

primers		Template		ERp44
FW	CACCGCTAGCGAAATAACAAGTCTTGATACAGAGAAT	pET28	PCR cloning	ERp44 ΔHis
RV	GCGCCTCGAGTTAATCCCTCAATAGAGTATACCTATAT			
FW	GCGCGGGATCCGGTAGTCCTGAGAGAGCTCCTTC	pcDNA ERp44 wt	cut and paste	ERp44 ΔHis
RV	GCGCGGATCCAGAATGTAAGTCAAATACGAA			
FW <sub>1</sub>	CAACTCGAGCGTTACCATGCATCCTGCC			
RV <sub>1</sub>	GCGGCGGTACCTTAAAGCTCATCTCGATCCCTC			
FW	ATCGCTATTGACAGCTTTAGAGCTATGTATGTGTTGGAG	pcDNA ERp44 wt	SDM	ERp44 A (H299A)
RV	CTCCAAACACATACATAGCTCTAAAGCTGTCAATAGCGAT			
FW	GACTTACATTCTGGAAAACCTGGCCAGAGAATCCATCATGGAC	pcDNA ERp44 wt	SDM	ERp44 B (H328A)
RV	GTCCATGATGGAATTCTCTGGCCAGTTTTCCAGAATGTAAGTC			
FW	CACAGAGAATTCGCTCATGGACCTGAC	pcDNA ERp44 wt	SDM	ERp44 C (H332)
RV	GTCAGGTCCATGAGCGAATTCTCTGTG			
FW	CTGCACAGAGAATTCATGCTGGACCTGACCCAATGAT	pcDNA ERp44 wt	SDM	ERp44 D (H333A)
RV	ATCAGTTGGGTCAGGTCCAGCATGGAATTCTCTGTGCAG			
FW	AAACTGGCCAGAGAATTCGCTCATGGACCTGACCCAAT	pcDNA ERp44 B	SDM	ERp44 BC (H328-332A)
RV	AGTTGGGTCAGGTCCATGAGCGAATTCTCTGGCCAGTTT			
FW	CTGGAAAACCTGCACAGAGAATTCGCTGCTGGACCTGACCCAATGATACAG	pcDNA ERp44 wt	SDM	ERp44 CD (H332-333A)
RV	CTGTATCAGTTGGGTCAGGTCCAGCAGCGAATTCCTGTGCAGTTTTCCAG			
FW	CTGGCCAGAGAATTCATGCTGGACCTGACCCAATGAT	pcDNA ERp44 B	SDM	ERp44 BD (H328-333A)
RV	ATCAGTTGGGTCAGGTCCAGCATGGAATTCTCTGGCCAG			
FW	GACTTACATTCTGGAAAACCTGGCCAGAGAATCCATCATGGAC	pcDNA ERp44 CD	SDM	ERp44 BCD (H328-332-333A)
RV	GTCCATGATGGAATTCTCTGGCCAGTTTTCCAGAATGTAAGTC			
FW	ATCGCTATTGACAGCTTTAGAGCTATGTATGTGTTGGAG	pcDNA ERp44 BCD	SDM	ERp44 ABCD (H299 328-332-333A)
RV	CTCCAAACACATACATAGCTCTAAAGCTGTCAATAGCGAT			
FW	GCTGCTGGACCTGACCCAGCTGATACAGCCCCAGGAGAG	pcDNA ERp44 ABCD	SDM	ERp44 ABCD/T338A
RV	CTCTCCTGGGGCTGTATCAGCTGGGTCAGGTCCAGCAGC			

**Supplemental Table2** List of the primers and methods (SDM, side directed mutagenesis; PCR, polymerase chain reaction) employed to generate ERp44 mutants used in all main text figures.