

**Table S1. Oligonucleotide primers used in this study**

| <b>Primer name</b> | <b>Sequence</b>   |
|--------------------|---|
| CDC-3 P1           | GTAATACGACTCACTATAGGGCGAATTGGGTACCaccctcaggccatgggaca             |
| CDC-3 P2           | CGATAAGCTTGATATCGAATTCCTACTTGTAtgaccccgcatgtgtcttc                |
| CDC-3 P3           | GTAATACGACTCACTATAGGGCGAATTGGGTACCcttctaccttgagcgacaacc           |
| CDC-3 P4           | GCCTCCGCCTCCGCCTCCGCCCTCCGCCctggagagaaaatcccttc                   |
| CDC-3 P5           | CAAAGGAATAGAGTAGATGCCGACCGGGATAACcatgttatcccgatacacc              |
| CDC-3 P6           | CTACTAAAGGGAACAAAAGCTGGAGCTCCtgagacagatgagaaccacc                 |
| CDC-10 P1          | GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCtgaagtatcccagcagttcc        |
| CDC-10 P2          | CGATAAGCTTGATATCGAATTCCTACTTGTAcaggcaacctaacctaactgg              |
| CDC-10 P3          | GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCgtttcgacagcatcact           |
| CDC-10 P4          | GCCTCCGCCTCCGCCTCCGCCCTCCGCCgtagccgtcatggtcat                     |
| CDC-10 P5          | GCTATACGAAGTTATGGATCCGAGCTCGGTACgtggagtggaacttctaacc              |
| CDC10 P6           | CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCcctccaagttaggattcatgc            |
| CDC-10 N1          | GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCgggagggaagttgttggagaa       |
| CDC-10 N2          | GCTATACGAAGTTATGGATCCGAGCTCGGTACcctcaacttcgccgtgc                 |
| CDC-10 N3          | CGATAAGCTTGATATCGAATTCCTACTTGTAgctgtgtcctgagggttgg                |
| CDC-10 N4 GFP      | GGTGAACAGCTCCTCGCCCTTGCTCACCATgattcgaaactgatggggg                 |
| CDC-10 N4 V5       | CCGAGGAGGGGGTTGGGGATGGGCTTGCCCATgattcgaaactgatggggg               |
| CDC-10 N5          | GGCGGAGGCGGGAGGCGGAGGCGGAGGCGGAGGCGatgtcgacctgggccct              |
| CDC-10 N6          | CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCcctccaagttagcagcc                |
| CDC-10 CCG1 P9     | TTCACAACCCCTCACATCAACCAAATCTAGatgtcgacctgggccct                   |
| CDC-10 P9 IFNTERM  | GGAGGCGGGGAGGCGGGCcatgtcgacctgggccct                              |
| CDC-10 P2 IF NTERM | TGGCGGCCGCTCTAGActagtagccgttcatggtcatgcg                          |
| CDC-11 P1          | GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCatgacagcagacttgagc          |
| CDC-11 P2          | CGATAAGCTTGATATCGAATTCCTACTTGTAtagaggtgaggtagttgtg                |
| CDC-11 P3 V2       | GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCgattaaccattgcattatctcccaggc |
| CDC-11 P4 V2       | GCCTCCGCCTCCGCCTCCGCCCTCCGCCgtttccatctgggaaccgttaatttc            |
| CDC-11 P5          | GCTATACGAAGTTATGGATCCGAGCTCGGTACacgacactagcacacataacc             |
| CDC-11 P6          | CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCcaagtatcatgtggaggagg             |
| CDC-12 P1          | GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCgaagttcagttacaggctgc        |
| CDC-12 P2          | CGATAAGCTTGATATCGAATTCCTACTTGTAgggtagaggattaagtcagc               |
| CDC-12 P3          | GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCcacaaggtgagctcagaggag       |
| CDC-12 P4          | GCCTCCGCCTCCGCCTCCGCCCTCCGCCgcccggaccgtggctg                      |
| CDC-12 P5          | GCTATACGAAGTTATGGATCCGAGCTCGGTACaactggcgacttacataacc              |
| CDC-12 P6          | CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCgtacttgggtccttagc                |
| ASP-1 P1           | GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCctatcctctctctcttc           |
| ASP-1 P2           | CGATAAGCTTGATATCGAATTCCTACTTGTAAgaggttaactaaagccgacc              |
| ASP-1 P3           | GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCcaagagtccctggcac            |
| ASP-1 P4           | GCCTCCGCCTCCGCCTCCGCCCTCCGCCcaggatctttggcc                        |
| ASP-1 P5           | GCTATACGAAGTTATGGATCCGAGCTCGGTACccatgttatggagacagagc              |

