

CeABC63	...MAGAAVAGSGVGGSSSIWAGHIFSRSHHEDEDEALWAALKKPTFYVRRGHITLHGGGGEHDEHLEFPERKLLERLVVFEEDNEFLIRLRDRDVGILPTFIVRYEHSHAPAE	127
Phalaenopsis_equestris	...MAGAAVAGSGVGGSSSIWAGHIFSRSHHEDEDEALWAALKKPTFYVRRGHITLHGGGGEHDEHLEFPERKLLERLVVFEEDNEFLIRLRDRDVGILPTFIVRYEHSHAPAE	127
Dendrobium_chrysotoxum	...MAGAAVAGSGVGGSSSIWAGHIFSRSHHEDEDEALWAALKKPTFYVRRGHITLHGGGGEHDEHLEFPERKLLERLVVFEEDNEFLIRLRDRDVGILPTFIVRYEHSHAPAE	127
Dendrobium_catenatum	...MAGAAVAGSGVGGSSSIWAGHIFSRSHHEDEDEALWAALKKPTFYVRRGHITLHGGGGEHDEHLEFPERKLLERLVVFEEDNEFLIRLRDRDVGILPTFIVRYEHSHAPAE	127
Vanilla_planifolia	...MAGAAVAGSGVGGSSSIWAGHIFSRSHHEDEDEALWAALKKPTFYVRRGHITLHGGGGEHDEHLEFPERKLLERLVVFEEDNEFLIRLRDRDVGILPTFIVRYEHSHAPAE	127
Elaeis_guineensis	MAAGAAVAGSGVGGSSSIWAGHIFSRSHHEDEDEALWAALKKPTFYVRRGHITLHGGGGEHDEHLEFPERKLLERLVVFEEDNEFLIRLRDRDVGILPTFIVRYEHSHAPAE	127
Consensus	m a v r g s d i f s r s e d d e e a l w a a l k k p t y r r l a g k e d i l g e r l l e r l v r e e d n e f l i r l r d r v g l p t f i v r y e h s h a p a e	130
CeABC63	YVGRGLPTDINSVNDSTANLILHNRPFIILHNSGKIKERBMTLLIGPFGSKTTLILALAGKLISQVSGSYTYNGHGMFEVFPQRTAYISQDLHIGEMTVRETLFSARCOQVGR	257
Phalaenopsis_equestris	YVGRGLPTDINSVNDSTANLILHNRPFIILHNSGKIKERBMTLLIGPFGSKTTLILALAGKLISQVSGSYTYNGHGMFEVFPQRTAYISQDLHIGEMTVRETLFSARCOQVGR	257
Dendrobium_chrysotoxum	YVGRGLPTDINSVNDSTANLILHNRPFIILHNSGKIKERBMTLLIGPFGSKTTLILALAGKLISQVSGSYTYNGHGMFEVFPQRTAYISQDLHIGEMTVRETLFSARCOQVGR	257
Dendrobium_catenatum	YVGRGLPTDINSVNDSTANLILHNRPFIILHNSGKIKERBMTLLIGPFGSKTTLILALAGKLISQVSGSYTYNGHGMFEVFPQRTAYISQDLHIGEMTVRETLFSARCOQVGR	257
Vanilla_planifolia	YVGRGLPTDINSVNDSTANLILHNRPFIILHNSGKIKERBMTLLIGPFGSKTTLILALAGKLISQVSGSYTYNGHGMFEVFPQRTAYISQDLHIGEMTVRETLFSARCOQVGR	257
Elaeis_guineensis	YVGRGLPTDINSVNDSTANLILHNRPFIILHNSGKIKERBMTLLIGPFGSKTTLILALAGKLISQVSGSYTYNGHGMFEVFPQRTAYISQDLHIGEMTVRETLFSARCOQVGR	257
Consensus	y v g r g l p t n s v n d s t a n l i l h n r p f i i l h n s g k i k e r b m t l l i g p f g s k t t l i l a l a g k l i s q v s g s y t y n g h g m f e v f p q r t a y i s q d l h i g e m t v r e t l f s a r c o q v g r	260
