

Table S3 Comparison of nucleotide variability (Pi) among *A.tanguticus* and related species.

| Region | Pi | Total Number of mutations | Region length |
|---------------------|---------|---------------------------|---------------|
| IR.gene1.trnN-GUU | 0 | 0 | 72 |
| IR.gene10.rps7 | 0 | 0 | 468 |
| IR.gene11.ndhB | 0.00149 | 6 | 1533 |
| IR.gene12.trnL-CAA | 0.00412 | 1 | 81 |
| IR.gene13.ycf15 | 0.00156 | 1 | 264 |
| IR.gene14.ycf2 | 0.00295 | 56 | 6894 |
| IR.gene15.trnI-CAU | 0 | 0 | 74 |
| IR.gene16.rpl23 | 0.00236 | 2 | 282 |
| IR.gene17.rpl2 | 0.00438 | 10 | 828 |
| IR.gene2.trnR-ACG | 0 | 0 | 74 |
| IR.gene3.rrn5 | 0 | 0 | 121 |
| IR.gene4.rrn4.5 | 0 | 0 | 103 |
| IR.gene5.rrn23 | 0.00095 | 8 | 2810 |
| IR.gene6.trnA-UGC | 0 | 0 | 73 |
| IR.gene7.trnI-GAU | 0 | 0 | 77 |
| IR.gene8.rrn16 | 0.00068 | 3 | 1500 |
| IR.gene9.trnV-GAC | 0 | 0 | 72 |
| LSC.gene1.trnH-GUG | 0 | 0 | 78 |
| LSC.gene10.trnG-UCC | 0 | 0 | 74 |
| LSC.gene11.trnR-UCU | 0.00463 | 1 | 72 |
| LSC.gene12.atpA | 0.01155 | 47 | 1524 |
| LSC.gene13.atpF | 0.00829 | 12 | 570 |
| LSC.gene14.atpH | 0.00623 | 4 | 246 |
| LSC.gene15.atpI | 0.00654 | 12 | 744 |
| LSC.gene16.rps2 | 0.00591 | 12 | 711 |
| LSC.gene17.rpoC2 | 0.01094 | 121 | 4182 |
| LSC.gene18.rpoC1 | 0.00722 | 41 | 2067 |
| LSC.gene19.rpoB | 0.00421 | 37 | 3213 |
| LSC.gene2.psbA | 0.00477 | 14 | 1062 |
| LSC.gene20.trnC-GCA | 0 | 0 | 72 |
| LSC.gene21.petN | 0.00741 | 2 | 192 |
| LSC.gene22.psbM | 0 | 0 | 105 |
| LSC.gene23.trnD-GUC | 0.00721 | 1 | 74 |
| LSC.gene24.trnY-GUA | 0 | 0 | 84 |
| LSC.gene25.trnE-UUC | 0 | 0 | 73 |
| LSC.gene26.trnT-GGU | 0 | 0 | 72 |
| LSC.gene27.psbD | 0.00414 | 11 | 1062 |
| LSC.gene28.psbC | 0.00596 | 21 | 1422 |
| LSC.gene29.trnS-UGA | 0.00366 | 1 | 93 |
| LSC.gene3.trnK-UUU | 0 | 0 | 74 |
| LSC.gene30.psbZ | 0.00176 | 1 | 189 |
| LSC.gene31.trnG-GCC | 0 | 0 | 71 |

