

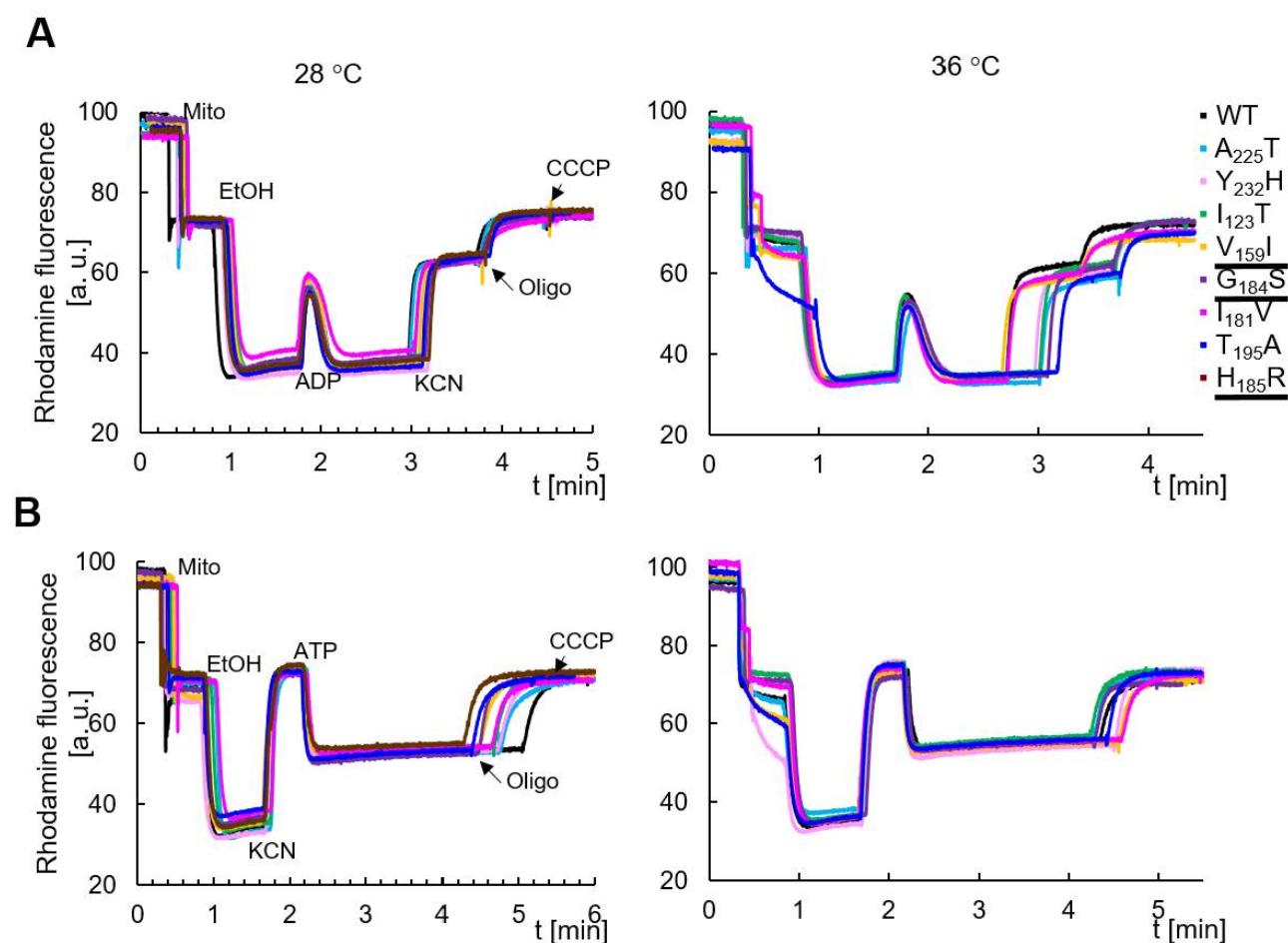


Fig. S1. Variations in mitochondrial membrane potential. The tracings in panel A show how the mitochondria responded to externally added ADP, those in panel B reflect ATP-driven proton pumping by ATP synthase. The additions were 0.5 μ g/ml Rhodamine 123, 75 μ g/m mitochondrial proteins (Mito), 10 μ L ethanol (EtOH), 75 μ M ADP, 0.2 mM ATP, 2 mM potassium cyanide (KCN), 4 μ g/ml oligomycin (oligo), and 4 μ M carbonyl cyanide-m-chlorophenyl hydrazone (CCCP). The shown tracings are representative of three biological repetitions.

Table S1. List of oligonucleotides used in the study (in bold are the mutagenic nucleotides)

Amino acid change in Atp6p	Codon change in ATP6 gene	Primers		pSDC14 based plasmid	pATP6 ^{mut} plasmid
I ₁₂₃ T	ATT>ACT	For	GTATGATTCCATACTCATTTGCATTATCAGCT	pM6.1	pEB12
		Rev	CTAAAATAGTATTACCTAATCAAATAACAG T ACTTAAAGAGATAATAAATACTAAATG		
V ₁₅₉ I	GTT>ATT	For	GTATTCTTCTCATTATTCGTACCTGCTGGTA	pN6.1	pEB13