CeABC63	DIIEPTARRKAANIKEDPDVEMKATSMGQRTNITDYLRLGLHICADTMVGLDNRGISGGQRRVTTGENVGPAPALFMEIISTGLDSSITQIVNHGQCHITILGTAWSILGAPETED	387
Phalaenopsis_equestris	DIIEPTARRKAANIKEDPDVEMKATSMGQRTNITDYLRLGLHICADTMVGLDNRGISGGQRRVTTGENVGPAPALFMEIISTGLDSSITQIVNHGQCHITILGTAWSILGAPETED	387
Dendrobium_chrysotoxum	DIIEPTARRKAANIKEDPDVEMKATSMGQRTNITDYLRLGLHICADTMVGLDNRGISGGQRRVTTGENVGPAPALFMEIISTGLDSSITQIVNHGQCHITILGTAWSILGAPETED	387
Dendrobium_catenatum	DIIEPTARRKAANIKEDPDVEMKATSMGQRTNITDYLRLGLHICADTMVGLDNRGISGGQRRVTTGENVGPAPALFMEIISTGLDSSITQIVNHGQCHITILGTAWSILGAPETED	387
Vanilla_planifolia	DIIEPTARRKAANIKEDPDVEMKATSMGQRTNITDYLRLGLHICADTMVGLDNRGISGGQRRVTTGENVGPAPALFMEIISTGLDSSITQIVNHGQCHITILGTAWSILGAPETED	387
Elaeis_guineensis	DIIEPTARRKAANIKEDPDVEMKATSMGQRTNITDYLRLGLHICADTMVGLDNRGISGGQRRVTTGENVGPAPALFMEIISTGLDSSITQIVNHGQCHITILGTAWSILGAPETED	387
Consensus	l e i r r e k a a n i k e d p d v e m k a t s m g q r t n i t d y l r l g l h i c a d t m v g l d n r g i s g g q r r v t t g e n v g p a p a l f m e i i s t g l d s s i t q i v n h g q c h i t i l g t a w s i l g a p e t e d	390
CeABC63	IEDDITLISGCVVNGPFRHVLEFFESGFKCPERKQADFLGEVTSKDDCCQVRRHEDVYVVFPEFAEAFQSFHVGEKINELSHNRSHBEPALITSGVGVSTELKAKFSPRLIMLRNA	517
Phalaenopsis_equestris	IEDDITLISGCVVNGPFRHVLEFFESGFKCPERKQADFLGEVTSKDDCCQVRRHEDVYVVFPEFAEAFQSFHVGEKINELSHNRSHBEPALITSGVGVSTELKAKFSPRLIMLRNA	517
Dendrobium_chrysotoxum	IEDDITLISGCVVNGPFRHVLEFFESGFKCPERKQADFLGEVTSKDDCCQVRRHEDVYVVFPEFAEAFQSFHVGEKINELSHNRSHBEPALITSGVGVSTELKAKFSPRLIMLRNA	517
Dendrobium_catenatum	IEDDITLISGCVVNGPFRHVLEFFESGFKCPERKQADFLGEVTSKDDCCQVRRHEDVYVVFPEFAEAFQSFHVGEKINELSHNRSHBEPALITSGVGVSTELKAKFSPRLIMLRNA	517
Vanilla_planifolia	IEDDITLISGCVVNGPFRHVLEFFESGFKCPERKQADFLGEVTSKDDCCQVRRHEDVYVVFPEFAEAFQSFHVGEKINELSHNRSHBEPALITSGVGVSTELKAKFSPRLIMLRNA	517
Elaeis_guineensis	IEDDITLISGCVVNGPFRHVLEFFESGFKCPERKQADFLGEVTSKDDCCQVRRHEDVYVVFPEFAEAFQSFHVGEKINELSHNRSHBEPALITSGVGVSTELKAKFSPRLIMLRNA	517
