

## 1. *rbcL* alignment of three strains of *P. neolepis*: TMR5, PZ241, VF28.

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      10      20      30      40      50      60      70      80      90
TMR5 RbcL  GATCCTGATTACGTTATCAAGGAAACTGACATCTTAGCTCTATTCCGTTGTACTCCACAACCAGGTGTTGACCCCTGTAGAAGCTGCTGCA
PZ241 RbcL  GATCCTGATTACGTTATCAAGGAAACTGACATCTTAGCTCTATTCCGTTGTACTCCACAACCAGGTGTTGACCCCTGTAGAAGCTGCTGCA
VF28 RbcL  GATCCTGATTACGTTATCAAGGAAACTGACATCTTAGCTCTATTCCGTTGTACTCCACAACCAGGTGTTGACCCCTGTAGAAGCTGCTGCA

      100     110     120     130     140     150     160     170     180
TMR5 RbcL  GCTCTTGCTGGTGAGTCTTCAACAGCAACATGGACTGTTGTATGGACAGATCTACTAACTGCTTGTGATCTATACCGTGCAAAAGCTTAC
PZ241 RbcL  GCTCTTGCTGGTGAGTCTTCAACAGCAACATGGACTGTTGTATGGACAGATCTACTAACTGCTTGTGACCTATACCGTGCAAAAGCTTAC
VF28 RbcL  GCTCTTGCTGGTGAGTCTTCAACAGCAACATGGACTGTTGTATGGACAGATCTACTAACTGCTTGTGACCTATACCGTGCAAAAGCTTAC

      190     200     210     220     230     240     250     260     270
TMR5 RbcL  CGTGTAGATCCGGTACCTAGTACACCGGATACCTTACTTCTGTTATATCGCTTACGATCTAGACCTATTTGAAGAAGGTTCACTTGCTAAC
PZ241 RbcL  CGTGTAGATCCGGTACCTAGTACACCGGATACCTTACTTCTGTTATATCGCTTACGATCTAGACCTATTTGAAGAAGGTTCACTTGCTAAC
VF28 RbcL  CGTGTAGATCCGGTACCTAGTACACCGGATACCTTACTTCTGTTATATCGCTTACGATCTAGACCTATTTGAAGAAGGTTCACTTGCTAAC

      280     290     300     310     320     330     340     350     360
TMR5 RbcL  CTAATGCACTATTATCGGTAAACATCTTCGGTTTCAAAGCGGTAAAGGCTCTTAGACTAGAAGATATGCGTTTCCCTGTAGCACTGCTA
PZ241 RbcL  CTAATGCACTATTATCGGTAAACATCTTCGGTTTCAAAGCGGTAAAGGCTCTTAGACTAGAAGATATGCGTTTCCCTGTAGCACTGCTA
VF28 RbcL  CTAATGCACTATTATCGGTAAACATCTTCGGTTTCAAAGCGGTAAAGGCTCTTAGACTAGAAGATATGCGTTTCCCTGTAGCACTGCTA

      370     380     390     400     410     420     430     440     450
TMR5 RbcL  AAGACTTACCAAGGACCCGCTACTGGTTTAAATCGTAGAGCGTGAGCGTATGGATAAGTTCGGTCGTCTCTATTAGGTGCAACTGTAAAG
PZ241 RbcL  AAGACTTACCAAGGACCCGCTACTGGTTTAAATCGTAGAGCGTGAGCGTATGGATAAGTTCGGTCGTCTCTATTAGGTGCAACTGTAAAG
VF28 RbcL  AAGACTTACCAAGGACCCGCTACTGGTTTAAATCGTAGAGCGTGAGCGTATGGATAAGTTCGGTCGTCTCTATTAGGTGCAACTGTAAAG

      460     470     480     490     500     510     520     530     540
TMR5 RbcL  CCTAAGCTTGGTCTTTCTGGTAAAGACTACGGTCGTGTAGTATTCGAAGGCTTAAAGGTGGTCTTGACTTCTTAAAGATGATGAGAAC
PZ241 RbcL  CCTAAGCTTGGTCTTTCTGGTAAAGACTACGGTCGTGTAGTATTCGAAGGCTTAAAGGTGGTCTTGACTTCTTAAAGATGATGAGAAC
VF28 RbcL  CCTAAGCTTGGTCTTTCTGGTAAAGACTACGGTCGTGTAGTATTCGAAGGCTTAAAGGTGGTCTTGACTTCTTAAAGATGATGAGAAC

      550     560     570     580     590     600     610     620     630
TMR5 RbcL  ATTAACTCACAGCCATTATGCGTTACAGAGAGCGTTTCCTTTACTCAATGGAAGGTGTTAAACCACGCAGCAGCTGTAACCTGGTGAAGTT
PZ241 RbcL  ATTAACTCACAGCCATTATGCGTTACAGAGAGCGTTTCCTTTACTCAATGGAAGGTGTTAAACCACGCAGCAGCTGTAACCTGGTGAAGTT
VF28 RbcL  ATTAACTCACAGCCATTATGCGTTACAGAGAGCGTTTCCTTTACTCAATGGAAGGTGTTAAACCACGCAGCAGCTGTAACCTGGTGAAGTT

      640     650     660     670
TMR5 RbcL  AAAGGTCACTACTTAAACACTACTGGTGCAACTATGGAAGAAA
PZ241 RbcL  AAAGGTCACTACTTAAACACTACTGGTGCAACTATGGAAGAAA
VF28 RbcL  AAAGGTCACTACTTAAACACTACTGGTGCAACTATGGAAGAAA

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## 2. SSU alignment

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      10      20      30      40      50      60      70
|AB183265.1| Prymnesium neolep -GTTTATTTGATGGTACCTT- ACTACTTGGATAACCGTAGTAATTCAGAGCTAATACATGCAGGAAACC
Prymnesium neolepis strain TMR -GTTTATTTGATGGTACCTT- ACTACTTGGATAACCGTAGTAATTCAGAGCTAATACATGCAGGAAACC
|FN551248.1| Chrysochromulina -----AGCTNATACATGCAGGAAGTC
|AM779755.1| Prymnesium palpeb  AGTTTATTTGATGGTACCTT- ACTACTTGGATAACCGTAGTAATTCAGAGCTAATACATGCAGGAAGTC
|AM491014.2| Imantonia rotunda -GTTTATTTGATGGTACCTT- ACTACTTGGATAACCGTAGTAATTCAGAGCTAATACATGCAGGATCGC

