**Table S1** Genes harbored in *P. atropurpura* chloroplast genome

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| --- | --- | --- |
| Category | Gene group | Gene name |
| Photosynthesis | Subunits of photosystem I | *psaA, psaB, psaC, psaI, psaJ* |
|  | Subunits of photosystem II | *psbA, psbB, psbC, psbD, psbE, psbF, psbH, psbI, psbJ, psbK, psbL, psbM, psbN, psbT* |
|  | Subunits of NADH dehydrogenase | *#ndhA, #ndhD, #ndhG, #ndhH, #ndhK, ndhB\*(2), ndhC, ndhE, ndhI, ndhJ* |
|  | Subunits of cytochrome b/f complex | *petA, petB\*, petD\*, petG, petL, petN* |
|  | Subunits of ATP synthase | *atpA, atpB, atpE, atpF\*, atpH, atpI* |
|  | Large subunit of rubisco | *rbcL* |
|  | Subunits photochlorophyllide reductase | - |
| Self-replication | Proteins of large ribosomal subunit | *rpl14, rpl16\*, rpl2\*, rpl20, rpl22, rpl32(2), rpl33, rpl36* |
|  | Proteins of small ribosomal subunit | *rps11, rps12\*\*, rps14, rps15, rps16\*, rps18, rps19, rps2, rps3, rps4, rps7(2), rps8* |
|  | Subunits of RNA polymerase | *rpoA, rpoB, rpoC1\*, rpoC2* |
|  | Ribosomal RNAs | *rrn16(2), rrn23(2), rrn4.5(2), rrn5(2)* |
|  | Transfer RNAs | *trnA-UGC\*(2),trnC-GCA(2), trnD-GUC, trnE-UUC, trnF-GAA, trnG-GCC\*, trnG-UCC, trnH-GUG(2), trnI-CAU(2), trnI-GAU\*(2), trnK-UUU\*, trnL-CAA(2), trnL-UAA\*, trnL-UAG(2), trnM-CAU, trnN-GUU(5), trnP-UGG, trnQ-UUG, trnR-ACG(2), trnR-UCU, trnS-GCU, trnS-GGA, trnS-UGA, trnT-GGU, trnT-UGU, trnV-GAC(2), trnV-UAC\*, trnW-CCA, trnY-GUA, trnfM-CAU* |
| Other genes | Maturase | *matK* |
|  | Protease | *clpP\** |
|  | Envelope membrane protein | *cemA* |
|  | Acetyl-CoA carboxylase | *accD* |
|  | c-type cytochrome synthesis gene | *ccsA* |
|  | Translation initiation factor | *infA* |
|  | other | - |
| Genes of unknown function | Conserved hypothetical chloroplast ORF | *psbZ, ycf1, ycf15(2), ycf3\*\*, ycf4* |

Notes: Gene\*: Gene with one intron; Gene\*\*: Gene with two introns; #Gene: Pseudo gene; Gene (2): Number of copies of two-copy genes.