

# **GprC of the nematode-trapping fungus *Arthrobotrys flagrans* activates mitochondria and reprograms fungal cells for nematode hunting**

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**Supplementary Table 1: *A. flagrans* strains used in this study.**

| Strain | Genotype                                                                      | Reference  |
|--------|-------------------------------------------------------------------------------|------------|
| SXD39  | $\Delta$ gasA PXD66; hph                                                      | This study |
| SXD40  | $\Delta$ gasB PXD64; hph                                                      | This study |
| SXD42  | SXD39 x gasA(p)::gasA::gasA(t) PXD71; G418                                    | This study |
| SXD43  | SXD40 x gasB(p)::gasB::gasB(t) PXD72; G418                                    | This study |
| SXD44  | SXD39 x artA(p)::h2b:mCherry::tuB(t) PXD73; G418                              | This study |
| SXD57  | $\Delta$ gprC PXD103; hph                                                     | This study |
| SXD62  | SXD57 x gprC(p)::gprC::gprC(t) PXD106; G418                                   | This study |
| SXD82  | SXD57 x gprC(p)::daf-37(N)::gprC(C)::gprC(t) PXD128; G418                     | This study |
| SXD83  | SXD57 x gprC(p)::srbc-64(N)::gprC(C)::gprC(t) PXD127; G418                    | This study |
| SXD84  | SXD57 x gprC(p)::daf-38(N)::gprC(C)::gprC(t) PXD133; G418                     | This study |
| SXD85  | SXD57 x gprC(p)::octr-1(N)::gprC(C)::gprC(t) PXD134; G418                     | This study |
| SXD99  | SXD57 x gprC(p)::srbc-66(N)::gprC(C)::gprC(t) PXD132; G418                    | This study |
| SXD116 | SXD57 x artA(p)::h2b:mCherry::tuB(t) PXD73; G418                              | This study |
| SXD117 | oliC(p)::gprC::GFP::tub(t) PXD166; hph                                        | This study |
| SXD121 | gprC(p)::gprC::GFP::tub(t) PXD167; hph                                        | This study |
|        | gasA(p)::GFPN::gasA::tub(t) PXD157; hph                                       |            |
| SXD122 | gprC(p)::gprC::GFPC::tub(t) PXD159; G418                                      | This study |
| SXD123 | SXD57 x gprC(p)::gprC <sup>S2.41A</sup> ::gprC(t) PXD142; G418                | This study |
| SXD124 | SXD57 x gprC(p)::gprC <sup>R6.45A</sup> ::gprC(t) PXD143; G418                | This study |
| SXD125 | SXD57 x gprC(p)::srbc-66::gprC(t) PXD151; G418                                | This study |
| SXD126 | SXD57 x gprC(p)::gprC <sup>N2.53A</sup> ::gprC(t) PXD152; G418                | This study |
| SXD127 | SXD57 x gprC(p)::gprC <sup>N2.57A</sup> ::gprC(t) PXD162; G418                | This study |
| SXD128 | SXD57 x gprC(p)::srbc-64(N) <sup>N2.60A</sup> ::gprC(C)::gprC(t) PXD163; G418 | This study |
| SXD129 | SXD39 x gasA(p)::GFP::gasA::gasA(t) PXD170; G418                              | This study |

|        |                                                           |            |
|--------|-----------------------------------------------------------|------------|
| SXD135 | <i>SXD57 x gprC(p)::gprC::GFP::gprC(t) PXD176; G418</i>   | This study |
| SXD162 | <i>oliC(p)::citA<sup>N</sup>::GFP::tub(t) PXD209; hph</i> | This study |
| SMW01  | <i>ΔgprA PMW01; hph</i>                                   | This study |