ASP-1 P6 CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCgatagagacaggacagagg  
 ASP-1 N1 GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCgcgatttggcctggctt  
 ASP-1 N2 GCTATACGAAGTTATGGATCCGAGCTCGGTACctttggaccgatggaggtag  
 ASP-1 N3 CGATAAGCTTGATATCGAATTCTTACTTGTAcgtctatcctcctctctcttccc  
 ASP-1 N4 GFP GGTGAACAGCTCCTCGCCCTTGCTCACCATagctctcggtagagactgaatgc  
 ASP-1 N4 V5 CCGAGGAGGGGGTTGGGGATGGGCTTGCCCATagctctcggtagagactgaatgc  
 ASP-1 N5 GGCGGAGGCGGCGGAGGCGGAGGCGGAGGCatgaaccagtctcctcctcgc  
 ASP-1 N6 CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCcccagaccgccctctttagc  
 ASP-1 CCG1 P9 TTCACAACCCCTCACATCAACCAAATCTAGatgaaccagtctcctcctcgc  
 ASP-1 P9 IF NTERM GGAGGCGGCGGAGGCGGCatgaaccagtctcctcctcgc  
 ASP-1 P2 IF NTERM TGGCGGCCGCTCTAGActaacggatctttgcgcc  
 ASP-2 P1 GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCgacacatcttggtgacagc  
 ASP-2 P2 CGATAAGCTTGATATCGAATTCTTACTTGTAggaatggtagctagtagg  
 ASP-2 P3 GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCgctgggtggagagggtgt  
 ASP-2 P4 GCCTCCGCCTCCGCCTCCGCCCTCCGCCcccacaaatccgattccac  
 ASP-2 P5 GCTATACGAAGTTATGGATCCGAGCTCGGTACggttgatcctctgctactgg  
 ASP-2 P6 CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCatcagctgctgtagtcttgg  
 ASP-2 N1 GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCcgcttccacgtcgcacttt  
 ASP-2 N2 GCTATACGAAGTTATGGATCCGAGCTCGGTACgattccccgacggtgttactc  
 ASP-2 N3 CGATAAGCTTGATATCGAATTCTTACTTGTAgacacatcttggtgacagcg  
 ASP-2 N4 GFP GGTGAACAGCTCCTCGCCCTTGCTCACCATcgcaaagagagcaatctacatacac  
 ASP-2 N4 V5 CCGAGGAGGGGGTTGGGGATGGGCTTGCCCATcgcaaagagagcaatctacatacac  
 ASP-2 N5 GGCGGAGGCGGCGGAGGCGGAGGCGGAGGCatgctgctcaacaacgatgc  
 ASP-2 N6 CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCgacctgaaccgctttagctg  
 ASP-2 CCG1 P9 TTCACAACCCCTCACATCAACCAAATCTAGatgctgctcaacaacgatg  
 ASP-2 IF NTERM P9 GGAGGCGGCGGAGGCGGCatgctgctcaacaacgatg  
 ASP-2 P2 IF NTERM TGGCGGCCGCTCTAGAtcaccgccaaatccgatt  
 HPH Y HR FW CC TACAAGTAAGAATTCGATATCAAGC  
 HPH YHR RV DD GTACCGAGCTCGGATCC  
 NAT Y HR FW CC TACAAGTAAGAATTCGATATCAAGCTTATCGcaactgatattgaaggacatttt  
 NAT Y HR RV DD GTACCGAGCTCGGATCCATAACTTCGTATAGCcttctgacgaattcagatg  
 NAT Y HR RV YY CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCcttctgacgaattcagatg  
 YRC BB GFP TAGT FW GGCGGAGGCGGCGGAGGCGGAGGCGGAGGCATGGTG  
 YRC CC RV CGATAAGCTTGATATCGAATTCTTACTTGTACAGCTCGTCCATGCC  
 MCHERRY FW BB YRC GGCGGAGGCGGCGGAGGCGGAGGCGGAGGCatggtgagcaaggcgaggg  
 MCHERRY RV CC YRC CGATAAGCTTGATATCGAATTCTTACTTGTACAGCTCGTCCATGCC  
 V5 HAT YRC A FW GGCGGAGGCGGCGGAGGCGGAGGCGGAGGCGGCAAGCCCATCCCCAACCCCTCCTCGGAC  
 TCGACAGCACC  
 V5 HAT YRC B RV V2 CTTGTGGACGTTGTGGATGAGGTGGTCTTGGCGCCGGCGCCGGCGCCGGTGTGTCGAGTC  
 CGAGGAGGGGGTTGGG  
 V5 HAT YRC C FW V2 AAGGACCACCTCATCCACAACGTCCACAAGGAGGAGCAGCCACGCCACAACAAGTAAT  
 ACAAGTAAGAATTCGATATCAAGCTTATCG

