**Appendix S1. Voucher data and Genbank accession numbers for species investigated in this study**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Gen Bank accession numbers *rpl32-trnl*** | **Gen Bank accession numbers ITS** | **Vocher** | **Collector** | **Locality** | | **Taxon** |
| **Outgroups** | | | | | | |
| - | HQ652976 | 1779237 (UC) | - | USA, Massachusetts | | *Chelone glabra* L. |
| KT031978 | - | 38893 (M) | E.A. Bourdo | USA, Michigan | | *Che. glabra* |
|  | AY492121 | s.n. | - | USA, Connecticut | | *Tetranema roseum* (M. Martens & Galeotti) Standl. & Steyerm |
| KT031981 | - | 10933 (MSB) | H. Foerther | Guatemala, Alta Verapaz | | *T. roseum* |
| **Ingroups** | | | | | | |
| KT031918 | KT031850 | 18807 (MSB) | D. Podlech | | Afghanistan | *Linaria unaiensis* Patzak |
| KT031919 | KT031851 | 5845 (M) | V. Gladkova & T. Leonova | | Russia, Belgorod | *L. cretacea* Fisch. ex Spreng. |
| KT031920 | KT031852 | 17414 (M) | A. Dubuis | | Algeria, Wilaya Tizi Ouzou | *L. decipiens* Batt. |
| - | JX481105 | sn. (RNG) | A. Molina & J. Varela | | Spain | *L. caesia* (Pers.) F.G. Dietr.a |
| JN663426 | - | 2009.12.111 (RNG) | - | | - | *L. caesia* a |
| - | KF623186 | 2009.12.111 (RNG) | - | | - | *L. caesia* b |
| JN663425 | - | 2009.12.102 (RNG) | - | | - | *L. caesia* b |
| JN663483 | AY731248 | 617622 (MA) | - | | - | *L. triornithophora* (L.) Cav. a |
| JF694128 | JX481083 | 18MF07 (MA) | M. Fernandez-Mazuecos | | Spain, Cáceres, Puerto de Perales | *L. triornithophora* b |
| KT031922 | KT031854 | FC2202 (M) | J. Fdez Casas et al. | | Portugal, Algarve | *L. algarviana* Chav. |
| JF694130 | JX481086 | 11MF09 (MA) | M. Fernandez-Mazuecos | | Portugal, Cabo de Sao Vicente | *L. algarviana* a |
| KT031923 | KT031855 | 19266 | J. Vaezi | | Iran, Tehran | *L. chalepensis* (L.) Mill. |
| - | JQ814497 | 495681 (MA) | - | | - | *L. chalepensis* a |
| JF694127 | - | IV294 (MA) | - | | Cyprus, Larnaca, Cape Kiti | *L. chalepensis* a |
| KT031925 | KT031857 | 19526 (MSB) | R.M. Baldini & L. Vivona | | Italy, Livorno | *L. capraria* Moris&DeNot. |
| - | KT031859 | 05/212 (M) | F. Schuhwerk | | Germany, Bayern | *L.* *genistifolia* (L.) Mill. subsp. *dalmatica* ( L.) Maire & Petitm. |
| JQ814607 | - | 726987 (MA) | - | | - | *L. genistifolia* subsp. *dalmatica* |
| KT031945 | KT031860 | 87 (MSB) | S. Zarre | | Turkey, Kahramanmaras | *L. genistifolia* subsp. *confertiflora* (Boiss.) P.H. Davis |
| - | KJ747028 | 20889 (TARI) | Wendelbo & A.A. Maassoumi | | Iran, Mazandaran | *L. genistifolia* a |
| JF694124 | - | A9751 (MA) | J.J. Aldasoro & M.L. Alarcón | | Turkey, Hadim-Bezkir | *L. genistifolia* a |
| KT031928 | KT031861 | - | - | | - | *L. hellenica* Turrill |
| JF694140 | JX481102 | s.n. (ATH) | - | | Greece, Kambos | *L. hellenica* a |
