

**Table S5. Primers Used in this Study.**

<b>Primer Number</b>	<b>Sequence</b>	<b>Information</b>
1	CGCGCGCCAAGCTTGATGTCTTTGTTCA AACAGCTGTTGATCGCTATC	Clone LapD for B2H Fwd
2	GCGCGCGCTCTAGAGTGCCCCAGGGTT TTGGCTCACCG	Clone LapD for B2H Rev
3	CGCACGCCAAGCTTGATGATCGCGAGC CGCACCCCTAC	Clone GcbC for B2H Fwd
4	GCGCGCGCTCTAGAGTGGCCACGACGA CCCGGTTTCG	Clone GcbC for B2H Rev
5	GAAGCCTTATCTGCAGAGCGATTTCG	Sequence GcbC Middle
6	CTGCGTACCGAGTCCTACCAGG	Sequence LapD Middle
7	GTTAGCTCACTCATTAGGCACCC	Sequence pUT18/pKNT25 Forward
8	GATGCCATCGAGTACGGCTG	Sequence pKNT25 Reverse
9	CCACAACAAGTCGATGCGTTCG	Sequence pUT18 Reverse
10	GCGACGAGCGAGATCAGCCTGCGGCA GCTGTTGTTTCGCGGCGGAC	Quick Change GcbC E477R Fwd
11	GTCCGCCGCGAACAACAGCTGCCGAG GCTGATCTCGTCTCGTCGC	Quick Change GcbC E477R Rev
12	GCATTCTGTAACAAAGCGGGACC	Sequence p72 Fwd
13	GCTACGGCGTTTCACTTCTGAG	Sequence p72 Rev
14	ACCCGTTTTTTTTGGGCTAGCGAATTCGA GCTCGGTACCCAGGAGCACGCGCTCAG ATGTC	LapD6H-GcbCHA Vector Fwd 1
15	ATGGTTCGGTTTCGGTATTAATGATGAT GATGATGATGTCCCAGG	LapD6H-GcbCHA Vector Rev 1
16	ATCATCATCATCATTAAATACCGAAACC GAACCATGATCGCG	LapD6H-GcbCHA Vector Fwd 2
17	TGCATGCCTGCAGGTCGACTCTAGAGG ATCCCCTTAAGCGTAATCTGGAACGTC ATATGG	LapD6H-GcbCHA Vector Rev 2
18	CCGATTCATTAATGCAGCTGGCAC	Sequence pMQ30 Fwd
19	CAGCCAAGCTCGCCATTCGC	Sequence pMQ30 Rev
20	CGTCGGCGTCGATCAGTTGGG	Sequence p72 LapD Rev
21	CTGGTGCTGCATTACAAGGTGCTG	Sequence p72 GcbC Fwd
22	GGTGCTCGACAGCCTGATCGAC	Confirm LapD Deletion Fwd
23	CCTGGAAATGATCCGGGTA CTGATG	Confirm LapD Deletion Rev
24	ACAGCTATGACCATGATTACGAATTCG AGCTCGGTACCCCGCGGCGCGCAGGGT TTCTTC	LapD Deletion Fwd 1
25	GAGCGTGGGAAAGATCAGCTGAGCGC GTGCTCCTAGTTAGTCG	LapD Deletion Rev 1
26	CTAGGAGCACGCGCTCAGCTGATCTTT CCCACGCTCCGCGTG	LapD Deletion Fwd 2
27	CAAGCTTGCATGCCTGCAGGTCGACTC TAGAGGATCCCCGGCGGCGCGGGCAAT GACATC	LapD Deletion Rev 2
28	TTTGGGCTAGCGAATTCGAGCTCGGTA	Clone pfl01_2295 p72 Fwd