| SMW02  | <i>ΔgprB PMW02; hph</i>                                   | This study |
| SMW04  | <i>ΔgprD PMW04; hph</i>                                   | This study |
| SMW05  | <i>ΔgprE PMW05; hph</i>                                   | This study |
| SMW06  | <i>ΔgprF PMW06; hph</i>                                   | This study |

**Supplementary Table 2: Plasmids used in this study.**

| <b>Name</b> | <b>Description</b>                                                       | <b>Reference</b> |
|-------------|--------------------------------------------------------------------------|------------------|
| PXD64       | <i>ΔgasB; Amp; hph</i>                                                   | This study       |
| PXD66       | <i>ΔgasA; Amp; hph</i>                                                   | This study       |
| PXD71       | <i>gasA(p)::gasA::gasA(t); Amp; G418</i>                                 | This study       |
| PXD72       | <i>gasB(p)::gasB::gasB(t); Amp; G418</i>                                 | This study       |
| PXD73       | <i>artA(p)::h2b:mCherry::tuB(t); Amp</i>                                 | This study       |
| PXD103      | <i>ΔgprC; Amp; hph</i>                                                   | This study       |
| PXD106      | <i>gprC(p)::gprC::gprC(t); Amp; G418</i>                                 | This study       |
| PXD121      | <i>pGBKT-7::gasA; Kan</i>                                                | This study       |
| PXD125      | <i>pGADT-7::gasA; Amp</i>                                                | This study       |
| PXD127      | <i>gprC(p)::srbc-64(N)::gprC(C)::gprC(t); Amp; G418</i>                  | This study       |
| PXD128      | <i>gprC(p)::daf-37(N)::gprC(C)::gprC(t); Amp; G418</i>                   | This study       |
| PXD132      | <i>gprC(p)::srbc-66(N)::gprC(C)::gprC(t); Amp; G418</i>                  | This study       |
| PXD133      | <i>gprC(p)::daf-38(N)::gprC(C)::gprC(t); Amp; G418</i>                   | This study       |
| PXD134      | <i>gprC(p)::octr-1(N)::gprC(C)::gprC(t); Amp; G418</i>                   | This study       |
| PXD142      | <i>gprC(p)::gprC<sup>S2.41A</sup>::gprC(t); Amp; G418</i>                | This study       |
| PXD143      | <i>gprC(p)::gprC<sup>R6.45A</sup>::gprC(t); Amp; G418</i>                | This study       |
| PXD151      | <i>gprC(p)::srbc-66::gprC(t); Amp; G418</i>                              | This study       |
| PXD152      | <i>gprC(p)::gprC<sup>N2.53A</sup>::gprC(t); Amp; G418</i>                | This study       |
| PXD157      | <i>gasA(p)::GFPN::gasA::tub(t); Amp; hph</i>                             | This study       |
| PXD159      | <i>gprC(p)::gprC::GFPC::tub(t); Amp; G418</i>                            | This study       |
| PXD162      | <i>gprC(p)::gprC<sup>N2.57A</sup>::gprC(t); Amp; G418</i>                | This study       |
| PXD163      | <i>gprC(p)::srbc-64(N)<sup>N2.60A</sup>::gprC(C)::gprC(t); Amp; G418</i> | This study       |
| PXD166      | <i>oliC(p)::gprC::GFP::tub(t); Amp; hph</i>                              | This study       |
| PXD167      | <i>gprC(p)::gprC::GFP::tub(t); Amp; hph</i>                              | This study       |
| PXD170      | <i>gasA(p)::GFP::gasA::tub(t); Amp; G418</i>                             | This study       |

|        |                                                    |            |
