

Appendix 1. Information of vouchers used for the anatomical observation and the molecular phylogenetic study. All specimens are deposited in Herbarium of Ajou University (AJOU).

Cyperus amuricus, KOREA, Chungcheongbuk-do: Yeongdong-gun, Mt. Cheonmanson, 13 Sep 2010, *J. Jung* 1009030; *C. cyperoides*, KOREA, Jeollanam-do: Jindo-gun, 23 Oct 2010, *J. Jung* 1010273; *C. difformis*, KOREA, Chungcheongnam-do: Taean-gun, Uihang-beach, 11 Aug 2008, *J. Jung* 808012; *C. exaltatus* var. *iwasakii*, KOREA, Incheon: Ganghwa-gun, Ganghwado Isl., 11 Aug 1992, *H.-K. Choi s.n.*; *C. flaccidus*, KOREA, Gangwon-do: Yanggu-gun, Soyan Lake, 24 Aug 2010, *J. Jung* 1008002; *C. flavidus*, KOREA, Jeollanam-do: Jindo-gun, Geumgye-ri, 23 Oct 2010, *J. Jung* 1010285; *C. glomeratus*, KOREA, Jeollabuk-do: Buan-gun, Chungho reservoir, 23 Sep 2009, *J. Jung* 909173; *C. haspan*, KOREA, Gyeongsangnam-do: Geoje-si, Beopdong-ri, 19 Oct 2010, *J. Jung* 1010177; *C. iria*, KOREA, Jeollabuk-do: Gochang-gun, Yongdae reservoir, 23 Sep 2009, *J. Jung* 909166; *C. microiria*, KOREA, Gangwon-do: Yanggu-gun, Soyang lake, 24 Aug 2010, *J. Jung* 1008005; *C. nipponicus*, KOREA, Chungcheongnam-do: Seocheon-gun, Wolho-ri, 14 Sep 2010, *J. Jung* 1009073; *C. orthostachyus*, KOREA, Chungcheongbuk-do: Yeongdong-gun, Mt. Cheonmanson, 13 Sep 2010, *J. Jung* 1009032; *C. pacificus*, KOREA, Gyeonggi-do: Icheon-si Yongpung reservoir, 4 Jul 2008, *J. Jung* 807040; *C. polystachyos*, KOREA, Gyeonggi-do: Whaseong-si, Ujeong-eup, 16 Sep 2010, *J. Jung* 1009077; *C. rotundus*, KOREA, Jeju-do: Jeju-si, Gujwa-eup, Haengwon-ri, 2 Nov 2010, *J. Jung* 1007126; *C. sanguinolentus*, KOREA, Chungcheongbuk-do: Yeongdong-gun, Mt. Cheonmanson, 13 Sep 2010, *J. Jung* 1009043; *C. serotinus*, KOREA, Gyeongsangnam-do: Geoje-si, Haksan-ri, 19 Oct 2010, *J. Jung* 1010170; *C. tenuispica*, CHINA, Chaling: Hunan, 17 Jul 2008, *J. Jung* 807091; *Kyllinga brevifolia* var. *leiolepis*, KOREA, Chungcheongbuk-do: Yeongdong-gun, Mt. Cheonmanson, 13 Sep 2010, *J. Jung* 1009007; *Lipocarpha microcephala*, KOREA, Gyeongsangbuk-do: Ulju-gun, Wangpi river, 6 Oct 2010, *J. Jung* 1010132.

Appendix 2. GenBank accession numbers of DNA sequences (nrITS/rbcL/trnL-F) used in the molecular phylogenetic analyses.

