

Table S1. GenBank accession numbers, haplotype and sample identifiers, and sample locations for sequence data.

| GenBank accession no. | Haplotype identifier | Sample identifier | Sample location |
|-----------------------|----------------------|-------------------|----------------------------|
| MF114479 | CR01 | ADPE AVI09-02 | Antarctica, Avian Island |
| MF114480 | CR02 | ADPE AVI09-03 | Antarctica, Avian Island |
| MF114481 | CR03 | ADPE AVI09-05 | Antarctica, Avian Island |
| MF114482 | CR04 | ADPE AVI09-06 | Antarctica, Avian Island |
| MF114483 | CR05 | ADPE AVI09-07 | Antarctica, Avian Island |
| MF114484 | CR06 | ADPE AVI09-10 | Antarctica, Avian Island |
| MF114485 | CR07 | ADPE AVI09-12 | Antarctica, Avian Island |
| MF114486 | CR08 | ADPE AVI09-13 | Antarctica, Avian Island |
| MF114487 | CR09 | ADPE AVI09-14 | Antarctica, Avian Island |
| MF114488 | CR10 | ADPE AVI09-15 | Antarctica, Avian Island |
| MF114489 | CR11 | ADPE AVI09-22 | Antarctica, Avian Island |
| MF114525 | CR11 | ADPE PP11-C04 | Antarctica, Prospect Point |
| MF114490 | CR12 | ADPE AVI10-08 | Antarctica, Avian Island |
| MF114491 | CR13 | ADPE AVI10-09 | Antarctica, Avian Island |
| MF114492 | CR14 | ADPE AVI10-18 | Antarctica, Avian Island |
| MF114493 | CR15 | ADPE AVI10-19 | Antarctica, Avian Island |
| MF114494 | CR16 | ADPE AVI10-21 | Antarctica, Avian Island |
| MF114523 | CR17 | ADPE PP11-C02 | Antarctica, Prospect Point |
| MF114526 | CR18 | ADPE PP11-C05 | Antarctica, Prospect Point |
| MF114532 | CR19 | ADPE PP11-C13 | Antarctica, Prospect Point |
| MF114528 | CR20 | ADPE PP11-C07 | Antarctica, Prospect Point |
| MF114529 | CR21 | ADPE PP11-C08 | Antarctica, Prospect Point |
| MF114530 | CR22 | ADPE PP11-C09 | Antarctica, Prospect Point |
| MF114505 | CR23 | ADPE PAL08-N21A1 | Antarctica, Anvers Island |
| MF114495 | CR24 | ADPE CHA10-C01 | Antarctica, Charcot Island |
| MF114496 | CR25 | ADPE CHA10-C04 | Antarctica, Charcot Island |
| MF114497 | CR26 | ADPE CHA10-C06 | Antarctica, Charcot Island |
| MF114498 | CR27 | ADPE CHA10-C13 | Antarctica, Charcot Island |
| MF114499 | CR28 | ADPE CHA10-C15 | Antarctica, Charcot Island |
| MF114500 | CR29 | ADPE CHA11-C01 | Antarctica, Charcot Island |
| MF114501 | CR30 | ADPE CHA11-C02 | Antarctica, Charcot Island |
| MF114502 | CR31 | ADPE CHA11-C06 | Antarctica, Charcot Island |
| MF114503 | CR32 | ADPE CHA11-C09 | Antarctica, Charcot Island |
| MF114504 | CR33 | ADPE CHA11-C10 | Antarctica, Charcot Island |
| MF114522 | CR34 | ADPE PP11-C01 | Antarctica, Prospect Point |
| MF114524 | CR35 | ADPE PP11-C03 | Antarctica, Prospect Point |
| MF114527 | CR36 | ADPE PP11-C06 | Antarctica, Prospect Point |
| MF114531 | CR37 | ADPE PP11-C11 | Antarctica, Prospect Point |
| MF114506 | CR38 | ADPE PAL08-N22A1 | Antarctica, Anvers Island |
| MF114507 | CR39 | ADPE PAL08-N23A1 | Antarctica, Anvers Island |
| MF114513 | CR39 | ADPE PAL08-N30A1 | Antarctica, Anvers Island |

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|----------|------|------------------|---------------------------|
| MF114508 | CR40 | ADPE PAL08-N24A1 | Antarctica, Anvers Island |
| MF114509 | CR41 | ADPE PAL08-N25A1 | Antarctica, Anvers Island |
| MF114510 | CR42 | ADPE PAL08-N27A1 | Antarctica, Anvers Island |
| MF114511 | CR43 | ADPE PAL08-N28A1 | Antarctica, Anvers Island |
| MF114512 | CR44 | ADPE PAL08-N29A1 | Antarctica, Anvers Island |
| MF114514 | CR45 | ADPE PAL08-N32A1 | Antarctica, Anvers Island |
| MF114515 | CR46 | ADPE PAL08-N34A1 | Antarctica, Anvers Island |
| MF114516 | CR47 | ADPE PAL08-N35A1 | Antarctica, Anvers Island |
| MF114517 | CR48 | ADPE PAL09-N64A1 | Antarctica, Anvers Island |
| MF114518 | CR49 | ADPE PAL09-N72A1 | Antarctica, Anvers Island |
| MF114519 | CR50 | ADPE PAL09-N78A1 | Antarctica, Anvers Island |
| MF114520 | CR51 | ADPE PAL09-N83A1 | Antarctica, Anvers Island |
| MF114521 | CR52 | ADPE PAL09-N84A1 | Antarctica, Anvers Island |

Abbreviations: ADPE = Adélie penguin, AVI = Avian Island, CHA = Charcot Island, PAL = Anvers Island, PP = Prospect Point.