|--------|----------------------------------------------------|------------|
| PXD176 | <i>gprC(p)::gprC::GFP::tub(t); Amp; G418</i>       | This study |
| PXD187 | <i>pGADT-7::gprCtail; Amp</i>                      | This study |
| PXD189 | <i>pGADT-7::gprC; Amp</i>                          | This study |
| PXD190 | <i>pGBKT-7::gprC; Kan</i>                          | This study |
| PXD197 | <i>pGBKT-7::gprCtail; Kan</i>                      | This study |
| PXD209 | <i>oliC(p)::citA<sup>N</sup>::GFP::tub(t); hph</i> | This study |
| pMW01  | <i>ΔgprA; trpC(p)::hph::trpC(t); Amp; hph</i>      | This study |
| pMW02  | <i>ΔgprB; trpC(p)::hph::trpC(t); Amp; hph</i>      | This study |
| pMW04  | <i>ΔgprD; trpC(p)::hph::trpC(t); Amp; hph</i>      | This study |
| pMW05  | <i>ΔgprE; trpC(p)::hph::trpC(t); Amp; hph</i>      | This study |
| pMW06  | <i>ΔgprF; trpC(p)::hph::trpC(t); Amp; hph</i>      | This study |

**Supplementary 3: Oligonucleotides used in this study.**

| Name                 | Sequence (from 5' to 3')                              | Description          |
|----------------------|-------------------------------------------------------|----------------------|
| GasALB-pjet-ol-for   | GATGGCTCGAGTTTTTTCAGCAAGATACCTTC<br>GTCATCATCAGATCA   | <i>gasA</i> deletion |
| GasALB-H-ol-rev      | GTTGACCTCCACTAGCATTACACTTTTTGAC<br>GGTGTTCCTTTAGAAAAA | <i>gasA</i> deletion |
| GasARB-H-ol-for      | ATGCTCTTCCCTAAACTCCCCCAACGAGT<br>TCCCGACCAATGA        | <i>gasA</i> deletion |
| GasARB-pjet-ol-rev   | ATTGTAGGAGATCTTCTAGAAAGATAATACA<br>TGAACACACACCAGG    | <i>gasA</i> deletion |
| H-GasALB-ol-for      | TTTTTCTAAAGAAACACCGTCAAAAAGTGT<br>AATGCTAGTGGAGGT     | <i>gasA</i> deletion |
| H-GasARB-ol-rev      | TGTTGGTCATTGGTCGGGAACCTCGTTGGGG<br>GGAGTTTAGGGAAA     | <i>gasA</i> deletion |
| GasAko_up_for        | CCTGCAAGAGGGGAGCAAA                                   | <i>gasA</i> deletion |
| GasAko_down_rev      | CCTCGATTACAATTGTTTGAG                                 | <i>gasA</i> deletion |
| GasA_LB_for          | ACCTTCGTCATCATCAGATCA                                 | <i>gasA</i> deletion |
| GasA_LB_rev          | AAAAATGCCAGCGGCAGAG                                   | <i>gasA</i> deletion |
| GasA_RB_rev          | AATACATGAACACACACCAGG                                 | <i>gasA</i> deletion |
| GasA_ORF_for         | ATGGGTTGCAGCATGTCTAC                                  | <i>gasA</i> deletion |
| GasA_ORF_rev         | TTATATCAGACCGCAGTTTCTG                                | <i>gasA</i> deletion |
| GasBLB_pjet_ol_for   | GATGGCTCGAGTTTTTTCAGCAAGATCACCA<br>CTGCAGTAACCTCTA    | <i>gasB</i> deletion |
| GasBLB-H-ol-rev      | GTTGACCTCCACTAGCATTACACTTTTTGGC<br>TGAATTGCAATCTC     | <i>gasB</i> deletion |
| GasBRB-H-ol-for      | ATGCTCTTCCCTAAACTCCCCCACCAGCT<br>AAAAATACCAACATCC     | <i>gasB</i> deletion |
| GasBRB-pjet-ol-rev   | ATTGTAGGAGATCTTCTAGAAAGATTCCGAG<br>ATAGCGGTGTTCA      | <i>gasB</i> deletion |
| H-GasBLB-ol-for      | TCGGTGAGATTGCAAGTCAGCCAAAAAGTG<br>TAATGCTAGTGGAGGT    | <i>gasB</i> deletion |
| H-GasBRB-ol-rev      | GTCGGATGTTGGTATTTTTAGTCGGTGGGG<br>GGAGTTTAGGGAAA      | <i>gasB</i> deletion |
| GasB_KO_up_for_n     | TGACTAGTAGCCCAAATGAAC                                 | <i>gasB</i> deletion |
| GasB_KO_down_rev_n   | TAGACGGGCTGCATTTTGG                                   | <i>gasB</i> deletion |
| GasB_LB_for          | CACCACTGCAGTAACCTCTA                                  | <i>gasB</i> deletion |