	CCCACGGACTTTCATAAGGTAGTGAC GTGAAG	
29	CTTGCATGCCTGCAGGTCGACTCTAGA GGATCCCCCTAGATCAAGCCCGGCAGT TTCACC	Clone pfl01_2295 p72 Rev
30	CGAGCAGGGTCAGACCATTCCCGCCGG GGAATTCCTGCCCTGGCTGGAGCGCTT CGGC	Quick Change LapD R463E Fwd
31	GCCGAAGCGCTCCAGCCAGGGCAGGA ATTCCCCGGCGGGAATGGTCTGACCCT GCTCG	Quick Change LapD R463E Rev
32	CGCTTCCTGCCCTGGCTGCGGCGCTTCG GCTGGACCGCGCGAC	Quick Change LapD E469R Fwd
33	GTCGCGCGGTCCAGCCGAAGCGCCGCA GCCAGGGCAGGAAGCG	Quick Change LapD E469R Rev
34	GCCGGGCGCTTCCTGCCCTGGCTGGAG GAATTCGGCTGGACCGCGCGACTGGAC CGGTTG	Quick Change LapD R470E Fwd
35	CAACCGGTCCAGTCGCGCGGTCCAGCC GAATTCCTCCAGCCAGGGCAGGAAGCG CCCGGC	Quick Change LapD R470E Rev
36	CATCAGCACCTGGACGGCGACGAGCCG GATCAGCCTGGAGCAGCTGTTGTTTCG	Quick Change GcbC E473R Fwd
37	CGAACAAACAGCTGCTCCAGGCTGATCC GGCTCGTCGCCGTCCAGGTGCTGATG	Quick Change GcbC K485E Rev
38	GCAGCTGTTGTTTCGCGGGCGGACGAGGC GTTGTACCAAGCCAAGG	Quick Change GcbC E473R Fwd
39	CCTTGGCTTGGTACAACGCCTCGTCCG CCGCGAACAAACAGCTGC	Quick Change GcbC E473R Rev
40	CGCGCGCCAAGCTTGAAGCGAGATACA CACCTGGTTGTGC	Clone pfl01_2295 B2H Fwd
41	GCGCGCGCTCTAGAGTGATCAAGCCCG GCAGTTTCACCG	Clone pfl01_2295 B2H Rev
42	AGCTATGACCATGATTACGAATTCGAG CTCGGTACCCTCGCTCGCTGGAGCTTG AACATG	Pfl01_2295 Deletion Fwd 1
43	CGTGGTTTCACTTAAGG GTCACTACCTTATGGAAAGTCCGTTTTT C	Pfl01_2295 Deletion Rev 1
44	TCCATAAGGTAGTGACCCTTAAGTGA AACCACGCGGGAG	Pfl01_2295 Deletion Fwd 2
45	CAAGCTTGCATGCCTGCAGGTCGACTC TAGAGGATCCCCGGATGCTGCGTCGG CAGAAC	Pfl01_2295 Deletion Rev 2
46	GGTCCCGACTAACCCCTGTGCAACAA TTGATCGAAGCCGCCGATCAGGCGCTG TAC	Quick Change pfl01_2295 G476Q Fwd
47	GTACAGCGCCTGATCGGCGGCTTCGAT CAATTGTTGCACAGGGGTTAGTCGGGA ACC	Quick Change pfl01_2295 G476Q Rev
48	CTGTGCAAGGTTTGATCGAAGCCGCCG	Quick Change pfl01_2295

