

Additional File 1: Table S1.

Listing of all species and associated accessions used in the phylogenetic analysis and evolution of the alternative initiation codon. Subfamily and tribe affiliation in the Orchidaceae as well as type of initiation codon required for translation of full-length *matK* ORF are provided.

Species	Subfamily	Tribe	Accession Number	Initiation Codon Type ¹
ORCHIDACEAE				
<i>Apostasia nipponica</i>	Apostasioideae		AY557215.1	cic
<i>Apostasia nuda</i>	Apostasioideae		AY557214.1	aic
<i>Apostasia odorata</i> ²	Apostasioideae		AY557213.1	cic
<i>Apostasia wallichii</i>	Apostasioideae		AY557212.1	cic
<i>Apostasia sp.</i> G244 ²	Apostasioideae		JN181464.1	cic
<i>Neuwiedia borneensis</i>	Apostasioideae		AY557209.1	cic
<i>Neuwiedia veratrifolia</i>	Apostasioideae		AY557211.1	cic
<i>Neuwiedia zollingeri</i>	Apostasioideae		AY557210.1	cic
<i>Cypripedium calceolus</i>	Cypripedioideae	Cypripedieae	AY557208.1	aic
<i>Paphiopedilum glaucophyllum</i>	Cypripedioideae	Cypripedieae	AY557205.1	aic
<i>Phragmipedium kovachii</i>	Cypripedioideae	Phragmipedieae	AY918826.1	aic
<i>Selenipedium aequinoctiale</i>	Cypripedioideae	Selenipedieae	EF079360.1	aic
<i>Bletilla striata</i>	Epidendroideae	Arethuseae	EF079331.1	aic
<i>Coelogyne barbata</i>	Epidendroideae	Arethuseae	AF302720.1	aic
<i>Entomophobia kinabaluensis</i>	Epidendroideae	Arethuseae	AF302697.1	aic
<i>Pleione delavayi</i>	Epidendroideae	Arethuseae	AF503731.1	aic
<i>Govenia sp.</i>	Epidendroideae	Calypsoeae	EF525690.1	aic
<i>Chytroglossa aurata</i>	Epidendroideae	Cymbidieae	FJ564753.1	aic
<i>Cryptocentrum calcaratum</i>	Epidendroideae	Cymbidieae	DQ210970.1	cic
<i>Cuitlauzina candida</i>	Epidendroideae	Cymbidieae	EF079217.1	aic
<i>Cymbidium atropurpureum</i>	Epidendroideae	Cymbidieae	AF470465.1	aic
<i>Gomesa concolor</i>	Epidendroideae	Cymbidieae	FJ564816.1	aic
<i>Grandiphyllum auriculum</i>	Epidendroideae	Cymbidieae	FJ564947.1	aic

<i>Heterotaxis violaceopunctata</i>	Epidendroideae	Cymbidieae	DQ210678.1	cic
<i>Hofmeisterella eumicroscopia</i>	Epidendroideae	Cymbidieae	FJ565091.1	aic
<i>Leochilus inconspicuus</i>	Epidendroideae	Cymbidieae	FJ564943.1	cic
<i>Maxillaria camaridii</i> (= <i>Brassia garayana</i>)	Epidendroideae	Cymbidieae	DQ210724.1	cic
<i>Miltonioides sp.</i>	Epidendroideae	Cymbidieae	EF079210.1	aic
<i>Oliveriana brevilabia</i>	Epidendroideae	Cymbidieae	FJ564814.1	aic
<i>Paphinia seegeri</i>	Epidendroideae	Cymbidieae	EF079236.1	aic
<i>Pescatoria lehmannii</i>	Epidendroideae	Cymbidieae	EF079240.1	aic
<i>Raycadenco ecuadorensis</i> (= <i>Fernandezia ecuadorensis</i>)	Epidendroideae	Cymbidieae	FJ565127.1	aic
<i>Rodriguezia pulchra</i>	Epidendroideae	Cymbidieae	FJ564960.1	aic
<i>Dendrobium findleyanum</i>	Epidendroideae	Dendrobieae	EF079348.1	aic
<i>Arpophyllum giganteum</i>	Epidendroideae	Epindendreae	AF265485.1	aic
<i>Bletia catenulata</i>	Epidendroideae	Epindendreae	AY121718.1	cic
<i>Cattleya acklandiae</i>	Epidendroideae	Epindendreae	AF263810.1	aic
<i>Dilomilis montana</i>	Epidendroideae	Epindendreae	AF263765.1	aic
<i>Dimerandra emarginata</i>	Epidendroideae	Epindendreae	AF263784.1	aic
<i>Lanium avicula</i> (= <i>Epidendrum avicula</i>)	Epidendroideae	Epindendreae	AF263778.1	aic
<i>Leptotes bicolor</i>	Epidendroideae	Epindendreae	AF263789.1	aic
<i>Masdevallia pinocchio</i>	Epidendroideae	Epindendreae	AF265445.1	aic
<i>Octomeria gracilis</i>	Epidendroideae	Epindendreae	AF265484.1	aic
<i>Pleurothallis amparoana</i>	Epidendroideae	Epindendreae	AF265467.1	aic
<i>Pseudolaelia vellozicola</i>	Epidendroideae	Epindendreae	AF263776.1	aic
<i>Restrepia aristulifera</i>	Epidendroideae	Epindendreae	AF265481.1	aic
<i>Restrepiopsis striata</i> (= <i>Vanda striata</i>)	Epidendroideae	Epindendreae	AF265480.1	aic
<i>Sophronitis cernus</i>	Epidendroideae	Epindendreae	EF079310.1	aic
<i>Stelis argentata</i>	Epidendroideae	Epindendreae	AF265464.1	aic

