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**Figure. S-1**. Comparison of cap-dependent and cap-independent translation activities of **A.** β-actin **B.**HIF-1α **C.** FGF-9, **D.** p53A and **E.** p53B, UTR-Luc mRNAs in RRL. The RRL was made more cap-dependent by the addition of 75 mM KCl to the lysate (60). Luciferase activities are the representative of mean of three independent experiments. Data analyzed by two-tailed unpaired Student’s *t*-test: n.s, p =0.12; \*, p < 0.033; \*\*\*, p < 0.001.

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**Figure. S-2.** Effect of 4EGI-1 on the translation yields of UTR-Luc mRNAs of **A**. m7GpppA-cappedβ-act-UTR-Luc mRNA. **B.** ApppG-capped UTR-Luc mRNA of HIF-1α, FGF-9, p53A, and p53B. The grey panel shows translation of the ApppG-capped UTR-Luc mRNA in the absence of 4EGI-1 but a corresponding aliquot of DMSO added and the white panel depicts translation in the presence of 0.2 mM of 4EGI-1. Data analyzed by two-tailed unpaired Student’s *t*-test: n.s, p =0.12; \*\*\*, p < 0.001.

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**Figure. S-3.** Depletion of eIF4GI or DAP5 have little effect on eIF4E, eIF2β, and eIF4AI levels. eIF4E binds only to eIF4GI and not to DAP5, so the levels of eIF4E were tested in RRL(-)4GI) only (Lane 3, left panel). Similarly, eIF2β has been shown to directly interact with DAP5, but not eIF4GI(14), so only the RRL (-)DAP5 was tested for levels of eIF2β (lane 3, right panel). Since eIF4AI binds to both eIF4GI and DAP5, the eIF4A levels were tested in both RRL(-)4GI (lane 3, left pane), and RRL (-)DAP5 (lane 3, right panel). IP represents the protein pulled-down by the immunoprecipitation.

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**Figure S-4.** Effect of eIF4GI mutants and DAP5 on the expression of m7GpppA-cappedβ-act-UTR-Luc mRNA. The lysate was depleted of eIF4GI (Bar 2-6) or DAP5 (8-10) and the expression levels of m7GpppA-cappedβ-act-UTR-Luc mRNA was quantified following addition of recombinantly purified eIF4GI557-1599 (Bar 2 and 3), eIF4GI682-1599 (Bar 4 and 5)and DAP5 (9 and10). The RRL was made more cap-dependent by the addition of 75 mM KCl to the lysate (60). Results were analyzed the same as Fig. 4. Bar heights and error bars correspond to the average and standard deviations, respectively, of three independent luciferase activity measurements and data analyzed by two-tailed unpaired Student’s *t*-test: n.s, p =0.12; \*, p < 0.033; \*\*, p =0.002; \*\*\*, p < 0.001.