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AJ544117.1	Coccolithus braar	-GTTTATTTGATGGTACCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCAGGAAGGC
AJ544118.1	Umbilicosphaera s	-GTTTATTTGATGGTACCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCAGGAAGTC
AJ544119.1	Umbilicosphaera f	-GTTTATTTGATGGTACCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCAGGAAGTC
AM491024.2	Calyptrosphaera r	-GTTTATTTGATGGTACCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCAGGAAGTC
HQ877901.1	Emiliana huxleyi	-GTTTATTTGATGGTACCTT	GCTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCAGGAGTTC
AB183665.1	Gephyrocapsa ocea	-GTTTATTTGATGGTACCTT	GCTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCAGGAGTTC
JF489945.1	Isochrysis galban	-GTTTATTTGATGGTACCTT	GCTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCAGGAGTTC
AM490974.2	Pleurochrysis ros	-GTTTATTTGATGGTACCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCAGGAGTTC
AM491017.2	Chrysochromulina	AGTTTATTTGATGGTACC-T	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCAGGAAGAC
AM491019.2	Chrysochromulina	AGTTTATTTGATGGTACC-T	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCAGGAAGAC
JF489961.1	Pavlova lutheri	GTTTATTTGATGGTACCTT	GCTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCAGGAGTTC
HQ912555.1	Thalassiosira pse	-GTTTCTTTGATAGTCCCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCATCAATAC
JN091722.1	Pseudo-nitzschia	-----	-----	-----	-----	-----
JF790983.1	Cymbella cistulif	-GTTTATTTGATAGTCCCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCCTCAATAC
HQ912556.1	Phaeodactylum tri	-GTTTATTTGATAGTCCCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCCTCAATAC
AB546639.1	Triparma sp.	-GTTTATTTGATAATCTCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCCTAAACAC
HQ912557.1	Bolidomonas pacif	-GTTTATTTGATAATCTCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCCTAAACAC
EF165138.1	Ochromonas marina	-GTTTATTTGATGGT-TCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCCTCAAAAC
EF165116.1	Synura petersenii	-GTTTATTTGATGAT-TCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCCTCAAAAC
JQ281519.1	Mallomonas papill	-GTTTATTTGATGGT-TCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCCTCAAAAC
EF432519.1	Paraphysomonas im	-GTTTATTTGATGGT-TCTT	GCTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCCTCAAAAC
EF165146.1	Lagynion cf. ampu	-GTTTATTTGATGGT-TCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCCTCAATCC
AB096710.1	Dictyocha fibula	-GTTTATTTGATAGTCCCTT	ACTACTTGGATAAACC	GTAGTAATTC	TAGAGCTAAT	CATGCATCAATAC
AB097408.1	Helicopedinella t	-GTTTATTTGATATCCCTT	ACTACTCGGATAAACC	GTAGTAATTC	TAGAGCTAAT	ACGTGCGTCAAAACG

		80	90	100	110	120	130	140
AB183265.1	Prymnesium neolep	CCG-----	ACT-----	CACGGAGGGG	TGTTTTATTAGATAAGAA	CCAATCCGGCTT	G	CCG
Prymnesium neolepis strain TMR		CCG-----	ACT-----	CACGGAGGGG	TGTTTTATTAGATAAGAA	CCAATCCGGCTT	G	CCG
FN551248.1	Chrysochromulina	CCG-----	ACT-----	TTGGAAGGGG	TGTTTTATTAGATAAGAA	CCAACCCGGCTT	G	CCG
AM779755.1	Prymnesium palpeb	CCG-----	ACT-----	TCGGAAGGGG	TGTTTTATTAGATAAGAA	CCAACCCGGCTT	G	CCG
AM491014.2	Imantonia rotunda	CCG-----	ACT-----	TCGGAAGGGG	TGTTTTATTAGATAAGAA	CCAACCCGGCTT	T	GCG
AJ544117.1	Coccolithus braar	CC-----		TCCGGGGCCG	TATTTATTAGATAAGAA	CCAATCCCTTTT	G	G
AJ544118.1	Umbilicosphaera s	CC-----		TTCTGGGGAT	TATTTATTAGATAAGAA	CCAATCCCATCC	G	G
AJ544119.1	Umbilicosphaera f	CC-----		TTCTGGGGAT	TATTTATTAGATAAGAA	CCAATCCCTCTT	G	G
AM491024.2	Calyptrosphaera r	CCG-----	ACT-----	TTTGAGGGAT	TATTTATTAGATAAGAA	CCAATCCGCCCTT	G	TGCG
HQ877901.1	Emiliana huxleyi	CCG-----	ACT-----	CACGGAGGGG	TGTTTTATTAGATAAGAA	CCAACCCGGTCT	C	CG
AB183665.1	Gephyrocapsa ocea	CCG-----	ACT-----	CACGGAGGGG	TGTTTTATTAGATAAGAA	CCAACCCGGTCT	C	CG
JF489945.1	Isochrysis galban	CCG-----	ACT-----	TCGGAAGGGG	TGTTTTATTAGATAAGAA	CCAACCCGGTCT	C	CG
AM490974.2	Pleurochrysis ros	GTGCGCGGTT	CTCTC-----	CGCGCCCGG	TATTTATTAGATAAGAA	CCAACCCGGCTT	G	TGCG
AM491017.2	Chrysochromulina	CCG-----	ACT-----	TCGGAAGGGG	TGTTTTATTAGATAAGAA	CCAATCAGCTTG	C	TG
AM491019.2	Chrysochromulina	CCG-----	ACT-----	CACGAAGGGG	TGTTTTATTAGATAAGAA	CCCTCCCTTTG	G	
JF489961.1	Pavlova lutheri	CCG-----	ACG-----	TTTGAGGGAT	TATTTATTAGATAAGAA	CCAACCCGGCGCAGCCCG	G	AC
HQ912555.1	Thalassiosira pse	CCG-----	ACTGTTT	CGCGAAGGGG	TATTTATTAGATAGAAC	CAACCGTCTTCG	G	AC
JN091722.1	Pseudo-nitzschia	-----	-----	-----	-----	-----	-----	-----
JF790983.1	Cymbella cistulif	CCT-----	TCTG-----	GGGTAGTATTT	ATTAGACTGAAACCAACC	CCTTC	G	GG
HQ912556.1	Phaeodactylum tri	CCT-----	TCTG-----	GGGTAGTATTT	ATTAGATTGAAACCAACC	CCTTC	G	GG
AB546639.1	Triparma sp.	CCA-----	ACTGTTT	GCGGACGGG	TGTTTTATTAGATTGAAACCAATTC	CTTCG	G	AG
HQ912557.1	Bolidomonas pacif	CCA-----	ACTGTTT	GCGGACGGG	TGTTTTATTAGATTGAAACCAATAGCTTCG	G	CT	
EF165138.1	Ochromonas marina	CTA-----	AC--TT	CTGGAAGGGG	TGTTTTATTAGATTGAAACCAATGCGGGGCA	ACCC		
EF165116.1	Synura petersenii	CCG-----	AC--TT	CTGGAAGGGG	TGTTTTATTAGATTGAAACCAATGCGGGGCA	ACCC		
JQ281519.1	Mallomonas papill	CCG-----	AC--TT	CTGGAAGGGG	TGTTTTATTAGATTGAAACCAATGCGGGGCA	ACCC		
EF432519.1	Paraphysomonas im	TCG-----	ACTT--TT	TTGGAAGAGG	TGTTTTATTAGATTGAAACCAATGCGGGGCA	ACCC		
EF165146.1	Lagynion cf. ampu	CCA-----	AC--T	TGAGAAGGGG	TGTTTTATTAGATTGAAACCAATGCGGGGAA	GCCC		
AB096710.1	Dictyocha fibula	CCA-----	ACTGCTT	NGCGGACGGG	ANGTATTATTAGAAAGAACCAATGCGAGCGCA	AGTCG		
AB097408.1	Helicopedinella t	ACA-----		TATGTCGTG	TATTAGATAGAAACCAATGCGGCTCTC	GGCCG		