| GasB_RB_for          | CCGACTAAAAATACCAACATCC                                | <i>gasB</i> deletion |
| GasB_RB_rev          | TCCGAGATAGCGGTGTTCA                                   | <i>gasB</i> deletion |
| GasB_ORF_for         | ATGGGTGGCTGCATGTCG                                    | <i>gasB</i> deletion |
| GasB_ORF_rev         | TTATAAGATACCAGAGTCCTTGA                               | <i>gasB</i> deletion |
| BB_TrpC P_for        | AAGTGTAATGCTAGTGGAGGT                                 | Recomplement         |
| BB_Pjet_rev          | ATCTTGCTGAAAACTCGAGC                                  | Recomplement         |
| GasALB_recomp_ol_for | GATGGCTCGAGTTTTTTCAGCAAGATCGTAAC<br>GACGCCGATTGAAT    | Recomplement         |
| GasARB_recomp_ol_rev | GTTGACCTCCACTAGCATTACACTTCCTCGA<br>TTACAATTGTTTGAG    | Recomplement         |
| GasBLB_recomp_ol_for | GATGGCTCGAGTTTTTTCAGCAAGATGGAGG<br>GGTTGTAAAGGATGT    | Recomplement         |
| GasBRB_recomp_ol_rev | GTTGACCTCCACTAGCATTACACTTTCCGAG<br>ATAGCGGTGTTCA      | Recomplement         |

|                     |                                                        |                            |
|---------------------|--------------------------------------------------------|----------------------------|
| gprCre_ol_for       | GATGGCTCGAGTTTTTTCAGCAAGATCCCAA<br>TCCATGGTGAACCA      | Recomplement               |
| gprCre_ol_rev       | GTTGACCTCCACTAGCATTACACTTACTCCC<br>TATTAGCTTTCATGG     | Recomplement               |
| artA(p)-h2b-fw      | CTCTTCCCTAAACTCCCCCACCTCAACGA<br>ACCGCTTACA            | <i>artA</i> reporter assay |
| artA(p)-h2b-rev     | CGGCGGCTTTTGGTGGCATGGCAGGCCAAA<br>GAAGTCAAG            | <i>artA</i> reporter assay |
| GprCLB_pjet_ol_for  | GATGGCTCGAGTTTTTTCAGCAAGATCCTTGT<br>TTCGCCATGACATG     | <i>gprC</i> deletion       |
| GprCLB_H_ol_rev     | GTTGACCTCCACTAGCATTACACTTGGTTGC<br>GTCAGTGTATTATCA     | <i>gprC</i> deletion       |
| GprCRB_H_ol_for     | ATGCTCTTCCCTAAACTCCCCCACC GCG<br>AAGAGAGTAATGAAC       | <i>gprC</i> deletion       |
| GprCRB_pjet_ol_rev  | ATTGTAGGAGATCTTCTAGAAAGATCACTGA<br>TCCCCTGTATATTGA     | <i>gprC</i> deletion       |
| H_GprCLB_ol_for     | CGGATGATAATACACTGACGCAACCAAGTG<br>TAATGCTAGTGGAGGT     | <i>gprC</i> deletion       |
| H_GprCRB_ol_rev     | TTCTAGTTCATTACTCTCTTCGCGGTGGGGG<br>GAGTTTAGGGAAA       | <i>gprC</i> deletion       |
| GprCLB_for          | CCTTGTTTCGCCATGACATG                                   | <i>gprC</i> deletion       |
| GprCRB_rev          | CACTGATCCCCTGTATATTGA                                  | <i>gprC</i> deletion       |
| GprCORF_for         | ATGGCCTTCACGACACTTTC                                   | <i>gprC</i> deletion       |
| GprCORFin_rev       | TGTTTCCGAAATCCAGACTTC                                  | <i>gprC</i> deletion       |
| GprCORF_rev         | TTACTCTCTTCGCGGTCCC                                    | <i>gprC</i> deletion       |
| GprCko_up_for       | AAAAGCAAATGGAATGGACCC                                  | <i>gprC</i> deletion       |
| GprCko_down_rev     | ACTCCCTATTAGCTTTCATGG                                  | <i>gprC</i> deletion       |
| SRBC64_3rLB_ol_for  | CGGATGATAATACACTGACGCAACCATGCC<br>TGAAATAGTAATAATCTTG  | Chimeric protein           |
| SRBC64N_3rC_ol_rev  | CAGCCATGTGTCATCACATATCGAATTGAAT<br>TTGGTCTCTTGAGAC     | Chimeric protein           |
