**Table S1.** Information of the collection point and haplotype distribution

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| pop | hap | Longitude (°E) | Latitude (°N) | Sample size | location |
| GZTR | H3(1) H42(2) H43(1) H44(10) H45(3) H46(1) H47(5) H48(6) H49(1) H50(2) H51(1) H52(1) H53(1) H54(1) H55(1) H56(1) H57(1)  | 108.700569 | 27.919654 | 39 | Tongren, Guizhou, China |
| GZXN | H58(1) H59(1) H60(2) H61(1) H62(1) H63(1) | 106.47109 | 25.121126 | 7 | Qianxinan, Guizhou, China |
| GZZY | H64(1) H65(1) H66(1) H67(1) H68(1) H69(1) | 106.032018 | 28.448623 | 6 | Zunyi, Guizhou, China |
| GXGL | H24(2) H25(1) H26(1) H27(1) H28(1) H29(1) H30(1) H31(1) H32(1) H33(1) H34(1) H35(1) H36(1) H37(1) | 109.9324 | 25.512972 | 15 | Guilin, Guangxi, China |
| GXCZ | H16(1) H17(1) H18(1) H19(1) H20(1) H21(1) | 107.04283 | 22.437053 | 6 | Chongzuo, Guangxi, China |
| GXFCG | H17(3) H22(2) H23(1) | 107.966703 | 21.819697 | 6 | Fangchenggang, Guangxi, China |
| GXLB | H24(1) H38(1) H39(1) H40(2) H41(1) | 110.253295 | 24.173686 | 6 | Laibin, Guangxi, China |
| GDQY | H1(1) H2(3) H3(4) H4(3) H5(2) H6(2) H7(1) H8(1) | 113.789158 | 23.632621 | 17 | Qingyuan, Guangdong, China |
| GDZQ | H1(1) H3(5) H9(2) H10(1) H11(1) H12(5) H13(1) H14(1) H15(1) | 112.29757 | 22.99914 | 18 | Zhaoqing, Guangxi, China |
| HNCZ | H1(1) H12(4) H79(1) H80(1) | 113.00248 | 25.8029 | 7 | Chenzhou, Hunan, China |
| HNCD | H48(1) H70(2) H71(1) H72(1) H73(2) H74(1) H75(1) H76(3) H77(1) H78(1) | 110.676654 | 30.009462 | 14 | Changde,Hunan,China |
| HNZJJ | H26(1) H42(1) H48(1) H76(1) H103(1) H105(1) H112(1) H113(1) H114(1) H115(1) H116(1) H117(1) H118(1) H119(1) H120(1) | 111.873894 | 28.776656 | 15 | Zhangjiajie, Hunan, China |
| HNHH | H42(3) H50(2) H76(1) H81(1) H82(1) H83(1) H84(1) H85(1) H86(3) H87(1) H88(1) H89(1) H90(1) H91(1) H92(1) H93(2) H94(2) H95(1) H96(1) H97(1) H98(1) H99(1) H100(1) H101(1) H102(1) H103(2) H104(1) H105(1) H106(1) H107(1) H108(1) H109(1) H110(1) H111(2)  | 110.442957 | 28.7653 | 44 | Huaihua,Hunan, China |
| SCCD | H42(1) H49(2) H121(2) H122(3) H123(1) H124(1) H125(1) H126(2) | 103.591335 | 30.903396 | 13 | Chengdu, Sichuan, China |
| YNHH | H17(4) H22(1) H127(4) H128(1) H129(2) H130(1) H131(2) H132(1) H133(2) H134(1) | 103.954668 | 22.631708 | 19 | Honghe, Yunnan, China |