Consensus	i f d d i l i s g c v v n g p f r h v l e f f e s g f k c p e r k q a d f l g e v t s k d d c c q v r r h e d v y v v f p e f a e a f q s f h v g e k i n e l s h n r s h b e p a l i t s g v g v s t e l k a k f s p r l i m l r n a	520
CeABC63	FVMPFARQLIYVAGTIDMTFLRTNHRNYSDDGIYMGSEFFIDIMFNGSELATIKRLFFFKGRDLIFYEAWYHHSWILKIPITVMEVGVVHITVYIGDERVGRFRCFIILANQM	647
Phalaenopsis_equestris	FVMPFARQLIYVAGTIDMTFLRTNHRNYSDDGIYMGSEFFIDIMFNGSELATIKRLFFFKGRDLIFYEAWYHHSWILKIPITVMEVGVVHITVYIGDERVGRFRCFIILANQM	647
Dendrobium_chrysotoxum	FVMPFARQLIYVAGTIDMTFLRTNHRNYSDDGIYMGSEFFIDIMFNGSELATIKRLFFFKGRDLIFYEAWYHHSWILKIPITVMEVGVVHITVYIGDERVGRFRCFIILANQM	647
Dendrobium_catenatum	FVMPFARQLIYVAGTIDMTFLRTNHRNYSDDGIYMGSEFFIDIMFNGSELATIKRLFFFKGRDLIFYEAWYHHSWILKIPITVMEVGVVHITVYIGDERVGRFRCFIILANQM	647
Vanilla_planifolia	FVMPFARQLIYVAGTIDMTFLRTNHRNYSDDGIYMGSEFFIDIMFNGSELATIKRLFFFKGRDLIFYEAWYHHSWILKIPITVMEVGVVHITVYIGDERVGRFRCFIILANQM	647
Elaeis_guineensis	FVMPFARQLIYVAGTIDMTFLRTNHRNYSDDGIYMGSEFFIDIMFNGSELATIKRLFFFKGRDLIFYEAWYHHSWILKIPITVMEVGVVHITVYIGDERVGRFRCFIILANQM	647
Consensus	f v m p f a r q l i y v a g t i d m t f l r t n h r n y s d d g i y m g s e f f i d i m f n g s e l a t i k r l f f f k g r d l i f y e a w y h h s w i l k i p i t v m e v g v v h i t v y i g d e r v g r f r c f i i l a n q m	649
CeABC63	ASLFRFIAALGRNVANFGSFALLVILVGLGFLSHVVKVWVWGWYSELIMYQNAISTNEFIGNTHSICQGGPESLGVILKSRGFAPEKWWIIGSGALIGMVNLEFVALSVBFGK	777
Phalaenopsis_equestris	ASLFRFIAALGRNVANFGSFALLVILVGLGFLSHVVKVWVWGWYSELIMYQNAISTNEFIGNTHSICQGGPESLGVILKSRGFAPEKWWIIGSGALIGMVNLEFVALSVBFGK	777
Dendrobium_chrysotoxum	ASLFRFIAALGRNVANFGSFALLVILVGLGFLSHVVKVWVWGWYSELIMYQNAISTNEFIGNTHSICQGGPESLGVILKSRGFAPEKWWIIGSGALIGMVNLEFVALSVBFGK	777
Dendrobium_catenatum	ASLFRFIAALGRNVANFGSFALLVILVGLGFLSHVVKVWVWGWYSELIMYQNAISTNEFIGNTHSICQGGPESLGVILKSRGFAPEKWWIIGSGALIGMVNLEFVALSVBFGK	777
Vanilla_planifolia	ASLFRFIAALGRNVANFGSFALLVILVGLGFLSHVVKVWVWGWYSELIMYQNAISTNEFIGNTHSICQGGPESLGVILKSRGFAPEKWWIIGSGALIGMVNLEFVALSVBFGK	777
Elaeis_guineensis	ASLFRFIAALGRNVANFGSFALLVILVGLGFLSHVVKVWVWGWYSELIMYQNAISTNEFIGNTHSICQGGPESLGVILKSRGFAPEKWWIIGSGALIGMVNLEFVALSVBFGK	777