| gprC_C_for          | TTCGATATGTGATGACACATGG                                 | Chimeric protein           |
| gprC_LB_rev         | GGTTGCGTCAGTGTATTATCA                                  | Chimeric protein           |
| Daf37_3rLB_ol_for-n | CGGATGATAATACACTGACGCAACCATGGA<br>TGTCATTGGGAACAT      | Chimeric protein           |
| Daf37N_3rC_ol_rev-n | CAGCCATGTGTCATCACATATCGAAAGAATA<br>TACCTGCTGATAAATAG   | Chimeric protein           |
| SRBC66_3rLB_ol_for  | CGGATGATAATACACTGACGCAACCATGTC<br>AGCCATTACTATAACTTG   | Chimeric protein           |
| SRBC66N_3rC_ol_rev  | CAGCCATGTGTCATCACATATCGAATTGAAC<br>CTGGTCTCGTAACG      | Chimeric protein           |
| SRBC66C_3rRB_ol_rev | CATTAATTATCAACTTCTAGTTCATTAATATG<br>TAGTAATAACTGTTGAAC | Chimeric protein           |
| octr_3rLB_ol_for    | CGGATGATAATACACTGACGCAACCATGTG<br>GAACCTTAACTGCAGT     | Chimeric protein           |
| octrN_3rC_ol_rev    | CAGCCATGTGTCATCACATATCGAAATCAGT<br>GCTAACGGAGCACT      | Chimeric protein           |
| Daf38_3rLB_ol_for   | CGGATGATAATACACTGACGCAACCATGCTT<br>CTCCCTTCAAACCTTG    | Chimeric protein           |
| Daf38N_3rC_ol_rev   | CAGCCATGTGTCATCACATATCGAACCAGAA<br>CTCGGCGTCAAA        | Chimeric protein           |

|                        |                                                                                                            |                 |
|------------------------|------------------------------------------------------------------------------------------------------------|-----------------|
| GprC_Asc1_Polic_for    | TCACAATCGATCCAACCGGCGGCCATGGC<br>CTTCACGACACTTTC                                                           | GprC-GFP fusion |
| GprC_GFP_Pacl_ol_rev   | TCACCCTTGGAACCATCTTAATTAAGTCTC<br>TTCGCGGTCCCG                                                             | GprC-GFP fusion |
| BB_pacl_GFP_for        | TTAATTAAGATGGTTTCCAAGGG                                                                                    | GprC-GFP fusion |
| BB_Polic_Asc1_rev      | GGCGCGCCGGTTGGAT                                                                                           | GprC-GFP fusion |
| GprCLB_ol_for          | TTTCCCTAAACTCCCCCACTGCAGCCCCAAA<br>TCCATGGTGAACCA                                                          | GprC-GFP fusion |
| GprC_GFP_Pacl_ol_rev   | TCACCCTTGGAACCATCTTAATTAAGTCTC<br>TTCGCGGTCCCG                                                             | GprC-GFP fusion |
| GasALB_hph_ol_for      | TTTCCCTAAACTCCCCCACTGCAGCGTAAC<br>GACGCCGATTGAAT                                                           | GasA-GFP fusion |
| GasA_pac1GFP_ol_rev    | CACCCTTGGAACCATCTTAATTAATATCAG<br>ACCGCAGTTTCTGA                                                           | GasA-GFP fusion |
| citA40AA_Asc1_ol_for   | TCACAATCGATCCAACCGGCGGCCATGGC<br>TTCTACACTCAGACTT                                                          | CitA-GFP fusion |
| citA40AA_GFP_ol_rev    | CACCCTTGGAACCATCTTAATTAAGTGGT<br>CTTGCCGGTAGAG                                                             | CitA-GFP fusion |
| BB_Tgluc_for           | CGTATGTAGATAAGATGTATGATT                                                                                   | Split-GFP       |
| GFPN_rev               | GGCCATGATATAAACGTTGTG                                                                                      | Split-GFP       |