| JN663442 | JX481111 | 32JB09 (MA) | J.L. Blanco-Pastor | | Spain, Malaga | *L. huteri* Langea |
| KT031930 | KT031863 | 26661 (M) | H. Merxmueller & W. Gleisner | | Spain, Avila | *L. incarnata* (Vent.) Spreng. |
| - | KC878742 | 9MF09 (MA) | - | | - | *L. incarnata* a |
| JF694146 | - | 39MF09 (MA) | M. Fernández-Mazuecos & P. Vargas | | Spain, Salamanca | *L. incarnata* a |
| - | KC878743 | s.n. | J.L. Perez Chiscano | | - | *L. incarnata* b |
| JF694144 | - | 95/MA/333 (RNG) | J. Lambinon & G. van den Sande | | Morocco, Salé | *L. incarnata* b |
| JQ814614 | JQ814512 | 764400 (MA) | - | | - | *L. meyeri* Kuprian. a |
| KT031942 | KT031869 | 54134 (MSB) | D. Podlech | | Spain, Cadiz | *L.* *pedunculata* (L.) Chaz. 2 |
| KT031931 | KT031871 | 39468 (MSB) | S. Zarre et al. | | Iran, Markazi | *L. fastigiata* Chav. |
| KT031932 | KT031872 | 48200 (MSB) | J. Renz | | Iran, Lurestan | *L. elymaitica* (Boiss.) Kuprian*.* |
| KT031933 | KT031873 | 17432 | A. Ghahreman | | Iran, Azarbaijan | *L. grandiflora* Desf. |
| KT031934 | KT031874 | s.n. (TUH) |  | |  | *L. kavirensis* Hamdi & Assadi |
| KT031935 | KT031875 | 54589 (TUH) | V. Mozaffarian | | Iran, Bakhtiari | *L. nurensis* Boiss. & Hausskn. ex Boiss. |
| KT031937 | KT031878 | 28709 (M) | D. Podlech | | Afghanistan | *L. bipartita* (Vent.) Willd. 1 |
| KT031938 | KT031879 | 49573 (MSB) | D. Podlech | | Marokko, De Safi | *L. bipartita* 2 |
| - | JX481094 | 18558 (RNG) | S.L. Jury & R.G. Wilson | | Morocco, Rabat | *L. bipartita* a |
| JF694132 | - | 14293 (RNG) | S.L. Jury et al. | | Morocco, Tamri | *L. bipartita* a |
| KT031939 | KT031880 | 36574 (MSB) | M. Nydegger | | Spain, Malaga | *L.* *clementei* Haens. ex Boiss. |
| - | JX481089 | 7MF08 (MA) | M. Fernandez-Mazuecos et al. | | Spain, Malaga | *L. clementei* a |
| JF694136 | - | 24MF09 (MA) | M. Fernández-Mazuecos & J. Ramírez | | Spain, Malaga | *L. clementei* a |
| - | KC994570 | 24MF09 (MA) | - | | - | *L. clementei* b |
| JF694135 | - | 7MF08 (MA) | M. Fernández-Mazuecos et al. | | Spain, Malaga | *L. clementei* b |
| KT031944 | KT031882 | 19268 | J. Vaezi | | Iran, Tehran | *L. lineolata* Boiss. |
| - | KC520972 | 29MF09 (MA) | - | | - | *L. nigricans* Lange a |
| JF694186 | - | 3PV08 (MA) | P. Vargas | | Spain, Almeria | *L. nigricans* a |
| - | JX481104 | 3PV08 (MA) | P. Vargas | | Spain, Almeria | *L. nigricans* b |
| JF694185 | - | 29MF09 (MA) | M. Fernández-Mazuecos | | Spain, Almeria | *L. nigricans* b |
| - | KC625803 | 37JB09 (MA) | - | | - | *L. amoi* Campo ex Amoa |
| JF694122 | - | 30PV08 (MA) | M. Fernández-Mazuecos et al. | | Spain, Malaga | *L. amoi* a |
| JN663407 | KC625802 | 37JB09 (MA) | - | | - | *L. amoi* b |
| JN663495 | KF623188 | s.n. (RNG) | - | | 2009.12.20 | *L. verticillata* Boiss. subsp*. cuartanensis* (Degan & Hervier) L. Saez & M.B. Crespoa |