Consensus	a s l f r f i a a l g r n v a n f g s f a l l v i l v g l g f l s h v v k v w v w g w y s e l i m y q n a i s t n e f i g n t h s i c q g g p e s l g v i l k s r g f a p e k w w i i g s g a l i g m v n l e f v a l s v b f g k	778
CeABC63	QHTSPTLTKKQCHITGEAESIERKS.....ESGG.....IRGNNAVEFGQNNKGVLEPLFVHEDIRYVDMCEMKAQVIEDRELLKVGSGFRPGVITALMSGAGKTILL	891
Phalaenopsis_equestris	QHTSPTLTKKQCHITGEAESIERKS.....ESGG.....IRGNNAVEFGQNNKGVLEPLFVHEDIRYVDMCEMKAQVIEDRELLKVGSGFRPGVITALMSGAGKTILL	891
Dendrobium_chrysotoxum	QHTSPTLTKKQCHITGEAESIERKS.....ESGG.....IRGNNAVEFGQNNKGVLEPLFVHEDIRYVDMCEMKAQVIEDRELLKVGSGFRPGVITALMSGAGKTILL	891
Dendrobium_catenatum	QHTSPTLTKKQCHITGEAESIERKS.....ESGG.....IRGNNAVEFGQNNKGVLEPLFVHEDIRYVDMCEMKAQVIEDRELLKVGSGFRPGVITALMSGAGKTILL	891
Vanilla_planifolia	QHTSPTLTKKQCHITGEAESIERKS.....ESGG.....IRGNNAVEFGQNNKGVLEPLFVHEDIRYVDMCEMKAQVIEDRELLKVGSGFRPGVITALMSGAGKTILL	891
Elaeis_guineensis	QHTSPTLTKKQCHITGEAESIERKS.....ESGG.....IRGNNAVEFGQNNKGVLEPLFVHEDIRYVDMCEMKAQVIEDRELLKVGSGFRPGVITALMSGAGKTILL	891
Consensus	q h t s p t l t k k q c h i t g e a e s i e r k s e s g g i r g n n a v e f g q n n k g v l e p l f v h e d i r y v d m c e m k a q v i e d r e l l k v g s f r p g v i t a l m s g a g k t i l l	908
CeABC63	NDVLAGRRTGGVIECSHIGYFFKQETTFARSGYCEQNDIHSFVTVYESVNSAWRLRLEHVSAGHFIEDNEVELTILRGLVLGLPGVNGLSQCKRRLLTIAVELVANFTHHDEPTSGLDA	1021
Phalaenopsis_equestris	NDVLAGRRTGGVIECSHIGYFFKQETTFARSGYCEQNDIHSFVTVYESVNSAWRLRLEHVSAGHFIEDNEVELTILRGLVLGLPGVNGLSQCKRRLLTIAVELVANFTHHDEPTSGLDA	1021
Dendrobium_chrysotoxum	NDVLAGRRTGGVIECSHIGYFFKQETTFARSGYCEQNDIHSFVTVYESVNSAWRLRLEHVSAGHFIEDNEVELTILRGLVLGLPGVNGLSQCKRRLLTIAVELVANFTHHDEPTSGLDA	1021
Dendrobium_catenatum	NDVLAGRRTGGVIECSHIGYFFKQETTFARSGYCEQNDIHSFVTVYESVNSAWRLRLEHVSAGHFIEDNEVELTILRGLVLGLPGVNGLSQCKRRLLTIAVELVANFTHHDEPTSGLDA	1021
Vanilla_planifolia	NDVLAGRRTGGVIECSHIGYFFKQETTFARSGYCEQNDIHSFVTVYESVNSAWRLRLEHVSAGHFIEDNEVELTILRGLVLGLPGVNGLSQCKRRLLTIAVELVANFTHHDEPTSGLDA	1021