		150	160	170	180	190	200	210
AB183265.1	Prymnesium neolep	GTTCGCTGCTGAGT	CACAATAACTGCGCAAT	CGCACGGCC	TTG-TGCCGGCGATGGTTCATTCAAATTT			
Prymnesium neolepis strain TMR		GTTCGCTGCTGAGT	CACAATAACTGCGCAAT	CGCACGGCC	TTG-TGCCGGCGATGGTTCATTCAAATTT			
FN551248.1	Chrysochromulina	GTTCGCTGCTGAGT	CACAATAACTGCTCGAAT	CGCATGGCC	TCG-TGCCGGCGATGGTTCATTCAAATTT			
AM779755.1	Prymnesium palpeb	GTTCGCTGCTGAGT	CACAATAACTGCTCGAAT	CGCATGGCC	TCG-TGCCGGCGATGGTTCATTCAAATTT			
AM491014.2	Imantonia rotunda	GTTCGCTGCTGAGT	CACAATAACTGCTCGAAT	CGCATGGCC	TCG-TGCCGGCGATGGTTCATTCAAATTT			
AJ544117.1	Coccolithus braar	GTTCGCTGCCGAGT	CATAATAACTGCTCGAAT	CGCATGGCC	TCG-TGCCGGCGATGGTTCATTCAAATTT			
AJ544118.1	Umbilicosphaera s	GTTCGCTGCCGAGT	CATAATAACTGCTCGAAT	CGCATGGCC	TCG-TGCCGGCGATGGTTCATTCAAATTT			
AJ544119.1	Umbilicosphaera f	GTTCGCTGCCGAGT	CATAATAACTGCTCGAAT	CGCATGGCC	TCG-TGCCGGCGATGGTTCATTCAAATTT			
AM491024.2	Calyptrosphaera r	GTTCGCTGCTGAGT	CACAATAACTGCTCGAAT	CGCATGGCC	TCG-TGCCGGCGATGGTTCATTCAAATTT			
HQ877901.1	Emiliana huxleyi	GTTCGCTGCTGAGT	CACAATAACTGCTCGAAT	CGCACGGCTCTA	CGCCGGCGATGGTTCATTCAAATTT			
AB183665.1	Gephyrocapsa ocea	GTTCGCTGCTGAGT	CACAATAACTGCTCGAAT	CGCACGGCTCTA	CGCCGGCGATGGTTCATTCAAATTT			
JF489945.1	Isochrysis galban	GTTCGCTGCTGAGT	CACAATAACTGCTCGAAT	CGCACGGCTCTA	CGCCGGCGATGGTTCATTCAAATTT			



HQ912556.1	Phaeodactylum tri	<b>TTGATTCCGGAGAGGGAGCCTGAGAGACGGCTACCACATCC</b>
AB546639.1	Triparma sp.	<b>TCGATTCCGGAGAGGGAGCCTGAGAGACGGCTACCACATCC</b>
HQ912557.1	Bolidomonas pacif	<b>TCGATTCCGGAGAGGGAGCCTGAGAGACGGCTACCACATCC</b>
EF165138.1	Ochromonas marina	<b>TCGATTCCGGAGAGGGAGCCTGAGAAAACGGCTACCACATCC</b>
EF165116.1	Synura petersenii	<b>TCGATTCCGGAGAGGGAGCCTGAGAAAATGGCTACCACATCC</b>
JQ281519.1	Mallomonas papill	<b>TCGATTCCGGAGAGGGAGCCTGAGAAAATGGCTACCACATCC</b>
EF432519.1	Paraphysomonas im	<b>TCGATTCCGGAGAGGGAGCCTGAGAAAATGGCTACCACATCC</b>
EF165146.1	Lagynion cf. ampu	<b>TCGATTCCGGAGAGGGAGCCTGAGAAAATGGCTACCACATCC</b>
AB096710.1	Dictyocha fibula	<b>TCGATTCCGGAGAGGGAGCCTGAGAGAC-GCTACCACATCC</b>
AB097408.1	Helicopedinella t	<b>TCGATTCCGGAGAGGGAGCCTGAGAGACGGCTACCACATCC</b>