		Rev	GCGAAATAAGATAAAGTTTCAATAATAATTAATAAAGGTACTAATGGTAATGGTG		
I ₁₈₁ V	ATC>GTC	For	GAAACTTTATCTTATTTTCGCTAGAGCTATTT	pO73.1	pEB20
		Rev	ATAACCATTAATAAATGACCAGCTAAGAC C ATTAGAACCTAATCTTAAACCTAATG		
G ₁₈₄ S	GGT>AGT	For	CTTATTTTCGCTAGAGCTATTTTCATTAGGTT	pP5.1	pEB14
		Rev	CCAGCTAAAATAACCATTAATAAATGACTAGCTAAGATATTAGAACCTAATCTTA		
H ₁₈₅ R	CAT>AGA	For	CTTATTTTCGCTAGAGCTATTTTCATTAGGTTTAA	pQ53.9	pEB21
		Rev	GTAAACCAGCTAAAATAACCATTAATAAT TCT ACCAGCTAAGATATTAGAACCTAATC		
T ₁₉₅ A	CTA>GCA	For	TATTAATGGTTATTTTAGCTGGTTTAG GC ATTTAATTTTATGTTAATTAATTTATTTAC	pT4.1	pEB17
		Rev	CATAGCTAAAGGTACAAAACCGAATACTAAA		
A ₂₂₅ T	GCT>ACT	For	CACGACGTTGTAAAACGACGGCCAGTGAATTC ACT TATTGGTATCATTCAGGGATATGTCTG	-	pEB10
		Rev	CAGACATATCCCTGAATGATACCAATAG TGA ATTC ACT GGCCGTCGTTTTACAACGTCGTG		
Y ₂₃₂ H	TAT>CAT	For	GAATTCGCTATTGGTATCATTCAGGGAC AT GTCTGGGCTATTTTAACAGCATCATA	-	pEB11
		Rev	TATGATGCTGTAAAATAGCCCAGACAT GT CCCTGAATGATACCAATAGCGAATTC		
oATP6-1	-	-	TAATATACGGGGGTGGGTCCCTCAC	-	-
oATP6-10	-	-	GGGCCGA ACT CCGAAGGAGTAAG	-	-