Elaeis_guineensis	NDVLAGRRTGGVIECSHIGYFFKQETTFARSGYCEQNDIHSFVTVYESVNSAWRLRLEHVSAGHFIEDNEVELTILRGLVLGLPGVNGLSQCKRRLLTIAVELVANFTHHDEPTSGLDA	1021
Consensus	n d v l a g r r t g g v i e c s h i g y f f k q e t t f a r s g y c e q n d i h s f v t v y e s v n s a w r l r l e h v s a g h f i e d n e v e l t i l r g l v l g l p g v n g l s q c k r r l l t i a v e l v a n f t h h d e p t s g l d a	1038
CeABC63	RAAIVMRTVNTVGTGRTVCTIHQPSIDIFEADELFIKRGGEIIVGPIGRHSCILISYFEG.....IRGVKIRGYNPATWMLEVTIACEEILGVHBNV	1124
Phalaenopsis_equestris	RAAIVMRTVNTVGTGRTVCTIHQPSIDIFEADELFIKRGGEIIVGPIGRHSCILISYFEG.....IRGVKIRGYNPATWMLEVTIACEEILGVHBNV	1124
Dendrobium_chrysotoxum	RAAIVMRTVNTVGTGRTVCTIHQPSIDIFEADELFIKRGGEIIVGPIGRHSCILISYFEG.....IRGVKIRGYNPATWMLEVTIACEEILGVHBNV	1124
Dendrobium_catenatum	RAAIVMRTVNTVGTGRTVCTIHQPSIDIFEADELFIKRGGEIIVGPIGRHSCILISYFEG.....IRGVKIRGYNPATWMLEVTIACEEILGVHBNV	1124
Vanilla_planifolia	RAAIVMRTVNTVGTGRTVCTIHQPSIDIFEADELFIKRGGEIIVGPIGRHSCILISYFEG.....IRGVKIRGYNPATWMLEVTIACEEILGVHBNV	1124
Elaeis_guineensis	RAAIVMRTVNTVGTGRTVCTIHQPSIDIFEADELFIKRGGEIIVGPIGRHSCILISYFEG.....IRGVKIRGYNPATWMLEVTIACEEILGVHBNV	1124
Consensus	r a a i v m r t v n t v g t g r t v c t i h q p s i d i f e a d e l f i k r g g e i i v g p i g r h s c i l i s y f e g i r g v k i r g y n p a t w m l e v t i a c e e i l g v h b n v	1141
CeABC63	RNSLIGQRLIKELSBPPGSDIDGTCYSCHIFGQGLLNKQLSYWRNPFFVNAFFETIADLPGTIFWDLGRSKQDLFNANGSMYASLHIGENSSVQPVVWERTVFFYRERAGM	1254
Phalaenopsis_equestris	RNSLIGQRLIKELSBPPGSDIDGTCYSCHIFGQGLLNKQLSYWRNPFFVNAFFETIADLPGTIFWDLGRSKQDLFNANGSMYASLHIGENSSVQPVVWERTVFFYRERAGM	1254
Dendrobium_chrysotoxum	RNSLIGQRLIKELSBPPGSDIDGTCYSCHIFGQGLLNKQLSYWRNPFFVNAFFETIADLPGTIFWDLGRSKQDLFNANGSMYASLHIGENSSVQPVVWERTVFFYRERAGM	1254
Dendrobium_catenatum	RNSLIGQRLIKELSBPPGSDIDGTCYSCHIFGQGLLNKQLSYWRNPFFVNAFFETIADLPGTIFWDLGRSKQDLFNANGSMYASLHIGENSSVQPVVWERTVFFYRERAGM	1254
Vanilla_planifolia	RNSLIGQRLIKELSBPPGSDIDGTCYSCHIFGQGLLNKQLSYWRNPFFVNAFFETIADLPGTIFWDLGRSKQDLFNANGSMYASLHIGENSSVQPVVWERTVFFYRERAGM	1254
