**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** |
|  |  |  |  |  |  |  |  |  |  |
| EMCVJ/K IRES | 63 ± 3.0 | 0.024 | 0.996 | 175 ± 4.0 | 0.031 | 0.998 | 519 ± 21.0 | 0.045 | 0.988 |
| FerritinIRE | 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’-AGTGCACAGTGCTGCCTCGTCTGAGGGGACAGGAGGATCACCCTCTTCGTCGCTTCGGCCAGTGGTCGGGCTGGGCCCTGACAAGCCACCTGAGGAGAGGCTCGGAGCCGGGCCCGGACCCCGGCGATTGCCGCCCGCTTCTCTCTAGTCTCACGAGGGGTTTCCCGCCTCGCACCCCCACCTCTGGACTTGCCTTTCCTTCTCTTCTCCGCGTGTGGAGGGAGCCAGCGCTTAGGCCGGAGCGAGCCTGGGGGCCGCCCGCCGTGAAGACATCGCGGG GACCGATTCACC-3’ |
| FGF9 | 5’GAAACAGCAGATTACTTTTATTTATGCATTTAATGGATTGAAGAAAAGAACCTTTTTTTTTCTCTCTCTCTCTGCAACTGCAGTAAGGGAGGGGAGTTGGATATACCTCGCCTAATATCTCCTGGGTTGACACCATCATTATTGTTTATTCTTGTGCTCCAAAAGCCGAGTCCTCTG-3’ |
| p53A | 5’TCTAGAGCCACCGTCCAGGGAGCAGGTAGCTGCTGGGCTCCGGGGACACTTTGCGTTCGGGCTGGGAGCGTGCTTTCCACGACGGTGACACGCTTCCCTGGATTGGCAGCCAGACTGCCTTCCGGGTCACTGCC-3’ |
| p53B | 5’-ATGGAGGAGCCGCAGTCAGATCCTAGCGTCGAGCCCCCTCTGAGTCAGGAAACATTTTCAGACCTATGGAAACTACTTCCTGAAAACAACGTTCTGTCCCCCTTGCCGTCCCAAGCA-3’ |
| EMCV J/K domain | 5’AGGGGCTGAAGGATGCCCAGAAGGTACCCCATTGTATGGGATTCGATCTGGGGCCTCGGTGCACATGCTTTACATGTGTTTAGTCGAGGTGCGTCTAGGCCCCCCGAACCACGGGGACGTGGTTTTCCTTTGAAAAACACGATGATATAATG-3’ |
| PolyUC | 5’TCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCCTCTCTCTCTCTCTCTCTC-3’ |
| Ferritin IRE | 5’-GTTCTTGCTTCAACAGTGTTTGAACGGAAC-3’ |
| β-actin | 5’-GGACCGCCGAGACCGCGTCCGCCCCGCGAGCACAGAGCCTCGCCTTTGCCGATCCGCCGCCCGCCACACCCGCCGCCAGCTCAC-3’ |