| GasA_15aa_NgfpN_ol_for | CAGTCACAACGTTTATATCATGGCCAGATCC<br>ACCTCCGCCTGAACCGCCTCCACCAGATGG<br>GCCTCCACCATGGGTTGCAGCATGTCTAC         | Split-GFP       |
| GasA_Tgluc_ol_rev      | TAATCATACATCTTATCTACATACGTTATATC<br>AGACCGCAGTTTCTG                                                        | Split-GFP       |
| GasB_15aa_NgfpN_ol_for | CAGTCACAACGTTTATATCATGGCCAGATCC<br>ACCTCCGCCTGAACCGCCTCCACCAGATGG<br>GCCTCCACCATGGGTGGCTGCATGTCTG          | Split-GFP       |
| GasB_Tgluc_ol_rev      | TAATCATACATCTTATCTACATACGTTATAAG<br>ATACCAGAGTCCTTGA                                                       | Split-GFP       |
| GFPC_for               | GACAAGCAAAAAATGGAATCAAG                                                                                    | Split-GFP       |
| GprC_Asc1_Polic_for    | TCACAATCGATCCAACCGgcgcgccATGGCCTT<br>CACGACACTTTC                                                          | Split-GFP       |
| GprC_17aa_CgfpC_rev    | CCTTGATTCCATTTTTTGTCTGTCGTGGTT<br>CATGACCTTCTGTTTCAGGTCGTTCTGGGATC<br>TTGCAGGCCGGCGGCCTCTCTTCGCGGT<br>CCCG | Split-GFP       |
| 3rre_ol_for            | GATGGCTCGAGTTTTTCAGCAAGATCCCCAAA<br>TCCATGGTGAACCA                                                         | Site-mutation   |
| 3rre-R6.45A -rev       | GGATGAAAGCAAAAAGCCCAG                                                                                      | Site-mutation   |
| 3rre-R6.45A-for        | CTGGGCTTTTGCTTTCATCC                                                                                       | Site-mutation   |
| 3rre_ol_rev            | GTTGACCTCCACTAGCATTACACTTACTCCC<br>TATTAGCTTTCATGG                                                         | Site-mutation   |
| 3rre-S2.41A-rev        | CAAAATCAAAGCATGTGCAAAATG                                                                                   | Site-mutation   |
| 3rre-S2.41A-for        | CATTTTCGACATGCTTTGATTTTG                                                                                   | Site-mutation   |
| 3rre-N2.57A-rev        | GCTCTAATGCTTCCACATCC                                                                                       | Site-mutation   |
| 3rre-N2.57A-for        | GGATGTGGAAGCATTAGAGC                                                                                       | Site-mutation   |
| 3rre-N2.53A-rev        | GCTAGCTATGAAATCTGTAGG                                                                                      | Site-mutation   |
| 3rre-N2.53A-for        | CCTACAGATTTTCATAGCTAGC                                                                                     | Site-mutation   |
| SRBC64-N2.60A-rev      | TTCCCCATGCTAAGATCTACT                                                                                      | Site-mutation   |
| SRBC64-N2.60A-for      | AGTAGATCTTAGCATGGGGAA                                                                                      | Site-mutation   |

|              |                                                       |               |
|--------------|-------------------------------------------------------|---------------|
| gprA_LB_for  | GCTCGAGTTTTTCAGCAAGAT<br>GCAGCTATAGTTGGTGGGAA         | gprA deletion |
| gprA_LB_rev  | ACCTCCACTAGCATTACACTT<br>GTAATGTTTTCCGCCATCTGG        | gprA deletion |
| gprA_hph_for | AGATGGCGGAAACATTAC<br>AAGTGTAATGCTAGTGGA              | gprA deletion |
| gprA_hph_rev | CCTCTTGGGTTTTTGGGTA<br>TGGGGGGAGTTTAGGGAAAG           | gprA deletion |