|                        |   |
|------------------------|---|
| YRC NT FP START FW     | ATGGTGAGCAAGGGCGAGG   |
| YRC NT V5-HAT START FW | ATGGGCAAGCCCATCCCCAAC                                       |
| YRC NT FP RV BB        | GCCTCCGCCTCCGCCTCCGCCCGCTCCGCCctgtacagctcgccatgcc           |
| YRC NT V5-HAT RV BB    | GCCTCCGCCTCCGCCTCCGCCCGCTCCGCCctgtgtggcggtgggc              |
| TAGRFP IF Fw           | CCCCGGGTAAATTAAGGGAGCTGGTGCAATGGTGTCTAAGGGCGAAGA            |
| TAGRFP IF Rv           | CGATAAGCTTGATATCGAATTCTTACTTGTACAGCTCGTCC                   |
| PCCG1 FW YRC XX        | GTAATACGACTCACTATAGGGCGAATTGGGGCGGCCGCgctagaaggagcagtcacatc |
| BTUB RV YRC BB         | GCCTCCGCCTCCGCCTCCGCCCGCTCCGCCgtaattaactectecgcctc          |
| CDC-3 G1               | TCCCCTTAGCATGTCCTTTT  |
| CDC-3 G2               | AAGAGAGTGTTAACGAGGGTC                                       |
| CDC-3 G3               | CTTCTACCTTGAGCGACAACC                                       |
| CDC-3 G4               | GGGGCATAGACAAATTCCT   |
| CDC-10 G1              | CTTCACACATGGACACCTAGA                                       |
| CDC-10 G2              | GGGGTGTGACAATGTT  |
| CDC-10 G3              | GTTTCGACAGCATCACCT  |
| CDC-10 G4              | CTTATCCTCCACCTGGAGT   |
| CDC-11 G1              | CTCGGTTACCAAGTGGAATG  |
| CDC-11 G2              | TGATGAAGTAGAGCATGGC   |
| CDC-11 G3              | CCTTTGTCAACACCCTCTG   |
| CDC-11 G4              | CATCTTCGTCTTCCTCACAG  |
| CDC-12 G1              | GAAGTGGAGGACTCTTTCGAG                                       |
| CDC-12 G2              | AAACCTACCCTGGACTTGAA  |
| CDC-12 G3              | GTTCTTCAAGGGTACGACAG  |
| CDC-12 G4              | CAGCCATCTCGAGTACATCAT                                       |
| ASP-1 G1               | GTCGTTTGTGATCTCATCGA  |
| ASP-1 G2               | GCTAGCATAGCTGTAACGTCC                                       |
| ASP-1 G3               | CAAGAGTGCCTTGGCAC   |
| ASP-1 G4               | GCCAACATCTCGAGTACTTTC                                       |
| ASP-2 G1               | CAACACCAGGGATTTCGT  |
| ASP-2 G2               | CGACGATGTGTCACTGACA   |
| ASP-2 G3               | GACTAAAGGCGGTTCAAGGTC                                       |
| ASP-2 G4               | CCTGAGATCAAATTGCCAACG                                       |
| MUS-51 Fw              | CTTGGAGGAAGGATCAGGAT  |
| MUS-51 Rv              | CTCTCAACTAGCTCAGCC  |
| MUS-52 Fw              | GACAAGGAAGCCACAGTCTA  |
| MUS-52 Rv              | CTCCGAGAGAAGGGCGTC  |
| ACT-1 Fw               | GACGACATGGAGAAGATTTGG                                       |
| ACT-1 Rv               | CCTAGCCTATACTGCCATCTCC                                      |
| HPH 1 Fw               | TCACTGGCAAACGTGATG  |
| HPH 2 Rv               | ACACATGGGGATCAGCAATC  |
| NAT 1 Fw               | CTTCGTGGTTCGTCTCGTA   |

|             |                       |
|-------------|-----------------------|
| NAT 2 Rv    | CGCCAGGTCGCCGTCG      |
| HIS-3 3' Fw | TTGCCATCTCCACCATCC    |
| HIS-3 5' Rv | GCTGTAGACCAGACCCAGAGC |
| GFP Fw      | CAAGATCCGCCACAACATCG  |
| GFP Rv      | ATGTGGTCGGGGTAGCGG    |