Table S2. Genotypes and sources of yeast strains

Strain	Nuclear genotype	mtDNA	Source
DFS160	<i>MATα leu2Δ ura3-52 ade2-101 arg8::URA3 kar1-1</i>	ρ ⁰	Steele et al., 1996
NB40-3C	<i>MATα lys2 leu2-3,112 ura3-52 his3ΔHinDIII arg8::HIS3</i>	ρ ⁺ <i>cox2-62</i>	Steele et al., 1996
MR6	<i>MATα ade2-1 his3-11,15 trp1-1 leu2-3,112 ura3-1 arg8::HIS3</i>	ρ ⁺	Rak et al., 2007b
MR10	<i>MATα ade2-1 his3-11,15 trp1-1 leu2-3,112 ura3-1 arg8::HIS3</i>	ρ ⁺ <i>atp6::ARG8^m</i>	Rak et al., 2007b
SDC30	<i>MATα leu2Δ ura3-52 ade2-101 arg8::URA3 kar1-1</i>	ρ ⁻ <i>ATP6 COX2</i>	Rak et al., 2007a
EBY1a	<i>MATα leu2Δ ura3-52 ade2-101 arg8::URA3 kar1-1</i>	ρ ⁻ <i>atp6-A225T</i>	This study
EBY2a	<i>MATα leu2Δ ura3-52 ade2-101 arg8::URA3 kar1-1</i>	ρ ⁻ <i>atp6-Y232H</i>	This study
EBY3a	<i>MATα leu2Δ ura3-52 ade2-101 arg8::URA3 kar1-1</i>	ρ ⁻ <i>atp6-I123T</i>	This study
EBY4a	<i>MATα leu2Δ ura3-52 ade2-101 arg8::URA3 kar1-1</i>	ρ ⁻ <i>atp6-V1569I</i>	This study
EBY5a	<i>MATα leu2Δ ura3-52 ade2-101 arg8::URA3 kar1-1</i>	ρ ⁻ <i>atp6-G184S</i>	This study
EBY8a	<i>MATα leu2Δ ura3-52 ade2-101 arg8::URA3 kar1-1</i>	ρ ⁻ <i>atp6-I181V</i>	This study
EBY11a	<i>MATα leu2Δ ura3-52 ade2-101 arg8::URA3 kar1-1</i>	ρ ⁻ <i>atp6-T195A</i>	This study
EBY12a	<i>MATα leu2Δ ura3-52 ade2-101 arg8::URA3 kar1-1</i>	ρ ⁻ <i>atp6-H185R</i>	This study
EBY1	<i>MATα ade2-1 his3-11,15 trp1-1 leu2-3,112 ura3-1 arg8::HIS3</i>	ρ ⁺ <i>atp6-A225T</i>	This study

Strain	Nuclear genotype	mtDNA	Source
EBY2	<i>MATa ade2-1 his3-11,15 trp1-1 leu2-3,112 ura3-1</i> <i>arg8::HIS3</i>	ρ^+ <i>atp6</i> -Y232H	This study
EBY3	<i>MATa ade2-1 his3-11,15 trp1-1 leu2-3,112 ura3-1</i> <i>arg8::HIS3</i>	ρ^+ <i>atp6</i> -I123T	This study
EBY4	<i>MATa ade2-1 his3-11,15 trp1-1 leu2-3,112 ura3-1</i> <i>arg8::HIS3</i>	ρ^+ <i>atp6</i> -V159I	This study
EBY5	<i>MATa ade2-1 his3-11,15 trp1-1 leu2-3,112 ura3-1</i> <i>arg8::HIS3</i>	ρ^+ <i>atp6</i> -G184S	This study
EBY8	<i>MATa ade2-1 his3-11,15 trp1-1 leu2-3,112 ura3-1</i> <i>arg8::HIS3</i>	ρ^+ <i>atp6</i> -I181V	This study
EBY11	<i>MATa ade2-1 his3-11,15 trp1-1 leu2-3,112 ura3-1</i> <i>arg8::HIS3</i>	ρ^+ <i>atp6</i> -T195A	This study
EBY12	<i>MATa ade2-1 his3-11,15 trp1-1 leu2-3,112 ura3-1</i> <i>arg8::HIS3</i>	ρ^+ <i>atp6</i> -H185R	This study