| gprA_RB_for  | CTTCCCTAAACTCCCCCA<br>TACCAAAAACCCAAGAGGC             | gprA deletion |
| gprA_RB_rev  | GTAGGAGATCTTCTAGAAAGAT<br>ACCGTAGAAGAAGGCCTTGA        | gprA deletion |
| gprA_orf_for | ATGGACCAGATCGACTCGTT                                  | Analytic PCR  |
| gprA_orf_rev | TTAGAGGCCGTGTCCCGC                                    | Analytic PCR  |
| gprA_ex_for  | CGCAAGTATGGATGCAACCT                                  | Analytic PCR  |
| gprA_ex_rev  | TCTCTCAGCATCTAGCAGAG                                  | Analytic PCR  |
| gprB_LB_for  | TTCCGGATGGCTCGAGTTTTTCAGCAAGATT<br>TGACTCCTCGACGCCACA | gprB deletion |
| gprB_LB_rev  | GATGTGTTGACCTCCACTAGCATTACACTTT<br>TCATTTGGGAGGGGGACA | gprB deletion |
| gprB_hph_for | TTCATTTGGGAGGGGGACA<br>AAGTGTAATGCTAGTGAGG            | gprB deletion |
| gprB_hph_rev | GAAATGCAATTCTAAGGAACGG<br>TGGGGGGAGTTTAGGGAAAG        | gprB deletion |
| gprB_RB_for  | TGCTCTTTCCTAAACTCCCCCA<br>CCGTTCCCTAGAATTGCATTTT      | gprB deletion |
| gprB_RB_rev  | ATTGTAGGAGATCTTCTAGAAAGAT<br>CGAATTAACGTGGGCATATTAT   | gprB deletion |
| gprB_orf_for | ATGGGCGACATGCCAGTTGA                                  | Analytic PCR  |
| gprB_orf_rev | CTATCTCCTCCTCGCACTC                                   | Analytic PCR  |
| gprB_ex_for  | CAATCCAAAAGCTTCAGTGGA                                 | Analytic PCR  |
| gprB_ex_rev  | CTCGGTGCATATGGATAGGT                                  | Analytic PCR  |
| gprD_LB_for  | GATGGCTCGAGTTTTTCAGCAAGATATAGCT<br>TTAGTACCCCACTTTG   | gprD deletion |
| gprD_LB_rev  | TGTTGACCTCCACTAGCATTACACTTCTCCG<br>GCTAAATGTCACCA     | gprD deletion |
| gprD_hph_for | GCTGGTGACATTTAGCCGGAG<br>AAGTGTAATGCTAGTGAGG          | gprD deletion |
| gprD_hph_rev | TAAAGATGTGGCAAAATTGGAGATA<br>TGGGGGGAGTTTAGGGAAA      | gprD deletion |
| gprD_RB_for  | TTTCCCTAAACTCCCCCA<br>TATCTCCAATTTGCCACATC            | gprD deletion |
| gprD_RB_rev  | AGGAGATCTTCTAGAAAGAT<br>CAGGCATGTATGTCTGTACG          | gprD deletion |
| gprD_orf_for | ATGACGCAACTCCCGTACTT                                  | Analytic PCR  |

|              |                                                     |               |
|--------------|-----------------------------------------------------|---------------|
| gprD_orf_rev | TCATCCAATGATCCGGCCGCC                               | Analytic PCR  |
| gprD_ex_for  | ACCCACTACCCCGAGGAAAT                                | Analytic PCR  |
| gprD_ex_rev  | CGCTCCGACAATATCTATGC                                | Analytic PCR  |
| gprE_LB_for  | GATGGCTCGAGTTTTTTCAGCAAGAT<br>CATGGTATTTCTCTTGACGTG | gprE deletion |
| gprE_LB_rev  | GTTGACCTCCACTAGCATTACACTT<br>GGTACGTTCTGCTGGTTTAC   | gprE deletion |
| gprE_hph_for | GTAAACCAGCAGAACGTACC<br>AAGTGTAATGCTAGTGGAGG        | gprE deletion |
| gprE_hph_rev | CGGGAAGTAGAACTGGGCAAAC<br>TGGGGGGAGTTTAGGGAAA       | gprE deletion |
| gprE_RB_for  | CTTTCCCTAAACTCCCCCA<br>GTTTGCCAGTTCTAGTTCC          | gprE deletion |
| gprE_RB_rev  | AGGAGATCTTCTAGAAAGAT<br>TCTGAACGTTTTGTCTCCC         | gprE deletion |
| gprE_orf_for | ATGCCTCGCCAGTTAACAC                                 | Analytic PCR  |
| gprE_orf_rev | CTATTGGCTTCCGATCTTGATT                              | Analytic PCR  |
| gprE_ex_for  | TGCAAGGGTGCTACAGGTA                                 | Analytic PCR  |
| gprE_ex_rev  | GCAGGGTCGAGATAGTGTC                                 | Analytic PCR  |
| gprF_LB_for  | GCTCGAGTTTTTCAGCAAGATATCGTGATCA<br>GTTACAAACCG      | gprF deletion |
