Table S1. Sequences of oligonucleotides used for molecular cloning and PCR

Primers used to generate genomic rescue constructs in pCaSpeR4	
Entire Genomic Region For *Sma* I (for *CG14671 + PI4KII* construct)	TCC CCC CGG GCC TAA ATA ATT GAA GAG ATA ACC AAA CGA CG
Entire Genomic Region Rev *Not* I (for *CG14671 + PI4KII* construct)	GGG CGG CCG CTA GTC GAT TAC TTT ACT GAA TTC GAG GAC C
PI4KII Genomic Rescue For *Sma* I (for *PI4KII* construct)	TCC CCC CGG GTT CCA CCT CGT TGA GGA GCA CAC CCA GTG TC
PI4KII Genomic Rescue Rev *Not* I (for *PI4KII* construct)	GGG CGG CCG CTA GTC GAT TAC TTT ACT GAA TTC GAG GAC C
CG14671 For *Xba* I (to generate *CG14671* genomic rescue construct)	GCT CTA GAC CTA AAT AAT TGA AGA GAT AAC CAA ACG AC
CG14671 Rev *Not* I (to generate *CG14671* genomic rescue construct)	GGG CGG CCG CAA ACA GCT GAC GAG TAG AAT TCG CGG TAC
Primers used to add a fluorescent tag to the _Tub84B promoter expression vector	
mCherry For *Kpn* I (mCherry with start codon)	GGG GTA CCA ACA TGG TGA GCA AGG GCG AGG AGG AT
mCherry Rev *Xba* I (mCherry with start codon)	GCT CTA GAC TTG TAC AGC TCG TCC ATG CCG CC
mEGFP For *Kpn* I (mEGFP with start codon)	GGG GTA CCA ACA TGG TGA GCA AGG GCG AGG AGC TGT TC
mEGFP Rev *Xba* I (mEGFP with start codon)	GCT CTA GAG AGT CCG GAC TTG TAC AGC TCG TCC ATG CCG AG
mEGFP For *Kpn* I (mEGFP with stop codon)	GGG GTA CCA TGG TGA GCA AGG GCG AGG AGC TG
mEGFP Rev *Xba* I (mEGFP with stop codon)	GCT CTA GAT TAC TTG TAC AGC TCG TCC ATG CC
Primers used to insert cDNAs into Tub84B promoter expression vector	
AP-3δ/Garnet For *Xba* I (inserted 3' of mCherry)	GCT CTA GAA TGG CAC TGA AAA AAG TGA AGG G
AP-3δ/Garnet Rev *Xba* I (inserted 3' of mCherry)	GCT CTA GAT TAC AAA ATC TCT TTG CTG GGC GTT GA
AP-3δ/Garnet For *Kpn* I (inserted 5' of GFP)	GGG GTA CCA ACA TGG CAC TGA AAA AAG TGA AGG G
AP-3δ/Garnet Rev *Kpn* I (inserted 5' of GFP)	GGG GTA CCC AAA ATC TCT TTG CTG GGC GTT G
Vps29 For *Kpn* I (inserted 5' of GFP)	GGG GTA CCA ACA TGC TCG TTC TGG TAC TCG GCG
Vps29 Rev *Kpn* I (inserted 5' of GFP)	GGG GTA CCA TAG ATC TTC TTG TAC TCG ATG CG
Vps29 For *Xba* I (inserted 3' of mCherry)	GCT CTA GAA TGC TCG TTC TGG TAC TCG GCG
Vps29 Rev *Xba* I (inserted 3' of mCherry)	GCT CTA GAC TAG ATC TTC TTG TAC TCG ATG C
PI4KII For *Xba* I (inserted 3' of mCherry or GFP)	GCT CTA GAA TGA GCG GCG CTC GGG ATC AGA CG
PI4KII Rev *Xba* I (inserted 3' of mCherry or GFP)	GCT CTA GAT TAG CAC CAA GAG AAG AAA GGG CTC
GFP-LERP For *Asp* 718 (inserted directly into αtub vector)	GCG GTA CCA TGG GAT GGA GCT GTA TCA
GFP-LERP Rev *Xba* I (inserted directly into αtub vector)	GCT CTA GAC TAA AGC AGC ATG TC
Primers used for site-directed mutagenesis of PI4KII	
PI4KII For ATP point mutation (K311M)	ATC AAT GCC TGG CCG TAT TTA TGC CAA AGG ACG A
PI4KII Rev ATP point mutation (K311M)	TCG TCC TTT GGC ATA AAT ACG GCC AGG CAT TGA T
PI4KII For CAT point mutation (D465A)	CAT ACG CAA CAC GGC CCG TGG CAA CGA CA
PI4KII Rev CAT point mutation (D465A)	TGT CGT TGC CAC GGG CCG TGT TGC GTA TG
Primers used for reverse transcriptase-coupled PCR to detect PI4KII transcripts	
PI4KII Exon 2 For (to detect somatic transcript)	AGC AGA TAA CAG AAC CAA GCG AC
PI4KII Exon 3 Rev (to detect somatic transcript)	CGT CGT AAT GCA TGA CCA AGT TA
PI4KII Unique Testes Exon For (to detect testes transcript)	CAA CAT TAA GTC GTT TCT CAG CCA
PI4KII Exon 4 Rev (to detect testes transcript)	AAA GTA GGA ACC ACT GCT ACC CTG
Primers used to FLAG tag and subclone PI4KII (wild type and mutants) into pcDNA3.1	
5' FLAG PI4KII *Hind* III	GGG AAG CTT ATG GAC TAC AAG GAC GAC GAT GAC AAG ATG AGC GGC GCT CGG GAT CA
3' PI4KII *Xba* I	GCT CTA GAT TAG CAC CAA GAG AAG AAA GGG C

All sequences are shown 5' to 3'. Forward (For) and reverse (Rev) primers are indicated.