		360	370	380	390	400	410	420
AB183265.1	Prymnesium neolep	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCTAT	-CTTAGTCTTGTAATTGGAA				
Prymnesium neolepis strain TMR		GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCTAT	-CTTAGTCTTGTAATTGGAA				
FN551248.1	Chrysochromulina	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCTAT	-TTTAGTCTTGTAATTGGAA				
AM779755.1	Prymnesium palpeb	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCTAT	-CTTAGTCTTGTAATTGGAA				
AM491014.2	Imantonia rotunda	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCCAC	-TTTGGTCTTGTAATTGGAA				
AJ544117.1	Coccolithus braar	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCCAT	-CTTAGTCTTGTAATTGGAA				
AJ544118.1	Umbilicosphaera s	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCCAT	-CTTAGTCTTGTAATTGGAA				
AJ544119.1	Umbilicosphaera f	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCCAT	-CTTAGTCTTGTAATTGGAA				
AM491024.2	Calyptrosphaera r	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCCAT	-TTTGGTCTTGTAATTGGAA				
HQ877901.1	Emiliana huxleyi	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCTAT	-TTTAGTCTTGTAATTGGAA				
AB183665.1	Gephyrocapsa ocea	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCTAT	-TTTAGTCTTGTAATTGGAA				
JF489945.1	Isochrysis galban	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCTCT	-TCGAGTCTTGTAATTGGAA				
AM490974.2	Pleurochrysis ros	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCCAT	-CTTAGTCTTGTAATTGGAA				
AM491017.2	Chrysochromulina	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCTACATCTAGTCTTGTAATTGGAA					
AM491019.2	Chrysochromulina	GAATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCTACATCTAGTCTTGTAATTGGAA					
JF489961.1	Pavlova lutheri	-AATCCTGACACAGGGAGG	TAGTGACAAGAAATAACAATACAGGGCTCT	-TCGAGTCTTGTAATTGGAA				
HQ912555.1	Thalassiosira pse	-AATACTGAAACAGT	GAGGTAGTGACAATAAATAACAATGCCGGCC	TTTACAGGCTCTGGCAATTGGAA				
JN091722.1	Pseudo-nitzschia							
JF790983.1	Cymbella cistulif	-AATCCTGACACAGGGAGG	TAGTGACAATAAATAACAATGACGGGCC	TTTGTAGGCTCTGCAATTGGAA				
HQ912556.1	Phaeodactylum tri	-AATCCTGACACAGGGAGG	TAGTGACAATAAATAACAATGCCGGCC	TTTCTAGGCTCTGGCTTTTGGAA				
AB546639.1	Triparma sp.	-AATCCTGACACAGGGAGG	TAGTGACAATAAATAACAATGCCGGCC	TTTTAAGGCTCTGGCAATTGGAA				
HQ912557.1	Bolidomonas pacif	-AATCCTGACACAGGGAGG	TAGTGACAATAAATAACAATGCCGGCC	TTTTTAGGCTCTGGCAATTGGAA				
EF165138.1	Ochromonas marina	-AATCCTGACACAGGGAGG	TAGTGACAATAAATAACAATGCCGGCC	TTTTTAGGCTCTGGCAATTGGAA				
EF165116.1	Synura petersenii	-AATCCTGACACAGGGAGG	TAGTGACAATAAATAACAATGCTGGGC	TTATTTAAGTCTGGCAATTGGAA				
JQ281519.1	Mallomonas papill	-AATCCTGACACAGGGAGG	TAGTGACAATAAATAACAATGCCGGCC	TTTTTAAGTCTGGCAATTGGAA				
EF432519.1	Paraphysomonas im	-AATCCTGACACAGGGAGG	TAGTGACAATAAATAACAATGCCGGCC	TTTTTAAGTCTGGCAATTGGAA				
EF165146.1	Lagynion cf. ampu	-AATCCTGACACAGGGAGG	TAGTGACAATAAATAACAATGCCGAGCC	-GTAAAGTCTGGCAATTGGAA				
AB096710.1	Dictyocha fibula	-AATCCTGATACAGGGAGG	TAGTGACAAAAATAACAATGCCGGCC	TTTTTAAGTCTGGTAATTGGAA				
AB097408.1	Helicopedinella t	-AATCCTGACTCAGGGAGG	TAGTGACAAAAATAACTTAGACGGCC	TTTTTGGTCTGTCTTAGGAA				

		430	440	450	460	470	480	490
AB183265.1	Prymnesium neolep	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
Prymnesium neolepis strain TMR		GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
FN551248.1	Chrysochromulina	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
AM779755.1	Prymnesium palpeb	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
AM491014.2	Imantonia rotunda	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
AJ544117.1	Coccolithus braar	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
AJ544118.1	Umbilicosphaera s	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
AJ544119.1	Umbilicosphaera f	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
AM491024.2	Calyptrosphaera r	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
HQ877901.1	Emiliana huxleyi	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
AB183665.1	Gephyrocapsa ocea	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
JF489945.1	Isochrysis galban	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
AM490974.2	Pleurochrysis ros	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
AM491017.2	Chrysochromulina	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
AM491019.2	Chrysochromulina	GAGTACAATTTACATCTCTT	CACGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
JF489961.1	Pavlova lutheri	GAGTACAATTTAAATCCCTTA	TCGAGGATCCATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
HQ912555.1	Thalassiosira pse	GAGAACAATTTAAATCCCTTA	TCGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
JN091722.1	Pseudo-nitzschia							
JF790983.1	Cymbella cistulif	GAGAACAATTTAAACCCCTTA	TCGAGGATCCATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
HQ912556.1	Phaeodactylum tri	GAGAACAATTTAAACCCCTTA	TCGAGGATCCATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
AB546639.1	Triparma sp.	GAGAACAATTTAAATCCCTTA	TCGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
HQ912557.1	Bolidomonas pacif	GAGAACAATTTAAATCCCTTA	TCGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
EF165138.1	Ochromonas marina	GAGAACAATTTAAATCCCTTA	TCGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
EF165116.1	Synura petersenii	GAGAACAATTTAAATCCCTTA	TCGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
JQ281519.1	Mallomonas papill	GAGAACAATTTAAATCCCTTA	TCGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					
EF432519.1	Paraphysomonas im	GAGAACAATTTAAATCCCTTA	TCGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC					