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|---------------------|---------|----|------|
| LSC.gene32.trnM-CAU | 0 | 0 | 74 |
| LSC.gene33.rps14 | 0.00726 | 6 | 330 |
| LSC.gene34.psaB | 0.00511 | 32 | 2205 |
| LSC.gene35.psaA | 0.00571 | 33 | 2253 |
| LSC.gene36.ycf3 | 0.00408 | 5 | 513 |
| LSC.gene37.trnS-GGA | 0.00383 | 1 | 87 |
| LSC.gene38.rps4 | 0.00836 | 12 | 606 |
| LSC.gene39.trnT-UGU | 0 | 0 | 73 |
| LSC.gene4.matK | 0.01782 | 71 | 1530 |
| LSC.gene40.trnL-UAA | 0.00794 | 2 | 87 |
| LSC.gene41.trnF-GAA | 0.00457 | 1 | 73 |
| LSC.gene42.ndhJ | 0.00531 | 7 | 477 |
| LSC.gene43.ndhK | 0.0112 | 20 | 855 |
| LSC.gene44.ndhC | 0.01286 | 12 | 363 |
| LSC.gene45.trnV-UAC | 0 | 0 | 75 |
| LSC.gene46.trnM-CAU | 0 | 0 | 73 |
| LSC.gene47.atpE | 0.00829 | 8 | 402 |
| LSC.gene48.atpB | 0.00762 | 29 | 1497 |
| LSC.gene49.rbcL | 0.00735 | 28 | 1455 |
| LSC.gene5.rps16 | 0.01731 | 12 | 267 |
| LSC.gene50.accD | 0.01449 | 60 | 1551 |
| LSC.gene51.psaI | 0.00901 | 3 | 111 |
| LSC.gene52.ycf4 | 0.00456 | 7 | 555 |
| LSC.gene53.cemA | 0.01478 | 27 | 690 |
| LSC.gene54.petA | 0.01011 | 25 | 963 |
| LSC.gene55.psbJ | 0.00271 | 1 | 123 |
| LSC.gene56.psbL | 0.0057 | 2 | 117 |
| LSC.gene57.psbF | 0.00407 | 1 | 182 |
| LSC.gene58.psbE | 0.00265 | 2 | 252 |
| LSC.gene59.petL | 0.00903 | 2 | 96 |
| LSC.gene6.trnQ-UUG | 0 | 0 | 72 |
| LSC.gene60.petG | 0.00292 | 1 | 114 |
| LSC.gene61.trnW-CCA | 0 | 0 | 74 |
| LSC.gene62.trnP-UGG | 0.01502 | 2 | 74 |
| LSC.gene63.psaJ | 0.00741 | 3 | 198 |
| LSC.gene64.rpl33 | 0.01095 | 6 | 201 |
| LSC.gene65.rps18 | 0.00719 | 6 | 312 |
| LSC.gene66.rpl20 | 0.00568 | 6 | 387 |
| LSC.gene67.rps12 | 0.031 | 22 | 429 |
| LSC.gene68.clpP | 0.02732 | 45 | 597 |
| LSC.gene69.psbB | 0.00742 | 31 | 1527 |
| LSC.gene7.psbK | 0.00896 | 5 | 186 |
| LSC.gene70.psbT | 0 | 0 | 139 |
| LSC.gene71.psbN | 0.00253 | 1 | 141 |

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|--------------------|---------|-----|------|
| LSC.gene72.psbH | 0.00841 | 5 | 240 |
| LSC.gene73.petB | 0.00638 | 11 | 648 |
| LSC.gene74.petD | 0.00835 | 10 | 483 |
| LSC.gene75.rpoA | 0.01492 | 41 | 1014 |
| LSC.gene76.rps11 | 0.00368 | 4 | 417 |
| LSC.gene77.rpl36 | 0.00292 | 1 | 123 |
| LSC.gene78.rps8 | 0.01481 | 15 | 405 |
| LSC.gene79.rpl14 | 0.01048 | 11 | 369 |
| LSC.gene8.psbI | 0.00601 | 2 | 162 |
| LSC.gene80.rpl16 | 0.00593 | 6 | 405 |
| LSC.gene81.rps3 | 0.01136 | 20 | 657 |
| LSC.gene82.rpl22 | 0.02507 | 32 | 468 |
| LSC.gene83.rps19 | 0.01147 | 9 | 279 |
| LSC.gene9.trnS-GCU | 0 | 0 | 88 |
| SSC.gene1.ndhF | 0.01511 | 88 | 2223 |
| SSC.gene10.ndhA | 0.01258 | 38 | 1092 |
| SSC.gene11.ndhH | 0.01359 | 39 | 1182 |
| SSC.gene12.rps15 | 0.01515 | 10 | 264 |
| SSC.gene13.ycf1 | 0.04246 | 435 | 5736 |
| SSC.gene2.rpl32 | 0.01341 | 6 | 169 |
| SSC.gene3.trnL-UAG | 0.00667 | 1 | 80 |
| SSC.gene4.ccsA | 0.01663 | 43 | 942 |
| SSC.gene5.ndhD | 0.01373 | 51 | 1521 |
| SSC.gene6.psaC | 0.00759 | 4 | 246 |
| SSC.gene7.ndhE | 0.01394 | 11 | 321 |
| SSC.gene8.ndhG | 0.01042 | 14 | 531 |
| SSC.gene9.ndhI | 0.0157 | 21 | 504 |