<i>Trisetella scobina</i>	Epidendroideae	Epidendreae	AF265449.1	aic
<i>Cephalanthera longibracteata</i>	Epidendroideae	Neottieae	HM640666.1	cic
<i>Neottia nidus-avis</i>	Epidendroideae	Neottieae	EF079303.1	cic
<i>Palmorchis trilobulata</i>	Epidendroideae	Neottieae	AJ310052.1	cic
<i>Eria javanica</i>	Epidendroideae	Podochileae	EF079354.1	aic
<i>Thelasis carinata</i>	Epidendroideae	Podochileae	AY121736.1	aic
<i>Ceratocentron fessellii</i>	Epidendroideae	Vandaeae	AB217715.1	aic
<i>Micropera pallida</i>	Epidendroideae	Vandaeae	AB217738.1	aic
<i>Acampe ochracea</i>	Epidendroideae	Vandaeae	AB217701.1	aic
<i>Aerides krabiensis</i>	Epidendroideae	Vandaeae	EF655784.2	aic
<i>Cleisomeria pilosulum</i>	Epidendroideae	Vandaeae	AB217718.1	aic
<i>Hygrochilus parishii</i>	Epidendroideae	Vandaeae	AB217733.1	aic
<i>Lesliea mirabilis</i> (= <i>Phalaenopsis mirabilis</i>)	Epidendroideae	Vandaeae	AB217735.1	aic
<i>Phalaenopsis amabilis</i>	Epidendroideae	Vandaeae	AB217747.1	aic
<i>Pomatocalpa diffusum</i>	Epidendroideae	Vandaeae	AB217752.1	aic
<i>Sarcoglyphis comberi</i>	Epidendroideae	Vandaeae	AB217759.1	aic
<i>Trudelia pumila</i> (= <i>Vanda pumila</i>)	Epidendroideae	Vandaeae	AB217770.1	aic
<i>Aa hartwegii</i>	Orchidoideae	Cranichideae	AM900803.1	aic
<i>Chloraea gaudichaudii</i>	Orchidoideae	Chloraeae	AJ310004.1	aic
<i>Codonorchis lessonii</i>	Orchidoideae	Codonorchideae	AJ310008.1	aic
<i>Codonorchis PJK-2001</i>	Orchidoideae	Codonorchideae	AJ310007.2	aic
<i>Anoectochilus koshunensis</i>	Orchidoideae	Cranichideae	EU797512.1	aic
<i>Aulosepalum hemichreum</i>	Orchidoideae	Cranichideae	AM884247.1	aic
<i>Deiregyne riodelayensis</i>	Orchidoideae	Cranichideae	AM884237.1	aic
<i>Eurystyles borealis</i>	Orchidoideae	Cranichideae	AJ543925.1	aic
<i>Galeottiella sarcoglossa</i>	Orchidoideae	Cranichideae	AJ543945.1	aic
<i>Goodyera viridiflora</i>	Orchidoideae	Cranichideae	AJ310035.1	aic