| JF694179 | KC878755 | 1MF09 (MA) | M. Fernández-Mazuecos & J.L. Blanco | | Spain, Huelva | *L. viscosa* Dum.Cours.subsp. *viscosa* a |
| JF694181 | KC878756 | 49MF09(MA) | M. Fernández-Mazuecos | | Spain, Jaen | *L. viscosa* subsp. *spicata* (Coutinho) D.A. Sutton b |
| - | KC878751 | s.n. | E. Sanchez-Gullon | | - | *L. onubensis* Paua |
| JF694147 | - | 5PV08 (MA) | V. Valcarcel & P. Vargas | | Spain, Huelva | *L. onubensis* a |
| - | KC878749 | 5PV08 (MA) | - | | - | *L. onubensis* b |
| KC878768 | - | 28MF10 (MA) |  | |  | *L. onubensis* b |
| JF694141 | KC878736 | s.n. (MA) | F. Gomiz | | Morocco, Jbel Imzi | *L. imzica* Gomiza |
| - | AF513874 | - |  | |  | *L.vulgaris* Mill. a |
| JF694126 | - | (MA) | B. Estebanez | | France, Chamonix | *L.vulgaris* a |
| - | AY492109 | - | - | | - | *L. vulgaris* b |
| JQ814621 | - | s.n. | - | | - | *L. vulgaris* b |
| - | JQ814529 | 4MF08 (MA) | - | | - | *L. spartea* (L.) Chaz. a |
| JF694172 | - | 14MF07 (MA) | M. Fernández-Mazuecos et al. | | Spain, Soria, Tardelcuende | *L. spartea* a |
| JF694171 | JX481090 | 101PV07 (MA) | P. Vargas | | Spain, Madrid | *L. spartea* b |
| JF694125 | AY731246 | 595943 (MA) |  | |  | *L. repens* (L.) Mill. a |
| KF623210 | JX481144 | 54MF09 (MA) | M. Fernández-Mazuecos | | Spain, Cuencia | *L. repens* b |
| - | AY731243 | 145147 (VAL) | - | | - | *L. alpina* (L.) Mill. a |
| JF694121 | - | s.n. (MA) | J. Guemes | | Spain, Huesca | *L. alpina* a |
| JN663403 | JQ814489 | 571SMB05 (UPOS) | S. Martın Bravo | | Spain, Huesca | *L. alpina* b |
| - | AY731242 | 562630 (MA) | - | | - | *L. micrantha* (Cav.) Hoffmanns a |
| JF694123 | - | 1530-JXS (MA) | J.X. Soler & M. Signes | | Spain, Alicante | *L. micrantha* a |
| - | JQ814513 | 22JB09 (MA) | J.L. Blanco-Pastor | | Spain, Huelva | *L. micrantha* b |
| JN663446 | - | 129272 (SEV) | - | | - | *L. micrantha* b |
| JN663490 | KC625801 | 105PJM04 (MA) | - | | - | *L. tristis* Mill. subsp. *tristis* a |
| - | KF623206 | 330561 (MA) | - | | - | *L. tristis* (L.) Mill.subsp. *pectinata* Pau & Font Ouer b |
| JN663489 | - | 746944 (MA) | - | | - | *L. tristis* subsp. *pectinata* b |
| JN663486 | KF623205 | 11MF08 (MA) | - | | - | *L. tristis* Mill.subsp. *mesatlantica* D.A. Sutton c |
| JN663424 | JQ814538 | 609430 (MA) | M. Carrasco | | Spain, Huesca | *L. bubanii* Font Quera |
| - | KC520977 | 55MF09(1) (MA) | - | | - | *L. elegans* Munby a |
| JF694184 | - | 45MF08 (MA) | M. Fernández-Mazuecos | | Spain, Orense | *L. elegans* a |
| - | KC520976 | 27MF08(1) (MA) | - | | - | *L. elegans* b |
| JF694183 | - | s.n. (MA) | E. Amat | | Spain, Avila | *L. elegans* b |
| JQ814622 | JQ814536 | 589733 (MA) | - | | - | *L. warionis* Pomel a |
| JQ814620 | JQ814534 | 807960 (MA) | - | | - | *L. ventricosa* Cosson & Bal. a |
