**Table S1** Details of taxon’s sample locations and sample size (n) of two regions

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Locality | Latitude (N)/  Longitude (E) | Altitude (m) | Taxa | Vouchers | Sampling | Labels |
| 1. Mt. Maoniu,   Ninglang  (Yunnan) | 100.55˚N  27.81 ˚E | 4040 | *Ligularia duciformis* | X. Gong 22355 (KUN) | 15 | MD1, MD2, MD3, MD4, MD5, MD6, MD7, MD8, MD9, MD10, MD11, MD12, MD13, MD14, MD15 |
|  |  |  | *L. paradoxa* | X. Gong 22356 (KUN) | 20 | MP1, MP2, MP3, MP4, MP5, MP6, MP7, MP8, MP9, MP10, MP11, MP12, MP13, MP14, MP15, MP16, MP17, MP18, MS, MX |
|  |  |  | *L*. × *maoniushanensis* | X. Gong 22357 (KUN), PG130804 (suspected backcrossing individuals) | 9 | MM1, MM2, MM3, MM4, MM5, MM6, MM7, MM8, MM9 |
|  |  | ML1, ML2, ML3, ML4, ML5, ML6, ML7 |
| *L*. *lamarum* | PG140601 (KUN) | 7 |
| 1. Heihai Hu,   Ninglang  (Yunnan) | 100.53˚N  27.81 ˚E | 4140 | *L. duciformis* | PG130801 (KUN) | 20 | HD1, HD2, HD3, HD4, HD5, HD6, HD7, HD8, HD9, HD10, HD11, HD12, HD13, HD14, HD15, HD16, HD17, HD18, HD19, HD20 |
| *L. paradoxa* | PG130803 (KUN) | 20 | HP1, HP2, HP3, HP4, HP5, HP6, HP7, HP8, HP9, HP10, HP11, HP12, HP13, HP14, HP15, HP16, HP17, HP18, HP19, HP20 |
| *L*. × *maoniushanensis* | PG130807 (KUN) | 10 | HM1, HM2, HM3, HM4, HM5, HM6, HM7, HM8, HM9, HM10 |
| *L*. *lamarum* | -- | 6 | HL4, HL5, HL6, HL7, HL8, HL10 |

“—” indicates loss, voucher of *L*. *lamarum* was not collected as it had the number of less. And these individuals had no flowers or fruits then at the time.

KUN: Herbarium, Kunming Institute of Botany, Chinese Academy of Sciences.