

**Table S4.** Oligonucleotide repeats in chloroplast genome of *Cyperus niveus*

| ID | Repeat Start 1 | Type | Size | Repeat Start 2 | Mismatch | E Value                 | Gene  | Region   |
|----|----------------|------|------|----------------|----------|-------------------------|-------|----------|
| 1  | 114832         | P    | 706  | 117272         | 0        | 0                       | IGS   | IRB      |
| 2  | 114832         | F    | 706  | 166815         | 0        | 0                       | IGS   | IRB; IRA |
| 3  | 117272         | F    | 706  | 169255         | 0        | 0                       | IGS   | IRB; IRA |
| 4  | 166815         | P    | 706  | 169255         | 0        | 0                       | IGS   | IRA      |
| 5  | 115712         | F    | 182  | 144073         | 0        | $2.57 \times 10^{-100}$ | IGS   | IRB; SSC |
| 6  | 144073         | P    | 182  | 168899         | 0        | $2.57 \times 10^{-100}$ | IGS   | SSC; IRA |
| 7  | 30552          | F    | 162  | 127017         | 0        | $2.83 \times 10^{-88}$  | IGS   | LSC; IRB |
| 8  | 30552          | P    | 162  | 157614         | 0        | $2.83 \times 10^{-88}$  | IGS   | LSC; IRA |
| 9  | 30542          | P    | 150  | 131785         | 0        | $4.75 \times 10^{-81}$  | IGS   | LSC, IRB |
| 10 | 30542          | F    | 150  | 152858         | 0        | $4.75 \times 10^{-81}$  | IGS   | LSC; IRA |
| 11 | 28407          | P    | 140  | 129454         | 0        | $4.98 \times 10^{-75}$  | ropB  | LSC; IRB |
| 12 | 28407          | F    | 140  | 155199         | 0        | $4.98 \times 10^{-75}$  | ropB  | LSC; IRA |
| 13 | 127017         | P    | 140  | 131785         | 0        | $4.98 \times 10^{-75}$  | IGS   | IRB      |
| 14 | 127017         | F    | 140  | 152868         | 0        | $4.98 \times 10^{-75}$  | IGS   | IRB; IRA |
| 15 | 131785         | F    | 140  | 157636         | 0        | $4.98 \times 10^{-75}$  | IGS   | IRB; IRA |
| 16 | 152868         | P    | 140  | 157636         | 0        | $4.98 \times 10^{-75}$  | IGS   | IRA      |
| 17 | 28285          | F    | 132  | 129245         | 0        | $3.26 \times 10^{-70}$  | ropB  | LSC; IRB |
| 18 | 28285          | P    | 132  | 155416         | 0        | $3.26 \times 10^{-70}$  | ropB  | LSC; IRA |
| 19 | 114527         | F    | 130  | 143526         | 0        | $5.22 \times 10^{-69}$  | rpl32 | IRB; SSC |
| 20 | 115581         | F    | 130  | 143942         | 0        | $5.22 \times 10^{-69}$  | IGS   | IRB; SSC |
| 21 | 143526         | P    | 130  | 170136         | 0        | $5.22 \times 10^{-69}$  | IGS   | SSC; IRA |
| 22 | 143942         | P    | 130  | 169082         | 0        | $5.22 \times 10^{-69}$  | IGS   | SSC; IRA |
| 23 | 28162          | F    | 122  | 129122         | 0        | $3.42 \times 10^{-64}$  | ropB  | LSC; IRB |
| 24 | 28162          | P    | 122  | 155549         | 0        | $3.42 \times 10^{-64}$  | ropB  | LSC; IRA |
| 25 | 97668          | F    | 120  | 100814         | 0        | $5.47 \times 10^{-63}$  | IGS   | LSC; IRB |
| 26 | 97668          | P    | 120  | 183859         | 0        | $5.47 \times 10^{-63}$  | IGS   | LSC; IRA |
| 27 | 115774         | F    | 120  | 144255         | 0        | $5.47 \times 10^{-63}$  | IGS   | IRB; SSC |
| 28 | 144135         | F    | 120  | 144255         | 0        | $5.47 \times 10^{-63}$  | IGS   | SSC      |
| 29 | 144255         | P    | 120  | 168899         | 0        | $5.47 \times 10^{-63}$  | IGS   | SSC; IRA |
| 30 | 17273          | F    | 110  | 74385          | 0        | $5.74 \times 10^{-57}$  | IGS   | LSC      |
| 31 | 93888          | F    | 106  | 127963         | 0        | $1.47 \times 10^{-54}$  | IGS   | LSC; IRB |
| 32 | 93888          | P    | 106  | 156724         | 0        | $1.47 \times 10^{-54}$  | IGS   | LSC; IRA |
| 33 | 18153          | F    | 96   | 97071          | 0        | $1.54 \times 10^{-48}$  | IGS   | LSC      |
| 34 | 21409          | F    | 94   | 21601          | 0        | $2.47 \times 10^{-47}$  | rpoC2 | LSC      |
| 35 | 73157          | F    | 90   | 95094          | 0        | $6.31 \times 10^{-45}$  | rps12 | LSC      |
| 36 | 24             | P    | 89   | 102811         | 0        | $2.52 \times 10^{-44}$  | IGS   | LSC; IRB |
| 37 | 24             | F    | 89   | 181893         | 0        | $2.52 \times 10^{-44}$  | IGS   | LSC; IRA |
| 38 | 93900          | P    | 88   | 118007         | 0        | $1.01 \times 10^{-43}$  | IGS   | LSC; SSC |
| 39 | 93900          | F    | 88   | 166698         | 0        | $1.01 \times 10^{-43}$  | IGS   | LSC; IRA |
| 40 | 118007         | P    | 88   | 127975         | 0        | $1.01 \times 10^{-43}$  | IGS   | IRB      |
| 41 | 118007         | F    | 88   | 156730         | 0        | $1.01 \times 10^{-43}$  | IGS   | IRB; IRA |
| 42 | 127975         | F    | 88   | 166698         | 0        | $1.01 \times 10^{-43}$  | IGS   | IRB; IRA |
| 43 | 156730         | P    | 88   | 166698         | 0        | $1.01 \times 10^{-43}$  | IGS   | IRA      |
| 44 | 74945          | P    | 84   | 105510         | 0        | $2.59 \times 10^{-41}$  | IGS   | LSC; IRB |
| 45 | 74945          | F    | 84   | 179199         | 0        | $2.59 \times 10^{-41}$  | IGS   | LSC; IRA |
| 46 | 17246          | F    | 83   | 94891          | 0        | $1.03 \times 10^{-40}$  | IGS   | LSC      |
| 47 | 115895         | F    | 83   | 144376         | 0        | $1.03 \times 10^{-40}$  | IGS   | IRB; SSC |
| 48 | 144376         | P    | 83   | 168815         | 0        | $1.03 \times 10^{-40}$  | IGS   | SSC; IRA |
| 49 | 118341         | F    | 81   | 118515         | 0        | $1.65 \times 10^{-39}$  | IGS   | IRB      |