EF165146.1	Lagynion cf. ampu	GAGAACAATTTAAATCCCTTATCGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC
AB096710.1	Dictyocha fibula	GAGAACAATTTAAATCCCTTATCGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC
AB097408.1	Helicopedinella t	GAGAACAATTTAAATCCCTTATCGAGGATCAATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGGTAATTC
		.....
		500 510 520 530 540 550 560
AB183265.1	Prymnesium neolep	CAGCTCCAATAGCGTATGTTAAAGTTGTTGCAGTTAAAACGCACGTAGTCGGATTTTCGGGGCGGG CCG
Prymnesium neolepis strain TMR		CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCCGC
FN551248.1	Chrysochromulina	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGTCCCGC
AM779755.1	Prymnesium palpeb	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGC
AM491014.2	Imantonia rotunda	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGTTCGCT
AJ544117.1	Coccolithus braar	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGTGTGAC
AJ544118.1	Umbilicosphaera s	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGTCCGAGC
AJ544119.1	Umbilicosphaera f	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGTCCGAGC
AM491014.2	Calyptrosphaera r	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGTCCGCTG
HQ877901.1	Emiliana huxleyi	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
AB183665.1	Gephyrocapsa ocea	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
JF489945.1	Isochrysis galban	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGTCCCGC
AM490974.2	Pleurochrysis ros	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGC
AM491017.2	Chrysochromulina	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
AM491019.2	Chrysochromulina	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
JF489961.1	Pavlova lutheri	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
HQ912555.1	Thalassiosira pse	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
JN091722.1	Pseudo-nitzschia	-----GTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
JF790983.1	Cymbella cistulif	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
HQ912556.1	Phaeodactylum tri	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
AB546639.1	Triparma sp.	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
HQ912557.1	Bolidomonas pacif	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
EF165138.1	Ochromonas marina	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
EF165116.1	Synura petersenii	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
JQ281519.1	Mallomonas papill	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
EF432519.1	Paraphysomonas im	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
EF165146.1	Lagynion cf. ampu	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
AB096710.1	Dictyocha fibula	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
AB097408.1	Helicopedinella t	CAGCTCCAATAGCGTATATTTAAAGTTGTTGCAGTTAAAACGCCTCGTAGTCGGATTTTCGGGGCGGGCCGAC
		.....
		570 580 590 600 610 620 630
AB183265.1	Prymnesium neolep	CGGTCTG-----CCGATGGGTACGCACCTGGCG--GGCGCTCCCTTCCTTCGGGGGGCTGGCCCTACT
Prymnesium neolepis strain TMR		CGGTCTG-----CCGATGGGTACGCACCTGGCG--GGCGCTCCCTTCCTTCGGGGGGCTGGCCCTACT
FN551248.1	Chrysochromulina	CGGTCTG-----CCGATGGGTATGCACCTGGCG--GGGGCTCCCTTCCTTCGGGAGACTGGTCCCTACT
AM779755.1	Prymnesium palpeb	CGGTCTG-----CCGATGGGTACGCACCTGGCG--GTCCGCTCCCTTCCTTCGGGAGACTGGCCCTACT
AM491014.2	Imantonia rotunda	CGGTCTG-----CCGATGGGTATGCACCTGACG--CGGGCTCCCTTCCTTCGGGAGACCGCTCCCTACT
AJ544117.1	Coccolithus braar	CGGTCTG-----CCGATGGGTATGCACCTGGCTT--GGCGCTCCCTTCCTTCGGGAGACTGGTCCGCT
AJ544118.1	Umbilicosphaera s	CGGTCTG-----CCGATGGGTATGCACCTGGCGT--CGGGCTCCCTTCCTTCGGGAGCTCTCCGCTGCT
AJ544119.1	Umbilicosphaera f	CGGTCTG-----CCGATGGGTATGCACCTGGCTT--GGCGCTCCCTTCCTTCGGGAGCTCTCCGCTGCT
AM491014.2	Calyptrosphaera r	CGGTCTG-----CCGATGGGTATGCACCTGGCAGT--CGGGCTCCCTTCCTTCGGGAGCTCTCCGCTGCT
HQ877901.1	Emiliana huxleyi	CGGTCTG-----CCGATGGGTATGCACCTGGCC--GGCGCTCCCTTCCTTCGGGAGCCGCGCTACT
AB183665.1	Gephyrocapsa ocea	CGGTCTG-----CCGATGGGTATGCACCTGGCC--GGCGCTCCCTTCCTTCGGGAGCCGCGCTACT
JF489945.1	Isochrysis galban	CGGTCTG-----CCGATGGGTACGCACCTGGCG--GGCGCTCCCTTCCTTCGGGAGACCGCCGCTACT
AM490974.2	Pleurochrysis ros	CGGTCTG-----CCGATGGGTATGCACCTGGCG--GAGTCGTCCTTCCTTCGGGAGACCGGGCCCTCT
AM491017.2	Chrysochromulina	CGGTCTG-----CCGATGGGTATGCACCTGGCTC--GGCGCTCCCTTCCTTCGGGAGACCGTCCCTACT
AM491019.2	Chrysochromulina	CGGTCTG-----CCGATGGGTACGCACCTGGTG--GGCGCTCCCTTCCTTCGGGAGACCGTTCTGTT
JF489961.1	Pavlova lutheri	GGGTCTG-----CCGATGGGTATGACTTGCCTCGTCCGGTCCAGTATGGCGTAGGTGCGTCCGCTCG
HQ912555.1	Thalassiosira pse	CGGTCTCACACTCAGTGCAGAACTCGTGTGT--C--CTGGCCATCCTTCGGGATATCCTGTTTGGC
JN091722.1	Pseudo-nitzschia	CGCCCTT--TGCTCTTGGATGATTGTGCTGTATG--GTCTGCCATGTTTGGGGGGAATCTGTGTGGC
JF790983.1	Cymbella cistulif	CGGC--T--GGGTCATTGA--CTTTTGTGTGCTG--GTCTGCCATCCTTCGGGTTGAATCTGTGTGGC
HQ912556.1	Phaeodactylum tri	GGCTCCG--CCTTAGTGGCCGTTGCTGTTTGTG--G--GTCCGCCATCCTTCGGGTTGAATCAGTGTGGC
AB546639.1	Triparma sp.	TGGCCGG--CCGTAACGGTTTGCCTGAAATGTTCTTCGCCATCCTTCGACGAACTAGTTTCCGCC
HQ912557.1	Bolidomonas pacif	TGGCCGG--CCGTAAGGTCGTGTCCGAAATGTTATTCCGCCATCCTTCGATGTAATCTGTGTGGC
EF165138.1	Ochromonas marina	CGGTCTG--CCTCAAACGAGG--TACGTACCTGTTGT--CTGAATCCATCCTCGGGGAGAAGCTTTTGGTC
EF165116.1	Synura petersenii	CGGTCTG--CCTCAAACGAGG--TACGTACCTGTTGT--CTGAATCCATCCTCGGGGAGAAGCTTTTGGTC
JQ281519.1	Mallomonas papill	CGGTCTG--CCTCAAACGAGG--TACGTACCTGTTGT--CTGAATCCATCCTCGGGGAGAAGCTTTTGGTC
EF432519.1	Paraphysomonas im	CGGTCTG--CCTCAAACGAGG--TACGTACCTGTTGT--CTGAATCCATCCTCGGGGAGAAGCTTTTGGTC
EF165146.1	Lagynion cf. ampu	CGGTCTG--CCTCAAACGAGG--TACGTACCTGTTGT--CTGAATCCATCCTCGGGGAGAAGCTTTTGGTC
AB096710.1	Dictyocha fibula	CGGTCTG--CCTCAAACGAGG--TACGTACCTGTTGT--CTGAATCCATCCTCGGGGAGAAGCTTTTGGTC
AB097408.1	Helicopedinella t	TGGCCGG--CTCCGCAANGGTCTGTGCATGGGTG--CCTTCGTCCTTCCTTCAGGGGGCCAGGCGNNGT
		.....
		640 650 660 670 680 690 700
AB183265.1	Prymnesium neolep	CTTAACTAAG CGGGGTCGGAAGTCGGAATTTTACTTTGAAAAATCAGAGTGTTCACAGCAGGCATT-