Elaeis_guineensis	RNSLIGQRLIKELSBPPGSDIDGTCYSCHIFGQGLLNKQLSYWRNPFFVNAFFETIADLPGTIFWDLGRSKQDLFNANGSMYASLHIGENSSVQPVVWERTVFFYRERAGM	1254
Consensus	r n s l i g q r l i k e l s b p p g s d i d g t c y s c h i f g q g l n k q l s y w r n p f f v n a f f e t i a d l p g t i f w d l g r s k q d l f n a n g s m y a s l h i g e n s s v q p v v w e r t v f f y r e r a g m	1271
CeABC63	YSLLPYAFGGVIEIFVLMQCHITGYIVVMITGEFWDARFFWYFEMFETFLYFTYGMMAVGLTGNIAIVSSAFYGNHNLFSGHIFRFRFVWWRWYWACPVWTLVGLVASQCHIDHDFD	1384
Phalaenopsis_equestris	YSLLPYAFGGVIEIFVLMQCHITGYIVVMITGEFWDARFFWYFEMFETFLYFTYGMMAVGLTGNIAIVSSAFYGNHNLFSGHIFRFRFVWWRWYWACPVWTLVGLVASQCHIDHDFD	1384
Dendrobium_chrysotoxum	YSLLPYAFGGVIEIFVLMQCHITGYIVVMITGEFWDARFFWYFEMFETFLYFTYGMMAVGLTGNIAIVSSAFYGNHNLFSGHIFRFRFVWWRWYWACPVWTLVGLVASQCHIDHDFD	1384
Dendrobium_catenatum	YSLLPYAFGGVIEIFVLMQCHITGYIVVMITGEFWDARFFWYFEMFETFLYFTYGMMAVGLTGNIAIVSSAFYGNHNLFSGHIFRFRFVWWRWYWACPVWTLVGLVASQCHIDHDFD	1384
Vanilla_planifolia	YSLLPYAFGGVIEIFVLMQCHITGYIVVMITGEFWDARFFWYFEMFETFLYFTYGMMAVGLTGNIAIVSSAFYGNHNLFSGHIFRFRFVWWRWYWACPVWTLVGLVASQCHIDHDFD	1384
Elaeis_guineensis	YSLLPYAFGGVIEIFVLMQCHITGYIVVMITGEFWDARFFWYFEMFETFLYFTYGMMAVGLTGNIAIVSSAFYGNHNLFSGHIFRFRFVWWRWYWACPVWTLVGLVASQCHIDHDFD	1384
Consensus	y s l l p y a f g g v i e i f v l m q c h i t g y i v v m i t g e f w d a r f f w y f e m f e t f l y f t y g m m a v g l t g n i a i v s s a f y g n h n l f s g h i f r f r f v w w r w y w a c p v w t l v g l v a s q c h i d h d f d	1401
CeABC63	GSEVTISGHSYVFGHDFLIVVAVVWGSAALFAFLGSHIPLINFCRR	1435
Phalaenopsis_equestris	GSEVTISGHSYVFGHDFLIVVAVVWGSAALFAFLGSHIPLINFCRR	1435
Dendrobium_chrysotoxum	GSEVTISGHSYVFGHDFLIVVAVVWGSAALFAFLGSHIPLINFCRR	1435
Dendrobium_catenatum	GSEVTISGHSYVFGHDFLIVVAVVWGSAALFAFLGSHIPLINFCRR	1435
Vanilla_planifolia	GSEVTISGHSYVFGHDFLIVVAVVWGSAALFAFLGSHIPLINFCRR	1435
Elaeis_guineensis	GSEVTISGHSYVFGHDFLIVVAVVWGSAALFAFLGSHIPLINFCRR	1435
Consensus	g s e v t i s g h s y v f g h d f l i v v a v v w g s a a l f a f l g s h i p l i n f c r r	1451

Supplementary Figure S2. Multiple alignment of CeABC63 with other ABC proteins.