
| 158302 | ACTB | 4 ^b | U2 | Forward | AGAGCTACGAGCTGCCTGAC |
| | | | | Reverse | AGCACTGTGTTGGCGTACAG |
| | | 5 ^b | U2 | Forward | GCAAAGACCTGTACGCCAAC |
| | | | | Reverse | AGTACTTGGCGCTCAGGAGGA |
| 312515 | Drap1 | 2 ^b | U12 | Forward | ACGAAGAGATTGGGAAGGTG |
| | | | | Reverse | GGGATGTGGTCATGGTCTTC |
| | | 4 ^b | U2 | Forward | GAAGGACCTGGTGGCATCT |
| | | | | Reverse | GGACAGCTTCTTGTCTTGC |
| 229239 | GADPH | 5 ^b | U2 | Forward | CGAGATCCCTCCAAAATCAA |
| | | | | Reverse | TTCACACCCATGACGAACAT |
| | | 8 ^b | U2 | Forward | CGACCACTTTGTCAAGCTCA |
| | | | | Reverse | TTCCTCTGTGCTCTTGCTG |
| 215659 | Mapk12 | 8 ^b | U12 | Forward | CTGGTCTGTGGGCTGCAT |
| | | | | Reverse | CAGCCGCTGCACAAACTC |
| | | 10 ^b | U2 | Forward | GCCTCTATCCTGACCAATGC |
| | | | | Reverse | CAACGTCGTCAAAGGAGTCA |
| 241041 | Pex16 | 7 ^b | U12 | Forward | AGCATCACGAGGAGCTGAGT |
| | | | | Reverse | CAGGGTTTCCACGACCTCT |
| | | 6 ^b | U2 | Forward | AGCAGTCCTACGTGGGGAAG |
| | | | | Reverse | ACTCAGCTCCTCGTGATGC |
| 315985 | PPP2R2A | 6 ^c | U12 | Forward | GAAAGAGGAGGATGGAAGGT |
| | | | | Reverse | TGACCTGTTACTGGGATCTT |
| 157812 | Psmc4 | 9 ^b | U12 | Forward | CCGCCAGAAGAGATTGATTT |
| | | | | Reverse | TCCTGACAGATGGAGTTAATATCAG |
| | | 7 ^b | U2 | Forward | CATGGTCCGGGATGTGTT |
| | | | | Reverse | CATCTGATTCAGCAGCTCCA |
| 358933 | RCD8 | 5 ^b | U12 | Forward | AGTGTGGCTGATCTGGCTTT |
| | | | | Reverse | GATGATCCTGCGAAAGTGGT |
| 344855 | Vps16 | 9 ^b | U12 | Forward | GTCCTCGTAGCAAGGAGAGG |
| | | | | Reverse | TCAGGCACCAGGTAGGAGTC |
| | | 6 ^b | U2 | Forward | GGGCCTGACCTTTACCTCTT |
| | | | | Reverse | CCCATCCAGATGTAGCCTGT |
| | | 13 ^b | U12 | Forward | TCGGAAAGTGTTCCTGGAC |
| | | | | Reverse | AGCACCTGGATGGTGAGC |

^a Designates the transcript and is preceded in all cases by ENST00000, and refers to Ensembl release 36.

^b. The primers are specific to exons flanking the indicated intron. ^c The primers are specific to exons 5 and 8

Human 170 EETKKKRSDSQIIENDSDLFVDLAAKVNQDNSRKS PKSYLEILAE VRDYKRRRQSYRAKN
 Mouse 170 EETKKKRSAPQVIENDSDLFVDLAAKVNQDNSRKS PKSYLEILAE VRDYKRRRQSYRAKN
 Rat 170 EETKKKRSAPQVIENDSDLFVDLAAKVNQDNSRKS PKSYLEILAE VRDYKRRRQSYRAKN
 Dog 167 EETKKKRSDSQIIENDSDLFVDLAAKVNQDNSRKS PKSYLEILAE VRDYKRRRQSYRAKN
 Frog 157 EQTKIQK-PSLTDRSEADLFEDLAAKVNQDDQKGPKSHLEIMAE MRDYKRRRQSYRAKN
 Zebrafish 163 YEASQO--SAKRESNNE DLYVDLVAKIKKEV NQSGPKSHLEVLAEMRDYKRRRQSYRAKN
 Fugu 169 GALNPR-S-EAPESSGQD DLYVDVSKLQRGEEQNEPKTHLELMAEMRDYKRRRQSYRAKN
 Sea Urchin 157 EKSEGO---SQADKLDL ELTFD-PEKKNDDKKEITQTTHAEALAE MRDYKRRRQSYRAKN
 Honey bee 153 ANTIK---PDIGHDIID--IQKQNSDKEDKEDKKLSFLEVLIQERNLKRRRAKH--RG
 Flour beetle 150 QNTEG---PPSPPE---FTTLYDKKHDEEK---PLTYEEILAQERD SKRRRAKY--KS
 consensus 181*.....*