Alimula lipocarpoides (-/AM999784/-), *A. paradoxa* (-/AJ278290/AJ295756), *Androtrichum trigynum* (-/EF178547/-), *Ascolepis brasiliensis* (-/AM999785/-), *A. capensis* (-/Y13003/AY040594), *A. protea* (-/Y13002/-), *Courtoisina assimilis* (-/AY040590/AY040595), *Cyperus alternifolius* subsp. *flabeliformis* (JX644851/JX644653/JX644796), *C. amuricus* (JX644852/JX644654/JX644799), *C. compressus* (-/AF449506/AF449555), *C. congestus* (-/AM234972/AF449556), *C. cuspidatus* (-/AF449508/AF449557), *C. cyperoides* (JX644853/JX644655/JX644800), *C. dichrostachyus* (-/Y12965/-), *C. difformis* (JX644854/JX644656/-), *C. exaltatus* (-/JX644657/-), *C. flaccidus* (JX644855/JX644658/-), *C. flavescens* (-/Y13005/AJ295763), *C. flavidus* (JX644856/JX644659/JX644798), *C. glomeratus* (-/JX644660/-), *C. haspan* (JX644857/JX644661/-), *C. involucratus* (AY242052/Y12967/AJ295758), *C. iria* (AB261666/AM999807/-), *C. kerstenii* (-/Y13018/AY040597), *C. laevigatus* (-/Y13017/-), *C. longus* (-/AM999810/AY040598), *C. michelianus* subsp. *pygmaeus* (-/AJ404698/AJ295760), *C. microiria* (JX644858/JX644662/JX644801), *C. mundtii* (-/AF449517/AF449566), *C. nipponicus* (JX644859/JX644663/JX644804), *C. nuerensis* (-/Y13004/AY040603), *C. orthostachyus* (JX644860/JX644664/JX644802), *C. pacificus* (JX644861/JX644665/JX644805), *C. papyrus* (AY242048/AM999811/AJ295759), *C. polystachyos* (JX644862/JX644666/JX644806), *C. pygmaeus* (-/AJ404698/AJ295760), *C. pseudovestitus* (-/AF449513/AF449562), *C. pulchellus* (-/AM999812/-), *C. rigidifolius* (-/Y13016/AY040600), *C. rotundus* (-/JX644667/JX644807), *C. sanguinolentus* (JX644896/JX644701/AF449567), *C. serotinus* (JX644863/JX644668/JX644803), *C. tenuispica* (JX644864/JX644669/JX644793), *C. ustulatus* (DQ385558/AM999816/-), *Desmoschoenus spiralis* (DQ385562/AJ404701/AJ295753), *F. esterhuyzeniae* (GU012400/EF178549/EF178590), *F. indica* (GU012402/AM999831/EF178597), *Hellmuthia membranacea* (GU012384/AM999838/AJ295815), *Isolepis Aucklandica* (DQ385573/AJ404704/AJ295773), *I. cernua* (DQ385576/AM999840/AF285070), *I. costata* (GU012414/Y12981/AJ295776), *I. crassiuscula* (AB261668/AB236355/AB236356), *I. digitata* (GU012415/AJ404708/AJ295779), *I. habra* (GU012386/AJ404710/AJ295783), *I. hystrix* (GU012388/AJ404711/AJ295785), *I. inundata* (DQ385581/AJ404712/AJ295786), *I. levynsiana* (-/AF449514/AF449563), *I. marginata* (GU012418/AJ404714/AJ295790), *I. prolifera* (DQ385584/AM999841/AJ295796), *I. rubicunda* (GU012420/AJ404719/AJ295797), *I. sepulcralis* (GU012391/AJ404720/AJ295798), *I. setacea* (JX644893/JX644698/JX644794), *I. sulcata* (GU012393/AJ404722/AJ295802), *I. venustula* (GU012421/AJ404724/AJ295804), *Kyllinga appendiculata* (-/Y13007/AJ295761), *K. brevifolia* var. *leiolepis* (JX644894/JX644699/JX644808), *K. bulbosa* (-/Y12979/AY040601), *Kyllingiella microcephala* (-/AY040592/AJ295807), *K. polyphylla* (-/Y13013/-), *Lipocarpha microcephala* (JX644895/JX644700/JX644797), *L. nana* (-/AM999847/AJ295762), *Oxycaryum cubense* (-/AM999850/-), *Queenslandiella hyalina* (-/AM999854/-), *Remireia maritima* (-/AM999855/AY040604), *Scirpoides holoschoenus* (-/AM999871/AY344176), *S. thunbergii* (-/AJ404727/AJ295812), *Sphaerocyperus erinaceus* (-/AM999876/AJ295764), *Volkiella disticha* (-/EF178561/-).