	ATAAGGCGCTGTACAGTGCCAAGGCCT TGGGGC	Q483K Fwd
49	GCCCCAAGGCCTTGGCACTGTACAGCG CCTTATCGGCGGCTTCGATCAAACCTT GCACAG	Quick Change pfl01_2295 Q483K Rev
50	CACTTCATTCGCCCCGAAGTGGAAAG	pfl01_2295 Deletion Verify Fwd
51	CAAATGCAGCTGTCTGAGGCATACTTG	pfl01_2295 Deletion Verify Rev
52	CGAGCGAGATCAGCCTGGAGCAGCTGT TGAAGGCGGCGGACAAGGCGTTGTACC AAGCC	Quick Change GcbC F481K Fwd
53	GGCTTGGTACAACGCCTTGTCCGCCGC CTTCAACAGCTGCTCCAGGCTGATCTC GCTCG	Quick Change GcbC F481K Rev
54	CCTGGAGCAGCTGTTGTTCGCGGCGCG CAAGGCGTTGTACCAAGCCAAGGAAG G	Quick Change GcbC D484R Fwd
55	CCTTCCTTGGCTTGGTACAACGCCTTGC GCGCCGCGAACAACAGCTGCTCCAGG	Quick Change GcbC D484R Rev
56	CAGACCATTCGCCCGGGCGCTTCCTG CCCGAGCTGGAGCGCTTCGGCTGGACC GCGCG	Quick Change LapD W467E Fwd
57	CGCGCGGTCCAGCCGAAGCGCTCCAGC TCGGGCAGGAAGCGCCCGGCGGGAAT GGTCTG	Quick Change LapD W467E Rev
58	CGCTTCCTGCCCTGGCTGGAGGACTTC GGCTGGACCGCGCGAC	Quick Change LapD R470D Fwd
59	GTCGCGCGGTCCAGCCGAAGTCCTCCA GCCAGGGCAGGAAGCG	Quick Change LapD R470D Rev
60	CGCTTCCTGCCCTGGCTGAAGCGCTTC GGCTGGACCGCGCG	Quick Change LapD E469K Fwd
61	CGCGCGGTCCAGCCGAAGCGCTTCAGC CAGGGCAGGAAGCG	Quick Change LapD E469K Rev
62	CAGCTATGACCATGATTACGAATTCGA GCTCGGTACCCCGCGGCGCGCAGGGTT TCTTCG	LapD Chromosomal Insertion Fwd 1
63	TGTTTGAACAAAGACATCTGAGCGCGT GCTCCTAGTTAGTCGTC	LapD Chromosomal Insertion Rev 1
64	TAGGAGCACGCGCTCAGATGTCTTTGT TCAAACAGCTGTTGATCGC	LapD Chromosomal Insertion Fwd 2
65	AGCGTGGGAAAGATCAG TCAGCCCCAGGGTTTTGGCTCAC	LapD Chromosomal Insertion Rev 2
66	CAAACCCTGGGGCTGACTGATCTTTC CCACGCTCCGCG	LapD Chromosomal Insertion Fwd 3
67	AAGCTTGCATGCCTGCAGGTCGACTCT AGAGGATCCCCGGCGGCGGGCAAT GACATCC	LapD Chromosomal Insertion Rev 3
68	TCAGTGACAAGCTTGATGTCAGTCTGCTC AAGCAATTGTTCCCTCGCCATCTGC	Clone PA14 LapD B2H Fwd
69	GCGCGCGCTCTAGAGTGGCATCCCCGG	Clone PA14 LapD B2H Rev

	ACCAGGGCGCC	
70	CGCGCGCCAAGCTTGGCCAGAACGACG CTCGAATCGATCC	Clone PA14 RoeA B2H Fwd
71	GCGCGCGCTCTAGAGTCCGCAGGCTTT CCGCGAGGCTG	Clone PA14 RoeA B2H Rev
72	CGCGCGCCAAGCTTGCGGCGCTTACGC TTTCCCCGCAAG	Clone PA14 04420 B2H Fwd
73	GCGCGCGCTCTAGAGTGCAACAGGCCA CGCAATCGCGACG	Clone PA14 04420 B2H Rev
74	CGCGCGCCAAGCTTGATGATGACCGAG CACGATGACCCGAC	Clone PA14 64050 B2H Fwd
75	GAGCGCGCTCTAGAGTCCGGGCGTTCGG GACGATATAACC	Clone PA14 64050 B2H Rev
76	CGCGCGCCAAGCTTGGGTATTGCCTGC CGTCGGCCGG	Clone PA14 65090 B2H Fwd
77	GCGCGCGCTCTAGAGTGGAGATACGCT CCGGTGCCAGGG	Clone PA14 65090 B2H Rev
78	CGCGCGCCAAGCTTGATGAAGCAAAG CGGACTCTCGGAACG	Clone pfl01_4086 B2H Fwd
79	GCGCGCGCTCTAGAGTACGGAACGTGC CAGGCGCCTTG	Clone pfl01_4086 B2H Rev
80	CGCGCGCCTCTAGACATGCCGAAATCT GTTGACCGTATTCCGC	Clone pfl01_1887 B2H Fwd
81	GCGCGCGGAGCTCCCTTCCAGCAATCCCTTC AATCCCTCAAGC	Clone pfl01_1887 B2H Rev
82	CGCGCGCCAAGCTTGATGGTCAACAAC AATCAAAAAGACTCATCCC	Clone pfl01_0190 B2H Fwd
83	GCGTCCGCTCTAGAGTGGCGGAAATGA TCCGGTTCTTGCC	Clone pfl01_0190 B2H Rev
84	GCCTGGAGCAGCTGTTGTTTCGCGGCGG ACGCGGCGTTGTACCAAGCCAAGGAAG GTGGGC	Quick Change GcbC K485A Fwd
85	GCCACCTTCCCTTGGCTTGGTACAACG CCGCGTCCGCCGGAACAACAGCTGCT CCAGGC	Quick Change GcbC K485A Rev
86	GCGAGATCAGCCTGGAGCAGCTGTTGG CCGCGGCGGACAAGGCGTTGTACCAAG CCAAG	Quick Change GcbC F481A Fwd
87	CTTGGCTTGGTACAACGCCTTGTCCGCC GCGGCCAACAGCTGCTCCAGGCTGATC TCGC	Quick Change GcbC F481A Rev
88	CGGCGACGAGCGAGATCAGCCTGGAG GCGCTGTTGTTTCGCGGCGGACAAGGCG TTGTACC	Quick Change GcbC Q478A Fwd
89	GGTACAACGCCTTGTCCGCCGCGAACA ACAGCGCCTCCAGGCTGATCTCGCTCG TCGCCG	Quick Change GcbC Q478A Rev
90	CCTGGACGGCGACGAGCGAGATCAGCC	Quick Change GcbC E477A