| JN663492 | JQ814533 | 18JB09 (MA) | J.L. Blanco-Pastor | | Spain, Huelva | *L. tursica* Valdes & Cabezudo a |
| JQ814619 | JQ814532 | 797461 (MA) | - | | - | *L. triphylla* (L.) Mill.a |
| JQ814618 | JQ814531 | 00292244 (E) | - | | - | *L. thibetica* Francher a |
| - | JQ814528 | 79PV08 (MA) | P. Vargas | | Greece, Ararchova | *L. simplex* (Wild.) DC.a |
| JN663477 | - | 5JB10 (MA) | *-* | | *-* | *L. simplex* a |
| JN663476 | JQ814527 | 2009.12.162 (RNG) | - | | - | *L. simplex* b |
| JN663464 | JQ814526 | 94PV09 (MA) | - | | - | *L. saxatilis* (L.) Chaz. a |
| JN663463 | JX481115 | 20PV09 (MA) | P. Vargas | | Spain, Madrid | *L. saxatilis* b |
| JN663462 | JQ814525 | 36JB09 (MA) | J.L. Blanco-Pastor | | Spain, Malaga | *L. saturejoides* Boiss.a |
| JN663461 | KF623202 | 31JB09 (MA) | - | | - | *L. saturejoides* subsp. *saturejoides* b |
| - | JQ814524 | 468162 (MA) | J.A. Alejandre | | Spain, Bilbao | *L. propinqua* Boiss. & Reuter a |
| JN663460 | - | 2009.12.140 (RNG) | - | | - | *L. propinqua* a |
| - | KF623201 | 753221 (MA) | - | | - | *L. propinqua* b |
| JN663459 | - | 468162 (MA) | - | | - | *L. propinqua* b |
| JN663457 | JQ814523 | 2009.12.108 (RNG) | - | | - | *L. polygalifolia* Hoffmanns. & Linksubsp. *polygalifolia* a |
| JN663456 | JQ814522 | 33JB10 (MA) | J.L. Blanco-Pastor | | Portugal, Monte Gordo | *L. polygalifolia* subsp. *lamarckii* (Rouy) D.A. Suttonb |
| JN663455 | KF623200 | 122145 (SEV) | - | | - | *L. polygalifolia* subsp. *aguillonensis* (Gracia Mart.) Castrov. & Lagoc |
| JN663454 | JQ814520 | 5SMB08 (UPOS) | S. Martın Bravo | | Spain, Cadiz | *L. platycalyx* Boiss. a |
| KT031926 | KT031858 | 27435 (M) | A.S. Zubizarrreta | | Spain, Almeria | *L. platycalyx* b |
| JQ814616 | JQ814519 | 778352 (MA) | - | | - | *L. peloponnesiaca* Boiss. & Heldr. a |
| JQ814616 | JX481148 | 778352 (MA) | P. Vargas | | Greece, Mount Olympus | *L. peloponnesiaca* b |
| JN663453 | JQ814518 | 4JB10 (MA) | J.L. Blanco-Pastor | | Spain, Alicante | *L. orbensis* Carretero & Boiraa |
| JN663452 | KF623199 | 3JB10 (MA) | - | | - | *L. orbensis* b |
| JQ814615 | JQ814517 | 00419545 (E) | - | | - | *L. odora* (Bieb.) Fischer a |
| JN663449 | JQ814516 | 34JB09 (MA) | J.L. Blanco-Pastor | | Spain, Malaga | *L. oblongifolia* (Boiss.) Boiss. & Reuter subsp. *oblongifolia* a |
| - | KF623197 | s.n. | E. Snchez-Gulln | | - | *L. oblongifolia* subsp. *haenseleri* (Boiss. & Reuter) Valdes b |
| JN663448 | - | s.n. (MA) | - | | - | *L. oblongifolia* subsp. *haenseleri* b |
| JN663447 | JQ814515 | 21JB09 (MA) | J.L. Blanco-Pastor | | Spain, Huelva | *L. munbyana* Boiss. & Reutera |
| JF694150 | JX481098 | IA1622 (MA) | I. Alvarez et al. | | Italy, Sicily | *L. multicaulis* (L.) Mill. subsp. *multicaulis* a |
| JF694153 | KC994575 | 904 (RNG) | A. Kool et al. | | Morocco, Yagour | *L. multicaulis* subsp. *galioides* (Ball) D.A. Suttonc |