| gprF_LB_rev  | CCTCCACTAGCATTACACTTAGTTAATGAGG<br>GAGTTAGGTG       | gprF deletion |
| gprF_hph_for | CGATCACCTAACTCCCTCATTAAGTGT<br>AATGCTAGTGGAGG       | gprF deletion |
| gprF_hph_rev | CGCAGCCTTTATCAGGTCGGAATATTGGGG<br>GGAGTTTAGGGAAA    | gprF deletion |
| gprF_RB_for  | CTTTCCCTAAACTCCCCCAATATTCCGACC<br>TGATAAAGGC        | gprF deletion |
| gprF_RB_rev  | ATTGTAGGAGATCTTCTAGAAAGATCAATTG<br>GCTAACTTATAGGTCT | gprF deletion |
| gprF_orf_for | ATGGATAACCCCGTTGCCG                                 | Analytic PCR  |
| gprF_orf_rev | TACCTCAATTTCACTACTTCTCC                             | Analytic PCR  |
| gprF_ex_for  | CATATTCTTGACGAGACGAG                                | Analytic PCR  |
| gprF_ex_rev  | TCTCCCGCATGAATAAGGAAG                               | Analytic PCR  |
| gprA_q_for   | ACTGGGATATTCGCGAGTCAA                               | qRT-PCR       |
| gprA_q_rev   | AAAGGATGCCTCGGAGAATAAC                              | qRT-PCR       |
| gprB_q_for   | CCGATCCTATCGTGCTCGAT                                | qRT-PCR       |
| gprB_q_rev   | TCCAGACAATCTCCTGATCCG                               | qRT-PCR       |
| gprC_q_for   | GCCATTGCAATCGTAACGGTC                               | qRT-PCR       |
| gprC_q_rev   | AGGCTCGGCTTTAATCCAGCA                               | qRT-PCR       |
| gprD_q_for   | CGTCATCGCCATCGCATTAAT                               | qRT-PCR       |
| gprD_q_rev   | GTCGACCCTTTCCGTCCAA                                 | qRT-PCR       |
| gprE_q_for   | GCCAGACCGAGCTTTCTTCA                                | qRT-PCR       |
| gprE_q_rev   | CTCGTTGCTTCAATCGTAACTG                              | qRT-PCR       |
| gprF_q_for   | CAGCTTATCCCTCAGATAGTG                               | qRT-PCR       |

|                      |                                                     |              |
|----------------------|-----------------------------------------------------|--------------|
| gprF_q_rev           | GCCCATGTAAGCAGACTCAAG                               | qRT-PCR      |
| H2b-FW               | GAAGAAGGCAGGAAAGAAGAC                               | qRT-PCR      |
| H2b-Rev              | TTTGGCAGACGAGGAAGAG                                 | qRT-PCR      |
| BD-GasA-for          | ATATGGCCATGGAGGCCGAATTCCCATGGG<br>TTGCAGCATGTCTAC   | Y2H          |
| BD-GasA-rev          | GGCCGCTGCAGGTCGACGGATCCCCTTATA<br>TCAGACCGCAGTTTCTG | Y2H          |
| AD-GasA-for          | CAACGCAGAGTGGCCATTATGGCCCATGGG<br>TTGCAGCATGTCTAC   | Y2H          |
| AD-GasA-rev          | CGAGGCGGCCGACATGTTTTTCCCTTATAT<br>CAGACCGCAGTTTCTG  | Y2H          |
| gprC_adhP_ol_for     | AGCTATACCAAGCATACAATCAACTATGGCC<br>TTCACGACACTTTC   | Y2H          |
| gprC_AD_ol_rev       | CTTTATCCATCTTTGCAAAGCTTGGCTCTCT<br>TCGCGGTCCCC      | Y2H          |
| gprC_BD_ol_r-n       | TTTCAGGAGGCTTGCTTCAAGCTTGGCTCTC<br>TTCGCGGTCCCC     | Y2H          |
| gprCtail_adhP_ol_for | AGCTATACCAAGCATACAATCAACTAACGAA<br>AGAGTCTGGAGACAA  | Y2H          |
| gprCtail_AD_ol_rev   | CTTTATCCATCTTTGCAAAGCTTGGCTCTCT<br>TCGCGGTCCC       | Y2H          |
| gprCtail_BD_ol_rev   | TTCAGGAGGCTTGCTTCAAGCTTGGCTCTCT<br>TCGCGGTCCC       | Y2H          |
| AD_C_for             | CCAAGCTTTGCAAAGATGGAT                               | Y2H Backbone |
| adhP_rev             | AGTTGATTGTATGCTTGGTATAG                             | Y2H Backbone |
| BD_C_for             | CCAAGCTTGAAGCAAGCCT                                 | Y2H Backbone |