

**Supplemental Table 1.** Sequences of mutagenic primers used in this study. The underlined bases represent mutations.

Oligonucleotide	Sequence (5' → 3')	Ref
NuoL-1	ACAAGCGCCAGGATCTGGTTTACGAG	
NuoL-13	CCGGCAGCCAGCCATGCAGCGGAAC	
NuoL-R(BglII)	GCACCAGGTTAAAAC <u>Ag</u> aTcTTAAAGTCGCCTACCG	(1)
NuoL-F(BglII)	CGCTTTGCAGGTAAAG <u>a</u> TCTGCTGTTAAGTGAG	(1)
NuoL(G488STOP)-For	CGACGGAAGTGGCGCA <u>C</u> tGaAGCATGTTGACCCTGGAAATTACC	
NuoL(G488STOP)-Rev	GGTAATTTCCAGGGTCAACATGCTtCaGTGCGCCAGTTCCGTCG	
NuoL(T517STOP)-For	GCTGTGGCTGGGTAAACGTT <u>a</u> aCTGGTGACCTCCATCG	
NuoL(T517STOP)-Rev	CGATGGAGGTCACCAGt <u>t</u> aACGTTTACCCAGCCACAGC	
NuoL(W593STOP)-For	GTGAGAACGGCTATCTGCGCTGaTATGTGGCATCCATGAGCATCG	
NuoL(W593STOP)-Rev	CGATGCTCATGGATGCCACATAaCAGCGCAGATAGCCGTTCTCAC	
NuoL(A607STOP)-For	GGTGCGGTCGTGGTGCTGt <u>a</u> ACTGTTGATGGTACTGCGTTGAG	
NuoL(A607STOP)-Rev	CTCAACGCAGTACCATCAACAGTt <u>a</u> CAGCACCACGACCCGACC	
NuoL(V611STOP)-For	GGTGCTGGCACTGTTGATGt <u>a</u> ACTGCGTTGAGTTAAGGATTGTGG	
NuoL(V611STOP)-Rev	CCACAATCCTTAACTCAACGCAGTt <u>a</u> CATCAACAGTGCCAGCACC	
NuoL(L612STOP)-For	GTGCTGGCACTGTTGATGGT <u>a</u> aaCGTTGAGTTAAGGATTGTGGG	
NuoL(L612STOP)-Rev	CCCACAATCCTTAACTCAACGt <u>t</u> aTACCATCAACAGTGCCAGCAC	
NuoL(V519KpnI)-For	GGCTGGGTAAACGTA <u>C</u> TCTGGg <u>t</u> ACCTCCATCGCCAACAGTGCG	
NuoL(V519KpnI)-Rev	CGCACTGTTGGCGATGGAGGt <u>c</u> ACCAGAGTACGTTTACCCAGCC	
NuoL(K581KpnI)-For	CGCTTTGCAGGTAAAGGt <u>acc</u> CTGTTAAGTGAGAACGGC	
NuoL(K581KpnI)-Rev	GCCGTTTCTCACTTAAACAGg <u>gt</u> ACCTTTACCTGCAAAGCG	
NuoM-A	CAGG <u>CC</u> CGGGATGCGGCGATTTTCCACTTG	(2)
NuoM-B	CGCGGAAGCTTCGGCATGTGCAATTCAGACTGC	(2)
NuoM-C	GTCGCTAAGCTTTGCGGTGGCAACGCTTGGGATG	(2)
NuoM-D	CGCGTCGACGCTGCTGAACAGATAACCG	(2)
NuoM-J	GTCGCCACGCAATGGAGAGCATCACAACC	(2)
NuoM-M	CCGGTCCTGACGGGACTTTTACAAGG	(2)
spc-E2	GGGTCAAAGCTT <u>C</u> AGTGGAAACGAAAACCTCAC	(2)
spc-F2	GGAAGATAAGCTTTCTATTTTTCAATAGTTACAAATTG	(2)
NuoM(N502STOP)-For	CCAGCAGTGGTTTGT <u>T</u> TAATCCGTTACTACTACAAGGC	
NuoM(N502STOP)-Rev	GCCTTGTAGTAGTAACGGATTAAACAAACCACTGCTGG	
NuoM(N495STOP)-For	CCTCGCACTCCGCGATTGGCTAAATCCAGCAGTGG	
NuoM(N495STOP)-Rev	CCACTGCTGGATTTAGCCAATCGCGGAGTGCGAGG	
NuoM(I485STOP)-For	GGCTTCTATCCGCAGCCGTA <u>A</u> ACTGGATACCTCGC	
NuoM(I485STOP)-Rev	GCGAGGTATCCAGTTACGGCTGCGGATAGAAGCC	
NuoM(M467STOP)-For	GCTGCGTGAGCTGTTTTAGATCCTGTTGCTGGTGG	
NuoM(M467STOP)-Rev	CCACCAGCAACAGGATCTAAAACAGCTCACGCAGC	
NuoM(G459STOP)-For	GCCAGGAAGTGCATAGATGTCGCTGCGTGAGC	
NuoM(G459STOP)-Rev	GCTCACGCAGCGACATCTATGGCAGTTCCTGGC	

1. Nakamaru-Ogiso, E., Kao, M. C., Chen, H., Sinha, S. C., Yagi, T., and Ohnishi, T. (2010) *J. Biol. Chem.* **285**, 39070-39078
2. Torres-Bacete, J., Nakamaru-Ogiso, E., Matsuno-Yagi, A., and Yagi, T. (2007) *J. Biol. Chem.* **282**, 36914-36922