JF489961.1	Pavlova lutheri	AGTTAGGGGATCGAAGATGATCAGATACCGTCGTAGTCTTA-ACCATAAACCATGCCGACCAGGGATTGG
HQ912555.1	Thalassiosira pse	AGTTAGGGGATCGAAGATGATTAGATACCATCGTAGTCTTA-ACCATAAACCATGCCGACTCGGGATTGG
JN091722.1	Pseudo-nitzschia	AGTTAGGGGATCGAAGATGATTAGATACCATCGTAGTCTTA-ACCATAAACCATGCCGACAAGGGATTGG
JF790983.1	Cymbella cistulif	AGTTAGGGGATCGAAGATGATTAGATACCATCGTAGTCTTA-ACCATAAACCATGCCGACAAGGGATTGG
HQ912556.1	Phaeodactylum tri	AGTTAGGGGATCGAAGATGATTAGATACCATCGTAGTCTTA-ACCATAAACCATGCCGACAAGGGATTGG
AB546639.1	Triparma sp.	AGTTAGGGGATCGAAGATGATTAGATACCATCGTAGTCTTA-ACCATAAACCATGCCGACTAGGGATTGG
HQ912557.1	Bolidomonas pacif	AGTTAGGGGATCGAAGATGATTAGATACCATCGTAGTCTTA-ACCATAAACCATGCCGACTAGGGATTGG
EF165138.1	Ochromonas marina	AGTTAGGGGATCGAAGATGATTAGATACCATCGTAGTCTTA-ACCATAAACCATGCCGACTAGGGATTGG
EF165116.1	Synura petersenii	AGTTAGGGGATCGAAGATGATTAGATACCATCGTAGTCTTA-ACCATAAACCATGCCAACTAGGGATTGG
JQ281519.1	Mallomonas papill	AGTTAGGGGATCGAAGATGATTAGATACCATCGTAGTCTTA-ACCATAAACCATGCCGACTAGGGATTGG
EF432519.1	Paraphysomonas im	AATTAGGGGATCGAAGATGATTAGATACCATCGTAGTCTTA-ACCATAAACCATGCCGACTAGGGATTGG
EF165146.1	Lagynion cf. ampu	AGTTAGGGGATCGAAGATGATTAGATACCATCGTAGTCTTA-ACCATAAACCATGCCGACTAGGGATTGG
AB096710.1	Dictyocha fibula	AGTTAGGGGATCGAAGAAAGATTAGATACCTTCGTAGTCTTATACCATAAACCATGCCGACTAGGGATTGG
AB097408.1	Helicopedinella t	AGTTAGGGGATCGAAGAAAGATTAGATACCTTTGTANTCCTA-ACCATAAACCATGCCGACTCGGGATTGG

990 1000 1010 1020 1030 1040 1050

AB183265.1	Prymnesium neolep	CGGAAGTCCT-TCCTTGACTCCGTCGGCACCTTATGGGAAAC--TA-TA-TTTTAGGGTTCCGGGGGGAG
Prymnesium neolepis strain TMR		CGGAAGTCCT-TCCTTGACTCCGTCGGCACCTTATGGGAAAC--TA-TAGTCTTTGGGTTCCGGGGGGAG
FN551248.1	Chrysochromulina	CGGAAGTCCT-T-TTTGACTCCGTCGGCACCTTATGGGAAAC--TA-TAGTCTTTGGGTTCCGGGGGGAG
AM779755.1	Prymnesium palpeb	CGGATGTCCT-TCCTTGACTCCGTCAGCACCTTAAGGGAAAC--TA-TAGTCTTTGGGTTCCGGGGGGAG
AM491014.2	Imantonia rotunda	AGGATGTCCA-CTTTTGACTTCTCAGCACCTTACGGGAAAC--TA-AAGTCTTTGGGTTCCGGGGGGAG
AJ544117.1	Coccolithus braar	GGGTTGTACCATTTGTGCTCCCTCAGCACCTTCCGGGAAAC--TA-AAGTCTTTGGGTTCCGGGGGGAG
AJ544118.1	Umbilicosphaera s	GGGCTGTCCATTTGTGACTCCCTCAGCACCTTCCGGGAAAC--TA-AAGTCTTTGGGTTCCGGGGGGAG
AJ544119.1	Umbilicosphaera f	GGGCTGTCCCTTTGTGACTCCCTCAGCACCTTCCGGGAAAC--TA-AAGTCTTTGGGTTCCGGGGGGAG
AM491024.2	Calyptrosphaera r	GGGTTGTCCAATTTGTGACTCCCTCAGCACCTTCCGGGAAAC--TA-AAGTCTTTGGGTTCCGGGGGGAG
HQ877901.1	Emiliana huxleyi	AGGATGTCCCATTTGTGACTCCTTCAGCACCTTCCGGGAAAC--TA-AAGTCTTTGGGTTCCGGGGGGAG
AB183665.1	Gephyrocapsa ocea	AGGATGTCCCATTTGTGACTCCTTCAGCACCTTCCGGGAAAC--TA-AAGTCTTTGGGTTCCGGGGGGAG
JF489945.1	Isochrysis galban	AGGATGTCCGTTTGTGACTCCTTCAGCACCTTCCGGGAAAC--TA-AAGTCTTTGGGTTCCGGGGGGAG
AM490974.2	Pleurochrysis ros	AGGCTGTCCCTTTGTGACTCCTTCAGCACCTTCCGGGAAAC--TA-AAGTCTTTGGGTTCCGGGGGGAG
AM491017.2	Chrysochromulina	GGGATGTCCACATTTGACTCCTTCAGCACCTTCCGGGAAAC--TA-AAGTCTTTGGGTTCCGGGGGGAG
AM491019.2	Chrysochromulina	GGGATGTCCAT-TATTGACTCCTTCAGCACCTTACGGGAAAC--TA-AAGTCTTTGGGTTCCGGGGGGAG
JF489961.1	Pavlova lutheri	TGGTTGTCA--TCCTTGACTCAGCACCTTTCGAGAAAT-CA-GAGTCTTTGGGTTCCGGGGGGAG
HQ912555.1	Thalassiosira pse	C--GGTTGT--TTTTGACTCCGCCAGCACCTTATGAGAAAT-CA-AAGTCTTTGGGTTCCGGGGGGAG
JN091722.1	Pseudo-nitzschia	TGGAGTTTC--GTTTCGTCCTCAGCACCTTGTGAGAAAT-CATAAGTCTTTGGGTTCCGGGGGGAG
JF790983.1	Cymbella cistulif	TGGGGTTTC--GTTTCGTCCTCAGCACCTTATGAGAAAT-CA-CAAAGTCTTTGGGTTCCGGGGGGAG
HQ912556.1	Phaeodactylum tri	CGGGGTTTC--GTTACGTCCTCAGCACCTTATGAGAAAT-CA-CAAAGTCTTTGGGTTCCGGGGGGAG
AB546639.1	Triparma sp.	CGGTCGTTT--TTCCGACTCCGTCAGCACCTTATGAGAAAT-CA-AAGTCTTTGGGTTCCGGGGGGAG
HQ912557.1	Bolidomonas pacif	CGGTCGTTT--TTCTGACTCCGCCAGCACCTTATGAGAAAT-CA-AAGTCTTTGGGTTCCGGGGGGAG
EF165138.1	Ochromonas marina	TGGACGTTT-GTAACGACTCCATCAGCACCTTATGAGAAAT-CA-AAGTCTTTGGGTTCCGGGGGGAG
EF165116.1	Synura petersenii	TGGACGTTT-GTAACGACTCCATCAGCACCTTATGAGAAAT-CA-AAGTCTTTGGGTTCCGGGGGGAG
JQ281519.1	Mallomonas papill	TGGGCGTTT-GTAATGACTCCATCAGCACCTTATGAGAAAT-CA-AAGTCTTTGGGTTCCGGGGGGAG
EF432519.1	Paraphysomonas im	TGGACGTTT-GTACGACTCCATCAGCACCTTATGAGAAAT-CA-AAGTCTTTGGGTTCCGGGGGGAG
EF165146.1	Lagynion cf. ampu	TGGATGTTT-GTAATGACTCCTATCAGCACCTTATGAGAAAT-CA-AAGTCTTTGGGTTCCGGGGGGAG
AB096710.1	Dictyocha fibula	CGGTCGCTT-GTATAGGCTCCGTCAGCACCTTATGAGAAAT-CA-AAGTCTTTGGGTTCCGGGGGGAG
AB097408.1	Helicopedinella t	CGGTCGCTCCTAACCGGCTCCGTTCCAGCACCTTATGAGAAATCACAA-AGTCTTTGGGTTCCGGGGGGAG

