**Table S1. Parameters describing the equilibrium binding of eIF4GI mutants and DAP5 to 5’ UTRs**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Control**  **UTRs** | **eIF4GI557-1599** | | | **eIF4GI682-1599** | | | **DAP5** | | |
| ***K*d ± S.D. (nM)** | **Amp.**  **(rmax–rmin)** | ***χ*2** | ***K*d ± S.D. (nM)** | **Amp.**  **(rmax–rmin)** | ***χ*2** | ***K*d ± S.D. (nM)** | **Amp.**  **(rmax–rmin)** | ***χ*2** |
|  |  |  |  |  |  |  |  |  |  |
| EMCV  J/K  IRES | 63 ± 3.0 | 0.024 | 0.996 | 175 ± 4.0 | 0.031 | 0.998 | 519 ± 21.0 | 0.045 | 0.988 |
| Ferritin  IRE | 15 ± 2.0 | 0.040 | 0.999 | 18 ± 2.0 | 0.076 | 0.997 | 35 ± 3.0 | 0.069 | 0.998 |
| polyUC | N.A | 0.011 | 0.946 | N.A | 0.003 | 0.994 | N.A | 0.010 | 0.999 |
| β-actin | N.A | 0.007 | 0.998 | N.A | 0.006 | 0.911 | N.A | 0.039 | 0.998 |

**Table S2: DNA sequences used to generate RNA for this study**

|  |  |
| --- | --- |
| **5’ UTRs** | **Sense strand DNA** |
| HIF-1α | 5’-AGTGCACAGTGCTGCCTCGTCTGAGGGGACAGGAGGATCACCCTCTTCGTCGCTTCGGCCAGTG  GTCGGGCTGGGCCCTGACAAGCCACCTGAGGAGAGGCTCGGAGCCGGGCCCGGACCCCGGCGATTGCCGCCCGCTTCTCTCTAGTCTCACGAGGGGTTTCCCGCCTCGCACCCCCACCTCTGGACTTGCCTTTCCTTCTCTTCTCCGCGTGTGGAGGGAGCCAGCGCTTAGGCCGGAGCGAGCCTGGGGGCCGCCCGCCGTGAAGACATCGCGGG GACCGATTCACC-3’ |
| FGF9 | 5’GAAACAGCAGATTACTTTTATTTATGCATTTAATGGATTGAAGAAAAGAACCTTTTTTTTTCTCTCTCTCTCTGCAACTGCAGTAAGGGAGGGGAGTTGGATATACCTCGCCTAATATCTCCTGGGTTGACACCATCATTATTGTTTATTCTTGTGCTCCAAAAGCCGAGTCCTCTG-3’ |
| p53A | 5’TCTAGAGCCACCGTCCAGGGAGCAGGTAGCTGCTGGGCTCCGGGGACACTTTGCGTTCGGGCTG  GGAGCGTGCTTTCCACGACGGTGACACGCTTCCCTGGATTGGCAGCCAGACTGCCTTCCGGGTCACTGCC-3’ |
| p53B | 5’-ATGGAGGAGCCGCAGTCAGATCCTAGCGTCGAGCCCCCTCTGAGTCAGGAAACATTTTCAGAC  CTATGGAAACTACTTCCTGAAAACAACGTTCTGTCCCCCTTGCCGTCCCAAGCA-3’ |
| EMCV J/K domain | 5’AGGGGCTGAAGGATGCCCAGAAGGTACCCCATTGTATGGGATTCGATCTGGGGCCTCGGTGCAC  ATGCTTTACATGTGTTTAGTCGAGGTGCGTCTAGGCCCCCCGAACCACGGGGACGTGGTTTTCCTTTGAAAAACACGATGATATAATG-3’ |
| PolyUC | 5’TCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCT  CTCTCTCTCTCTCCTCTCTCTCTCTCTCTCTC-3’ |
| Ferritin IRE | 5’-GTTCTTGCTTCAACAGTGTTTGAACGGAAC-3’ |
| β-actin | 5’-GGACCGCCGAGACCGCGTCCGCCCCGCGAGCACAGAGCCTCGCCTTTGCCGATCCGCCGCCCG  CCACACCCGCCGCCAGCTCAC-3’ |