**Supplementary Materials**

Gudkova P. D., Baiakhmetov E., Nobis M. Evidence of distant hybridization within Central Asian feather grasses (Poaceae: *Stipa*).

**Table S1:** List of samples used in the study. Samples used in the molecular analysis are in bold type. Vouchers presented by IDs of herbarium sheets and (numbers without acronyms represent a personal collection of P. D. Gudkova).

| Taxon               | Voucher     | Locality                                                                 | Coordinates          | Altitude | Data       | Collector                |
|---------------------|-------------|---------------------------------------------------------------------------|----------------------|----------|------------|--------------------------|
| *Stipa drobovii*    | 003189      | Kazakhstan, Kordai district, 2 km south of the Kenen village               | N43°24'0.85" E75°47.28" | 870 m    | 18.05.2014 | P. D. Gudkova, M. Nobis  |
| *Stipa drobovii*    | TK-002721a  | Kazakhstan, Zhambyl region, Moyinkum district, env. Khantau village, Khantau mountains, southern rocky slope | N44°16'04.7" E73°50'06.5" | 726 m    | 14.05.2014 | A. Ebel                 |
| *Stipa drobovii*    | TK-002721   | Kazakhstan, South Kazakhstan region, Suzak district, upstream Turlan river, rocky slope | N43°37'21.2" E68°55'55.6" | 970 m    | 18.05.2014 | P. D. Gudkova, M. Nobis, E. Baiakhmetov, A. Wróbel |
| *Stipa drobovii*    | TK-000148   | Kazakhstan, Eskeldinsky district, Taldykorgan environs (to the north)    | N45°03'53.5" E78°20'09.5" | 698 m    | 25.05.2019 | P. D. Gudkova, M. Nobis, E. Baiakhmetov, A. Wróbel |
| *Stipa drobovii*    | TK-001519   | Kazakhstan, Kordai district, the vicinity of Kenen                        | N43°24'26.6" E75°04'55.6" | 842 m    | 29.05.2019 | P. D. Gudkova, M. Nobis, E. Baiakhmetov, A. Wróbel |
| *Stipa drobovii*    | 000004      | Kazakhstan, Eskeldinsky district, 10 km east of Taldykorgan               | N45°02'28.7" E78°13'28.6" | 526 m    | 25.05.2019 | P. D. Gudkova, M. Nobis, E. Baiakhmetov, A. Wróbel |
| *Stipa drobovii*    | TK-000233   | Karaganda region, Shetsky district, between the village Moyinty and Sary-Shagan. Desert. Point 16 | N46°30'00.7" E73°35'04.9" | 390 m    | 04.07.2014 | A. Ebel                 |
| *Stipa drobovii*    | 003165      | Enbekshikazakh district, north-east of Kokpek                             | N43°27'09.9" E78°39'38.6" | 1094 m   | 28.05.2019 | P. D. Gudkova, M. Nobis, E. Baiakhmetov, A. Wróbel |
| *Stipa drobovii*    | TK-001699   | Kazakhstan, Karlygash, Arkharly pass, destroyed rocks                      | N44°12'55" E77°42'14" | 910 m    | 25.05.2001 | –                       |
| *Stipa × smelanskyi* | TK-001696   | Kazakhstan, Zhanakarka region, 25 km southwest of Dzhambul, Wormwood-saline northern desert, rubble shell on clay soil | N47°03'58.1" E70°55'22.7" | 607 m    | 20.06.2019 | I. E. Smelansky         |
| *Stipa × smelanskyi* | TK-001697   | Kazakhstan, Karaganda region, Aktogay district, Bektuata area, rocky steppe | N47°21'03.9" E74°33'21.9" (approx.) | 590 m    | 14.05.2014 | A. Ebel                 |
| Taxon             | Voucher | Locality                                                                 | Coordinates                       | Altitude | Data        | Collector          |
|------------------|---------|--------------------------------------------------------------------------|-----------------------------------|----------|-------------|-------------------|
| *Stipa richteriana* | TK-002711 | Kazakhstan, Karaganda region, Ulytau district, env. Tyueouyak, desert steppe | N47°51'19.8" E 69°02'43.1"        | 320 m    | 24.05.2014  | A. Ebel           |
|                  | 0452466 KRA | Kazakhstan, steppe grassland on hills, 2.5 km NNE of Karlygash settlers (100 km NE of Almaty) | N44°13'41.9" E77°42'30.6"        | 990 m    | 22.05.2014  | M. Nobis, P. D. Gudkova |
|                  | 0468818 KRA | Kazakhstan, steppe grassland on hills slopes, 3 km S of Kenen settlers (150 km W of Almaty) | N43°23'48" E75°04'02"           | 885 m    | 18.05.2014  | M. Nobis, P. D. Gudkova |
|                  | 001881   | Kazakhstan, Zaysan depression, Northern Prizaysanie, Kara mountains, southeastern slope, hollow | N48°06'59.6" E 84°53'15.5" (approx.) | 480 m    | 11.05.2001  | Yu. A. Kotukhov   |
|                  | 001883   | Kazakhstan, Zhylyshchi region, Baylychovo-gray wormwood desert. Point 16 | N43°25'49.4" E7°05'42.3"        | 440 m    | 12.05.2001  | Yu. A. Kotukhov   |
|                  | 001691   | Kazakhstan, Northern Zaysan depression, Karabiryuk mountains, southeastern rubble slope | N48°01'00.0" E 84°35'00.0" (approx.) | 440 m    | 12.05.2001  | Yu. A. Kotukhov   |
|                  | 000265   | Kazakhstan, Sarkand district, 20 km north-west of Lepsy towards Lake Balkhash | N46°25'49.4" E7°05'42.3"        | 379 m    | 23.05.2019  | P. D. Gudkova, M. Nobis, E. Baiakhtmetov, A. Wróbel |
|                  | 001897   | Kazakhstan, Northern Priaysanye, Karabiryuk mountains, southeastern rubble slope | N48°01'00.0" E 84°35'00.0" (approx.) | 440 m    | 12.05.2001  | Yu. A. Kotukhov   |

Table S2: Contribution (%) by dimension of each character (abbreviations according to Table 1) in FAMD. The first five characters contributing the most are in bold type. Abbreviations of the qualitative variables and their contributions to the principal axes are underlined.
Figure S1: Notched boxplot demonstrating the mean (black bold circle), the median (dark black line), 95% confidence interval around the median (notch), inter-quartile ranges (25% to 75%), whiskers (5% and 95%) minimum and maximum measurements (crosses) and possible outlier (black circle) of quantitative characters (a–f) for the studied species.
Figure S2: Notched boxplot demonstrating the mean (black bold circle), the median (dark black line), 95 % confidence interval around the median (notch), inter-quartile ranges (25 % to 75 %), whiskers (5 % and 95 %) minimum and maximum measurements (crosses) and possible outlier (black circle) of quantitative characters (g–l) for the studied species.
**Figure S3:** Notched boxplot demonstrating the mean (black bold circle), the median (dark black line), 95% confidence interval around the median (notch), inter-quartile ranges (25% to 75%), whiskers (5% and 95%) minimum and maximum measurements (crosses) and possible outlier (black circle) of quantitative characters (m–r) for the studied species.
Figure S4: Bar charts displaying frequencies of the qualitative characters: a – AG; b – CharHAnt; c – AbSVL; d – AdSVL; e – AbSGL; f – AdSGL.