1060 1070 1080 1090 1100 1110 1120

AB183265.1	Prymnesium neolep	TATTGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
Prymnesium neolepis strain TMR		TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
FN551248.1	Chrysochromulina	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
AM779755.1	Prymnesium palpeb	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
AM491014.2	Imantonia rotunda	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
AJ544117.1	Coccolithus braar	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
AJ544118.1	Umbilicosphaera s	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
AJ544119.1	Umbilicosphaera f	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
AM491024.2	Calyptrosphaera r	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
HQ877901.1	Emiliana huxleyi	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
AB183665.1	Gephyrocapsa ocea	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
JF489945.1	Isochrysis galban	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
AM490974.2	Pleurochrysis ros	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
AM491017.2	Chrysochromulina	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
AM491019.2	Chrysochromulina	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
JF489961.1	Pavlova lutheri	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
HQ912555.1	Thalassiosira pse	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
JN091722.1	Pseudo-nitzschia	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
JF790983.1	Cymbella cistulif	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
HQ912556.1	Phaeodactylum tri	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
AB546639.1	Triparma sp.	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA
HQ912557.1	Bolidomonas pacif	TATGGTCGCAAGGCTGAAACTTAAAGGAATTGACGGAAAGGCACACACAGGAGTGGAGCTGCGGCCTTAA

EF165138.1	Ochromonas marina	TATGGTCGCAAGGCTGAAACTTAAAGAAATTGACGGAAGGGCACCACCAGGAGTGGAGCCTCGGCCTAA
EF165116.1	Synura petersenii	TATGGTCGCAAGGCTGAAACTTAAAGAAATTGACGGAAGGGCACCACCAGGAGTGGAGCCTCGGCCTAA
JQ281519.1	Mallomonas papill	TATGGTCGCAAGGCTGAAACTTAAAGAAATTGACGGAAGGGCACCACCAGGAGTGGAGCCTCGGCCTAA
EF432519.1	Paraphysomonas im	TATGGTCGCAAGGCTGAAACTTAAAGAAATTGACGGAAGGGCACCACCAGGAGTGGAGCCTCGGCCTAA
EF165146.1	Lagynion cf. ampu	TATGGTCGCAAGGCTGAAACTTAAAGAAATTGACGGAAGGGCACCACCAGGAGTGGAGCCTCGGCCTAA
AB096710.1	Dictyocha fibula	TATGGTCGCAAGGCTGAAACTTAAAGAAATTGACGGAAGGGCACCACCAGGAGTGGAGCCTCGGCCTAA
AB097408.1	Helicopedinella t	TATGGTCGCAAGGCTGAAACTTAAAGAAATTGACGGAAGGGCACCACCAGGAGTGGAGCCTCGGCCTAA

		1130	1140	1150	1160	1170	1180	1190
AB183265.1	Prymnesium neolep	TTTGACTCAACACGGGGACACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
Prymnesium neolepis strain TMR		TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
FN551248.1	Chrysochromulina	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AM779755.1	Prymnesium palpeb	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AM491014.2	Imantonia rotunda	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AJ544117.1	Coccolithus braar	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AJ544118.1	Umbilicosphaera s	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AJ544119.1	Umbilicosphaera f	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AM491024.2	Calyptrosphaera r	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
HQ877901.1	Emiliana huxleyi	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AB183665.1	Gephyrocapsa ocea	TTTGACTCAACACGGGGAAACTTACCAGTCCAGCACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
JF489945.1	Isochrysis galban	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AM490974.2	Pleurochrysis ros	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AM491017.2	Chrysochromulina	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AM491019.2	Chrysochromulina	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
JF489961.1	Pavlova lutheri	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
HQ912555.1	Thalassiosira pse	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
JN091722.1	Pseudo-nitzschia	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
JF790983.1	Cymbella cistulif	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
HQ912556.1	Phaeodactylum tri	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AB546639.1	Triparma sp.	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
HQ912557.1	Bolidomonas pacif	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
EF165138.1	Ochromonas marina	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
EF165116.1	Synura petersenii	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
JQ281519.1	Mallomonas papill	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
EF432519.1	Paraphysomonas im	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
EF165146.1	Lagynion cf. ampu	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AB096710.1	Dictyocha fibula	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGAGCTCTTCT						
AB097408.1	Helicopedinella t	TTTGACTCAACACGGGGAAACTTACCAGTCCAG-ACATTGTGAGGATTGACAGTTTGAGG--TCTTCT						