| JF694151 | KC994573 | 57154 (RNG) | Davis & Lamond | | Tunisia, El Kesra | *L. multicaulis* subsp. *aurasiaca* (Pomel) D.A. Sutton d |
| JQ814613 | JQ814511 | 791644 (MA) | - | | - | *L. loeselii* Schweiggera |
| JQ814612 | JQ814509 | 795183 (MA) | - | | - | *L. laxiflora* Desf*.* a |
| JQ814611 | JQ814508 | 2010/12/11 (RNG) | - | | - | *L. joppensis* Bornm.a |
| JQ814610 | JQ814507 | 532177 (MA) | - | | - | *L. haelava* (Forskal) F.G. Dietr. a |
| JN663441 | JQ814506 | 2009.12.151 (RNG) | - | | - | *L. glauca* (L.) Cav. subsp. *olcadium* Valdes & D.A. Webba |
| - | KF623192 | 2009.12.148 (RNG) | - | | - | *L. glauca* subsp. *glauca* b |
| JN663439 |  | 790863 (MA) | - | | - | *L. glauca* subsp. *glauca* b |
| - | JQ814505 | 70JB09 (MA) | - | | - | *L. glacialis* Boiss. a |
| KC625703 |  | 167JB10\_10 (MA) | - | | - | *L. glacialis* a |
| - | JQ814504 | 43JB09 (MA) | J.L. Blanco-Pastor | | Spain, Granada | *L. glacialis* b |
| KC625702 | - | 81JB09\_3 (MA) | - | | - | *L. glacialis* b |
| JF694139 | JQ814503 | 7MF09 (MA) | M. Fernández-Mazuecos et al. | | Spain, Huelva | *L. gharbensis* Batt. & Pitarda |
| - | JX481100 | 7MF09 (MA) | M. Fernandez-Mazuecos et al. | | Spain, Huelva | *L. gharbensis* b |
| JF694138 | - | 18559 (RNG) | S.L. Jury & R.G. Wilson | | Morocco, Rabat | *L. gharbensis* b |
| JQ814608 | JQ814501 | 00419551 (E) | - | | - | *L. flava* (Poiret) Desf. a |
| - | JQ814500 | 769084 (MA) | - | | - | *L. filicaulis* Boiss. ex Leresche & Leviera |
| JN663436 | - | 619920 (MA) | - | | - | *L. filicaulis* a |
| JN663435 | JX481118 | 789283 (MA) | C.M. Romero Rodrıguez | | Spain, Leon | *L. filicaulis* b |
| - | JQ814499 | 2009.12.157 (RNG) | - | | - | *L. depauperata* Lange ex Lange a |
| JN663429 | - | 6JB10 (MA) | - | | - | *L. depauperata* a |
| - | JX481107 | s.n. (RNG) | P.F. Cannon et al. | | Spain, Albacete | *L. depauperata* b |
| JN663428 | - | 2009.12.85 (RNG) | - | | - | *L. depauperata* b |
| JN663423 | JQ814496 | 2009.12.7 (RNG) | A. Segura | | Spain, Soria | *L. bipunctata* (L.) Chaz. subsp. *bipunctata* a |
| JN663422 | KF623185 | sn. (RNG) | - | | - | *L. bipunctata* subsp. *bipunctata* b |
| JN663421 | JQ814495 | 2009.12.155 (RNG) | M.F. Gardner & S.G. Gardner | | Spain, Leon | *L. badalii* Willk.a |
| JN663420 | KF623184 | 81PV10 (MA) | - | | - | *L. badalii* b |
| - | JQ814494 | 2009.12.165 (RNG) | S.L. Jury & R.N. Carter | | Spain, Almerıa | *L. arvensis* (L.) Desf. a |
| JN663418 | - | 733323 (MA) | - | | - | *L. arvensis* a |
| - | JQ814493 | 2009.12.169 (RNG) | - | | - | *L. arvensis* b |
| JN663417 | - | 799225 (MA) | - | | - | *L. arvensis* b |
| JN663408 | JQ814491 | 33JB09 (MA) | J.L. Blanco-Pastor | | Spain, Malaga | *L. anticaria* a |