	TGGCGCAGCTGTTGTTTCGCGGCGGACA AGGCG	Fwd
91	CGCCTTGTCCGCCGCGAACAACAGCTG CGCCAGGCTGATCTCGCTCGTCGCCGT CCAGG	Quick Change GcbC E477A Rev
92	GATCAGCCTGGAGCAGCTGTTGGCCGC GGCGGACGCGGCGTTGTACCAAGCCAA GGAAGG	Quick Change GcbC K851A, F481A Fwd
93	CCTTCCTTGGCTTGGTACAACGCCGCGT CCGCCGCGGCCAACAGCTGCTCCAGGC TGATC	Quick Change GcbC K485A, F481A Rev
94	GGACGGCGACGAGCGAGATCAGCCTG GCGGCGCTGTTGTTTCGCGGCGGACAAG GCGTTG	Quick Change GcbC Q478A, E477A Fwd
95	CAACGCCTTGTCCGCCGCGAACAACAG CGCCGCCAGGCTGATCTCGCTCGTCGC CGTCC	Quick Change GcbC Q478A, E477A Rev
96	CGAGCGAGATCAGCCTGGCGCAGCTGT TGGCCGCGGCGGACGCGGCGTTGTACC AAGCC	Quick Change GcbC K485A, F481A, E477A Fwd
97	GGCTTGGTACAACGCCGCGTCCGCCGC GGCCAACAGCTGCGCCAGGCTGATCTC GCTCG	Quick Change GcbC K485A, F481A, E477A Rev
98	CGGCGACGAGCGAGATCAGCCTGGCG GCGCTGTTGGCCGCGGCGGACAAGGCG TTGTACC	Quick Change GcbC F481A, Q478A, E477A Fwd
99	GGTACAACGCCTTGTCCGCCGCGGCCA ACAGCGCCGCCAGGCTGATCTCGCTCG TCGCCG	Quick Change GcbC F481A, Q478A, E477A Rev
100	CGAGCGAGATCAGCCTGGCGGCGCTGT TGGCCGCGGCGGACGCGGCGTTGTACC AAGCC	Quick Change GcbC K485A, F481A, Q478A, E477A Fwd
101	GGCTTGGTACAACGCCGCGTCCGCCGC GGCCAACAGCGCCGCCAGGCTGATCTC GCTCG	Quick Change GcbC K485A, F481A, Q478A, E477A Rev
102	GCGAGATCAGCCTGGCGGCGCTGTTGG CCGCGGCGGCCGCGGCGTTGTACCAAG CCAAG	Quick Change GcbC K485A, D484A, F481A, Q478A, E477A Fwd
103	CTTGGCTTGGTACAACGCCGCGGCCGC CGCGGCCAACAGCGCCGCCAGGCTGAT CTCGC	Quick Change GcbC K485A, D484A, F481A, Q478A, E477A Rev

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