Human 230 VHITKKSYTEVIRDVINVHMEELSNHWQEEQ-EKAE DAE-----KNEE R-----RSA
 Mouse 230 VHITKKSYTEVIRDVIKVHMEELSSHWQEEQ-GRAGDAE-----KNEE R-----RSA
 Rat 230 VHITKKSYTEVIRDVIKVHMEELSNHWQEEQ-ERAEDGAE-----KNEE R-----RSA
 Dog 227 VHITKKSYTEVIRDVINVHMEELSSHWQEEQ-ERAEDGAE-----KDEE R-----RSA
 Frog 216 VHITKKSYTEIIRDVINVHMEELNGHWRFDEI-NDDAGSSV-----SSSSVRRHTQ--RSP
 Zebrafish 221 VHITKKSYTEVIREVIDVHSGELGRIVQWQAK-EESQVSO-----QSSH-RAESEKGRSA
 Fugu 228 VHITKKSYTEVIREVINVHSEELGROWREE---EQEKVE-----EET R-----LKV
 Sea Urchin 213 VHITKRSKTDVMREIIESHMKFL EETQSPVK-EEEEKPT-----PDQE R-----LAP
 Honey bee 205 VHTNKKSHTEILREVIHQOMQLYIEYITDTHTNHTTETV-----TSTE-IQNSDINNHV
 Flour beetle 197 VHINRKNHTEVIREVINGOMGEY-KEWLLAK-DQTKDNKECNNGVHDK-KEEIE--RPH
 consensus 241 **.....*.....*

Human 277 SVDSR-----QSGGS-YLDA--E-CSRHRDR-SRSP-HKRKRNK--DKDKNCE SRRRKE
 Mouse 277 SVDSR-----QSGGS-YLDV--E-SSRHRAR-SRSP-HKRKRNK--DKSS--ESRRRKE
 Rat 277 SVDSR-----QSGGS-YLDV--E-SSRHRAR-SRSP-HKRKRNK--DKSS--DSRRRKE
 Dog 274 SVDSR-----QSGGS-YLDT--E-YSRHRKDR-SRSP-HKRKRNK--DKDKNWD SRRRKE
 Frog 268 SADS K-----NS-GS-HRDK--Q-YSDRKRER-SRSP--RRHSNR--EKEK--DTKKKKE
 Zebrafish 274 SVESR-----ASRIS-SRDE--H-EHRHRKR-SRSP--SRKHSR--EKKK--RS--RRDS
 Fugu 271 SSHRR-----RSSSS--ES-G-HSHSRHH-SR---ERSHGR--ESKK--RRERNS
 Sea Urchin 260 PEIIR-----GI-TLDV--D---DHGAG-IKAV--EETMTE--VAAH--HVAGMAN
 Honey bee 259 NIQNSDLLIDEFSEK-YHDKYHDVFTKDLKDHYGNNSRNDKNDRYFEKSH--ISHTKNS
 Flour beetle 252 SSTSR-----NSSSSSRSTNR--K-YDRHRDER-DRRA-KTGIVKK--GEIE--EIAQGKE
 consensus 301*.....*

Human 324 R--DGERHH-----
 Mouse 322 R--DGERHH-----
 Rat 322 RRVDGERHH-----
 Dog 321 R--DGRHH-----
 Frog 311 R--DEDRHH-----
 Zebrafish 317 H--SPDVER-----
 Fugu 311 R--SPEDCRH-----
 Sea Urchin 298 H--AVTNIV-----
 Honey bee 316 K--ETETYSR-TNELHKAQKSYKLLRKETTKTC
 Flour beetle 298 D--AHENEIGDIQGTVEVD-----
 consensus 361

Supplementary Figure S1. (Continued)