| JN663405 | JQ814490 | 712742 (MA) | R. Garcia Rio | | Spain, Ciudad Real | *L. amethystea* (Vent.) Hoffmanns. & Linksubsp. *amethystea* a |
| JN663406 | KF623180 | 10bisMF08 (MA) | - | | - | *L. amethystea* subsp*. broussonetii* (Poir.) Malato-Belizb |
| JQ814606 | JQ814488 | 2010/12/07 (RNG) | - | | - | *L. albifrons* (Sibth. & Sm.) Stedel a |
| - | JQ814487 | 44JB09 (MA) | - | | - | *L. aeruginea* (Gouan) Cav. subsp. *nevadensis* (Boiss.) Malag.a |
| JN663400 | - | 2009.12.54 (RNG) | - | | - | *L. aeruginea* subsp. *nevadensis* a |
| - | JQ814486 | 51JB09 (MA) | J.L. Blanco-Pastor | | Spain, Granada | *L. aeruginea* subsp. *aeruginea* b |
| JN663396 | - | 2009.12.94 (RNG) | - | | - | *L. aeruginea* subsp. *aeruginea* b |
| - | JX481156 | 16JB12 (MA); | J.L. Blanco-Pastor | | Spain, Jaen | *L. lilacina* Lange a |
| JN663444 | - | 2009.12.35 (RNG) | - | | - | *L. lilacina* a |
| JN663443 | KF623194 | 2009.12.38 (RNG) | - | | - | *L. lilacina* b |
| - | JX481155 | 611701 (MA) | C. Aedo | | Spain, Toledo | *L. nivea* Boiss. & Reutera |
| KF623211 | - | - | - | | - | *L. nivea* a |
| - | JX481147 | 74MF09 (MA) | M. Fernéndez-Mazuecos | | Italy, United Kingdom, Norwich (cultivated) | *L. purpurea* (L.) Mill.a |
| KF918736 | - | IPBBR 43 | - | | - | *L. purpurea* a |
| JF694129 | JX481126 | A9799 (MA) | J.J. Aldasoro | | Algeria, Algiers | *L. reflexa* (L.) Chaz. a |
| JN663450 | JX481121 | 753096 (MA) | L. Serra | | Spain, Alicante | *L. oligantha* Lange a |
| JN663451 | KF623198 | 11483 (SEV) | - | | - | *L. oligantha* subsp. *oligantha* b |
| - | JX481113 | s.n. (MA) | A. Teixeira | | Portugal, Freixo-de-Espada | *L. coutinhoi* Valdesa |
| JN663427 | - | s.n. (MA) | - | | - | *L. coutinhoi* a |
| - | JX481112 | s.n. (RNG) | F. De Raeve | | France, Vende´e | *L. arenaria* DC. a |
| JN663414 | - | 2009.12.174 (RNG) | - | | - | *L. arenaria* a |
| JN663482 | JX481106 | 303566 (MA) | B. de Retz | | France, Gironde | *L. thymifolia* (Vahl) DC.a |
| JF694169 | JX481099 | 231 (RNG) | P. Wilkin & E.J. Wellens | | Tunisia, El Haouaria | *L. pseudoviscosa* Murb*.* a |
| JF694149 | JX481097 | 14209 (RNG) | S.L. Jury et al. | | Morocco, Marrakech – Tizi-n-Test | *L. maroccana* Hook. f. a |
| JF694174 | JX481096 | 50581 (RNG) | Davis & Boulos | | Libya, Tripoli | *L. tenuis* (Viv.) Spreng. a |
| JF694182 | JX481093 | s.n. (RNG) | Mill. et al. | | Morocco, Tirhmi | *L. weilleri* Emb. & Maire a |
| JF694175 | JX481092 | 383 (RNG) | D.A. and S.J. Sutton | | Algeria, El Macta | *L. tingitana* Boiss. & Reuter a |
| JF694170 | JX481087 | 19MF09 (MA) | M. Fernández-Mazuecos & J. Ramírez | | Spain, Malaga | *L. salzmannii* Boiss. a |
| KC994581 | KC994571 | AQ2025 | - | | - | *L. gattefossei* Maire & Weillera |
| - | KF623203 | 13 (RNG) | - | | - | *L. supina* (L.) Chaz.a |
| JN663481 | - | 2009.12.131 (RNG) | - | | - | *L. supina* b |