Table S2: Oligonucleotides used in this study

Primer name	Primer sequence 5'----3'
PCR primers used to amplify the CORE-I-*Sce*I cassette (blue denotes homology to *MEF2* site of insertion, green indicates I-*sce*I restriction site)	
pGSKU K769Q F	ACGCAACCAAAGATAAAAAAAACACTCAAGAGACCAGTTCTAATGTAAAATTCGTACGCTGCAGGTCGAC
pGSKU K769Q R	TTGGTGTAGGTGGTAATTTCCCTTAGTGGCACTTTCGCTTTTATAATTTTTAGGGATAACAGGGTAATCCGCGCGTTGGCCGATTCAT
pGSKU R740G F	CGTGTCAAATTCTGGCGCATCCACTTGTAATTCTCCAGAGAACAGCAATATTCGTACGCTGCAGGTCGAC
pGSKU R740G R	ATCTTTGGTTGCGTGTAGGGTTGTAACAGCATCAGAGGGAATATATATCCTAGGGATAACAGGGTAATCCGCGCGTTGGCCGATTCAT
pGSKU I616T F	AATGGTAATTGGGATAAAGAATGGAAATACCAAGTTTCTTTCGAATCAATTTCGTACGCTGCAGGTCGAC
pGSKU I616T R	TTCCGCCTCTTTGAAGTCCCACAATGCAACTTGCAATAATAGAATTTAGATAGGGATAACAGGGTAATCCGCGCGTTGGCCGATTCAT
pGSKU D578G F	GAGAGTGATGATGGATATAGATTCTCCTTATCTCTGCTACCAAATTCCGATTCGTACGCTGCAGGTCGAC
pGSKU D578G R	GAAAATTCTCGTTGACTCCTAATGGATATGCAAGGCAGTTAGGAAGGGCATAGGGATAACAGGGTAATCCGCGCGTTGGCCGATTCAT
pGSKU K308R F	CTGACTATGAAGAATATGATTGTACCTGTCTTATGCGGTGCGTCTTTTAATCGTACGCTGCAGGTCGAC
pGSKU K308R R	AAGGGAGATAATTAACTATAGCATCTAATAGAGGCTGCACGCCAATATTTTAGGGATAACAGGGTAATCCGCGCGTTGGCCGATTCAT
80bp Integrative recombinant oligos containing desired mutation (point mutation highlighted in red)	
K769Q IRO 1	GATAAAAAAAACACTCAAGAGACCAGTTCTAATGTAAAACAAATTATAAAAGCGAAAGTGCCACTAAGGGAAATTACCAC
K769Q IRO 2	GTGGTAATTTCCCTTAGTGGCACTTTCGCTTTTATAATTTGTTTTACATTAGAACTGGTCTCTTGAGTGTTTTTTTTATC
R740G IRO 1	TCTGGCGCATCCACTTGTAATTCTCCAGAGAACAGCAATGGGATATATATTCCCTCTGATGCTGTTACAACCCTACACGC

R740G IRO 2	GCGTGTAGGGTTGTAACAGCATCAGAGGGAATATATATCCCATT GCTGTTCTCTGGAGAATTACAAGTGGATGCGCCAGA
I616T IRO 1	GGGATAAAGAATGGAAATACCAAGTTTCTTTCGAATCAACTCTA AATTCTATTATTGCAAGTTGCATTGTGGGACTTCAA
I616T IRO 2	TTGAAGTCCCACAATGCAACTTGCAATAATAGAATTTAGAGTTG ATTCGAAAGAAACTTGGTATTTCCATTCTTTATCCC
D578G IRO 1	GATGGATATAGATTCTCCTTATCTCTGCTACCAAATTCCGGTGCC CTTCCTAACTGCCTTGCATATCCATTAGGAGTCAA
D578G IRO 2	TTGACTCCTAATGGATATGCAAGGCAGTTAGGAAGGGCACCGGA ATTTGGTAGCAGAGATAAGGAGAATCTATATCCATC
K308R IRO 1	AGAATATGATTGTACCTGTCTTATGCGGTGCGTCTTTTAGAAATA TTGGCGTGCAGCCTCTATTAGATGCTATAGTTAAT
K308R IRO 2	ATTAACTATAGCATCTAATAGAGGCTGCACGCCAATATTTCTAA AAGACGCACCGCATAAGACAGGTACAATCATATTCT

PCR confirmation of cassette integration and sequencing confirmation of mutation

K769Q conf F	GACGAATCAAGCGTGTCAAA
K769Q conf R	GGCCACGAGGAACAAGAATA
R740G conf F	GCTCTCAATGACTTAAAACCTGAA
R740G conf R	CTCCCTTGCGATAAGCTCCT
I616T conf F	CTTGAAATTGCCAAGGATCG
I616T conf R	TGAGCCTTTCTTGCTCCTGT
D578G conf F	TCGATGGAAGAAGCTTTAAACA
D578G conf R	TGACCAATCGCTATTGATTTTG
K308R conf F	TTTTCCAAGGTGTTATTGACG
K308R conf R	TACCCCTGATTGGATCCGTA
MAT locus	AGTCACATCAAGATCGTTTATGG

Q-PCR mtDNA copy number analysis (yeast)

nACT1 F	GTATGTGTAAAGCCGGTTTTG
nACT1 R	CATGATACCTTGGTGTCTTGG
mtCOX1 F	CTACAGATACAGCATTTCCAAGA
mtCOX1 R	GTGCCTGAATAGATGATAATGGT

Q-PCR Determination of *EFG2* silencing

EFG2 F	CCACTGGTTTTTATGCGCATT
EFG2 R	CTCTCCGTGCAGTTTCCATTAA
18S F	CCGCTAGAGGTGAAATTCTTG
18S R	CATTCTTGGCAAATGCTTTCG
Q-PCR mtDNA copy number analysis (human)	
mtND1 Forward	CCCTAAAACCCGCCACATCT
mtND1 Reverse	GAGCGATGGTGAGAGCTAAGGT