**Supplementary Figure 1.** A. Increasing amount of PIP4K2A and labeled 3'UTR of RAD51 were incubated at 16°C in 1x GSB for 1hr. Complex were then resolved on 4% PAGE at 4°C. B. Competitive EMSA with labeled 3'UTR of RAD51 and *P. falciparum* lysate in presence of self-competitor or RAD51 short or 22 fragment of RAD51. Increasing amount of PIP4K2A (C) or PIP4K2AG131I Y138F(D) and labeled RAD51-short were incubated at 16°C in 1x GSB for 1hr. Complex were then resolved on 1% agarose gel at 4°C.
Supplementary Figure 2. A/C) Increasing amount of unlabeled RAD51 3’UTR short/ 3’UTR of RAD51 along with labeled 3’UTR of RAD51 short and PIP4K2A were incubated at 16°C in 1x GSB for 1hr. Complex were then resolved on 1% agarose at 4°C. The shifted bands were quantified using ImageJ software and the mean (± SEM) relative band intensity was plotted (right panel; n=3). B) Increasing amount of unlabeled RAD51 3’UTR short along with labeled 3’UTR of RAD51 short and PIP4K2A G131L Y138F were incubated at 16°C in 1x GSB for 1hr. Complex were then resolved on 1% agarose at 4°C. The shifted bands were quantified using ImageJ software and the mean (± SEM) relative band intensity was plotted (right panel; n=3).
Supplementary Figure S3: Protein alignment of PIP4K from worm (C. elegans), fly (D. melanogaster), mamal (H. sapiens) and fish (D. Rerio), using ClustalW
| Translation factor | eIF4EBP1 | eIF4E | PAIP1 | PAIP 2 | YBX1 | eIF4G 1920 | eIF4A1 |
|--------------------|---------|------|-------|--------|------|------------|-------|
| Interaction with PIP4K2A | + | - | - | - | - | - | - |

**Supplementary Figure 4.** Table showing translation factors tested for interaction with PIP4K2A