<i>Manniella gustavi</i>	Orchidoideae	Cranichideae	AJ543944.1	aic
<i>Pachyplectron arifolium</i>	Orchidoideae	Cranichideae	AJ310051.1	aic
<i>Pterostylis longifolia</i> (= <i>Bunochilus longifolia</i>)	Orchidoideae	Cranichideae	AJ310062.1	aic
<i>Sarcoglottis acaulis</i>	Orchidoideae	Cranichideae	AJ310068.1	aic
<i>Spiranthes praeclara</i>	Orchidoideae	Cranichideae	AJ310073.1	aic
<i>Corycium excisum</i>	Orchidoideae	Diseae	EU301534.1	aic
<i>Disa glandulosa</i>	Orchidoideae	Diseae	AJ310021.1	aic
<i>Disperis lindleyana</i>	Orchidoideae	Diseae	AY370652.1	aic
<i>Pterygodium cleistogamum</i>	Orchidoideae	Diseae	EU687539.1	aic
<i>Acianthus confusus</i>	Orchidoideae	Diurideae	AJ309999.1	aic
<i>Adenochilus nortonii</i>	Orchidoideae	Diurideae	AJ309995.1	aic
<i>Caladenia barbarossa</i>	Orchidoideae	Diurideae	AJ310026.1	aic
<i>Caleana mJOR</i>	Orchidoideae	Diurideae	AJ310001.1	aic
<i>Chiloglottis trapeziformis</i>	Orchidoideae	Diurideae	AJ310003.1	aic
<i>Corybas neocaledonicus</i>	Orchidoideae	Diurideae	AJ310011.1	aic
<i>Cyanicula gemmata</i>	Orchidoideae	Diurideae	AJ310017.1	aic
<i>Diuris sulphurea</i>	Orchidoideae	Diurideae	AJ310024.1	aic
<i>Eriochilus cucullatus</i>	Orchidoideae	Diurideae	AJ310028.1	aic
<i>Genoplesium fimbriatum</i>	Orchidoideae	Diurideae	AJ310031.1	aic
<i>Leptoceras menziesii</i>	Orchidoideae	Diurideae	AJ310039.1	aic
<i>Lyperanthus serratus</i>	Orchidoideae	Diurideae	AJ310040.1	aic
<i>Megastylis gigas</i>	Orchidoideae	Diurideae	AJ310042.1	cic
<i>Microtis parviflora</i>	Orchidoideae	Diurideae	AJ310045.1	aic
<i>Praecoxanthus aphyllus</i>	Orchidoideae	Diurideae	AJ310057.1	aic
<i>Rimacola elliptica</i>	Orchidoideae	Diurideae	AJ310066.1	aic
<i>Thelymitra carnea</i>	Orchidoideae	Diurideae	AJ310076.1	aic
<i>Cleistis rosea</i>	Vanilloideae	Pogonieae	AJ310006.1	aic
<i>Pogonia ophioglossoidesgi</i>	Vanilloideae	Pogonieae	AJ310055.1	aic

<i>Epistephium sp.</i>	Vanilloideae	Vanilleae	EF06502.1	aic
<i>Vanilla planifolia</i>	Vanilloideae	Vanilleae	AJ310079.1	aic
OUTGROUP				
<i>Milligania stylosa</i>	Asteliaceae	-	HM640649.1	cic
<i>Astelia alpina</i>	Asteliaceae	-	AY368372.1	cic
<i>Blandfordia grandiflora</i>	Blandfordiaceae	-	JX903609.1	cic
<i>Borya septentrionalis</i>	Boryaceae	-	HM640651.1	cic
<i>Spiloxene serrata</i>	Hypoxidaceae	-	JX903621.1	cic
<i>Hypoxis hemerocallidea</i>	Hypoxidaceae	-	HM640657.1	cic
<i>Lanaria lanata</i>	Lanariaceae	-	AY368376.1	cic

¹Initiation codon used for translation of full-length MatK ORF is abbreviated as alternative initiation codon (aic) or consensus initiation codon (cic). The -6 initiation codon used by *Neottia nidus-avis* is noted as the cic as it is in frame with the cic for translation.

²Additional species/accessions only used to discern *matK* evolution in the Apostasioideae and were not included in the phylogenetic analysis.