**Table S1** Geographic information of *P. juncea* populations.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NPGS ID** | **Sample size** | **Origin** | **Longitude** | **Latitude** | **Elevation (m)** | **Logogram** |
| PI 595138 | 7 | Xinjiang, XJ | 86°21′0″E | 43°49′0″N | 1510 | PJ03 |
| PI 595142 | 8 | Xinjiang, XJ | 85°52′0″E | 44°0′0″N | 1120 | PJ04 |
| PI 595155 | 7 | Xinjiang, XJ | 81°10′0″E | 44°48′0″N | 1700 | PJ05 |
| PI 595177 | 6 | Xinjiang, XJ | 57°51′0″E | 43°48′0″N | 1600 | PJ08 |
| PI 598607 | 8 | Kazakhstan, KZ | 58°15′0″E | 47°31′0″N | 200 | PJ19 |
| PI 598609 | 10 | Kazakhstan, KZ | 57°30′0″E | 46°27′0″N | 150 | PJ20 |
| PI 598612 | 4 | Kazakhstan, KZ | 60°22′0″E | 47°49′59″N | 230 | PJ22 |
| PI 598613 | 4 | Kazakhstan, KZ | 58°51′0″E | 50°9′0″N | 310 | PJ23 |
| W6 19786 | 9 | Mongolia, MGL | 91°31′57″E | 50°10′32″N | 1601 | PJ26 |
| PI 619483 | 8 | Mongolia, MGL | 90°7′58″E | 49°29′13″N | 2002 | PJ27 |
| PI 619487 | 10 | Mongolia, MGL | 92°4′35″E | 49°51′50″N | 1078 | PJ28 |