**Appendix S2** References for sub-trees used to refine phylogeny.

Apiaceae: (Downie *et al*, 2000)

Asteraceae: (Goertzen *et al*, 2003)

Aveneae (Poaceae): (Grebenstein *et al*, 1998)

Boraginaceae:(Langstrom and Chase, 2002)

Brassicaceae:(Bailey *et al*, 2006)

Caryophyllaceae:(Fior *et al*, 2006)

Cyperaceae:(Simpson, 2007)

Fabaceae:(Wojciechowski *et al*, 2004)

Juncaceae:(Drabkova *et al*, 2004)

Lamiales:(Schaeferhoff *et al*, 2010)

Liliales:(Fay *et al*, 2006)

Plantaginaceae:(Albach *et al*, 2005)

Poaceae:(Liang, 1997)

Polygonaceae:(Sanchez and Kron, 2008)

Pooideae(Poaceae):(Catalan *et al*, 1997)

Portulacaceae:(Applequist and Wallace, 2001)

Primulaceae:(Martins *et al*, 2003)

Ranunculales:(Wang *et al*, 2009)

Rosaceae:(Potter *et al*, 2007)

Rubiaceae:(Bremer and Eriksson, 2009)

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