		1200	1210	1220	1230	1240	1250	1260
AB183265.1	Prymnesium neolep	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
Prymnesium neolepis strain TMR		TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
FN551248.1	Chrysochromulina	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AM779755.1	Prymnesium palpeb	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AM491014.2	Imantonia rotunda	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AJ544117.1	Coccolithus braar	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AJ544118.1	Umbilicosphaera s	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AJ544119.1	Umbilicosphaera f	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AM491024.2	Calyptrosphaera r	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
HQ877901.1	Emiliana huxleyi	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AB183665.1	Gephyrocapsa ocea	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
JF489945.1	Isochrysis galban	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AM490974.2	Pleurochrysis ros	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AM491017.2	Chrysochromulina	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AM491019.2	Chrysochromulina	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
JF489961.1	Pavlova lutheri	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
HQ912555.1	Thalassiosira pse	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
JN091722.1	Pseudo-nitzschia	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
JF790983.1	Cymbella cistulif	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
HQ912556.1	Phaeodactylum tri	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AB546639.1	Triparma sp.	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
HQ912557.1	Bolidomonas pacif	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
EF165138.1	Ochromonas marina	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
EF165116.1	Synura petersenii	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
JQ281519.1	Mallomonas papill	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
EF432519.1	Paraphysomonas im	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
EF165146.1	Lagynion cf. ampu	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AB096710.1	Dictyocha fibula	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						
AB097408.1	Helicopedinella t	TGATTCGATGGGTGGTGGTGCATGGCCGTTCTTAGTTGGTGGAGTGATTTGCTGGTTAATTCGGTTAAC						

		1270	1280	1290	1300	1310	1320	1330
AB183265.1	Prymnesium neolep	G - AACGAGACCTTAGCCTATTTAAATAGT	GGCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
Prymnesium neolepis strain TMR		G - AACGAGACCTTAGCCTATTTAAATAGT	GGCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
FN551248.1	Chrysochromulina	G - AACGAGACCTTAGCCTATTTAAATAGT	GGCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AM779755.1	Prymnesium palpeb	G - AACGAGACCTTAGCCTATTTAAATAGT	GGCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AM491014.2	Imantonia rotunda	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-T	TCACCTCTTAGAGG	
AJ544117.1	Coccolithus braar	G - AACGAGACCTTAGCCTATTTAAATAGT	GGCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AJ544118.1	Umbilicosphaera s	G - AACGAGACCTTAGCCTATTTAAATAGT	GGCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AJ544119.1	Umbilicosphaera f	G - AACGAGACCTTAGCCTATTTAAATAGT	GGCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AM491024.2	Calyptrosphaera r	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
HQ877901.1	Emiliana huxleyi	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AB183665.1	Gephyrocapsa ocea	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
JF489945.1	Isochrysis galban	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AM490974.2	Pleurochrysis ros	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AM491017.2	Chrysochromulina	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AM491019.2	Chrysochromulina	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
JF489961.1	Pavlova lutheri	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
HQ912555.1	Thalassiosira pse	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
JN091722.1	Pseudo-nitzschia	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
JF790983.1	Cymbella cistulif	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
HQ912556.1	Phaeodactylum tri	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AB5446639.1	Triparma sp.	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
HQ912557.1	Bolidomonas pacif	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
EF165138.1	Ochromonas marina	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
EF165116.1	Synura petersenii	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
JQ281519.1	Mallomonas papill	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
EF432519.1	Paraphysomonas im	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
EF165146.1	Lagynion cf. ampu	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AB096710.1	Dictyocha fibula	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	
AB097408.1	Helicopedinella t	G - AACGAGACCTTAGCCTATTTAAATAGT	GTCGCG	AACACCTTGTG	GCG	-G	GCACCTCTTAGAGG	

		1340	1350	1360	1370	1380	1390	1400
AB183265.1	Prymnesium neolep	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
Prymnesium neolepis strain TMR		GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
FN551248.1	Chrysochromulina	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AM779755.1	Prymnesium palpeb	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AM491014.2	Imantonia rotunda	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AJ544117.1	Coccolithus braar	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AJ544118.1	Umbilicosphaera s	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AJ544119.1	Umbilicosphaera f	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AM491024.2	Calyptrosphaera r	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
HQ877901.1	Emiliana huxleyi	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AB183665.1	Gephyrocapsa ocea	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
JF489945.1	Isochrysis galban	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AM490974.2	Pleurochrysis ros	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AM491017.2	Chrysochromulina	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AM491019.2	Chrysochromulina	GACAACTT	GTCTTCAACAAGT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
JF489961.1	Pavlova lutheri	GACTATCG	GATCCAAACCGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
HQ912555.1	Thalassiosira pse	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
JN091722.1	Pseudo-nitzschia	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
JF790983.1	Cymbella cistulif	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
HQ912556.1	Phaeodactylum tri	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AB5446639.1	Triparma sp.	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
HQ912557.1	Bolidomonas pacif	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
EF165138.1	Ochromonas marina	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
EF165116.1	Synura petersenii	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
JQ281519.1	Mallomonas papill	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
EF432519.1	Paraphysomonas im	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
EF165146.1	Lagynion cf. ampu	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AB096710.1	Dictyocha fibula	GACGTTCA	TTCACAAGAT	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	
AB097408.1	Helicopedinella t	GACTGTGT	GAGACTATCACAC	GGAAGTTT	GAGGCAATAACAGGTC	TGTGATGCCCTTAGAGT	GTTCTGGG	

		1410	1420	1430	1440	1450	1460	1470
AB183265.1	Prymnesium neolep	CCGCACGCGG	TACACTGATGC	CACTCAACGAGTCTC	-----	GCTTGCCGAGAGG	TCCGGCAAACCTT	
Prymnesium neolepis strain TMR		CCGCACGCGG	TACACTGATGC	CACTCAACGAGTCTC	-----	GCTTGCCGAGAGG	TCCGGCAAACCTT	
FN551248.1	Chrysochromulina	CCGCACGCGG	TACACTGATGC	CACTCAACGAGTCTC	-----	GCTTGCCGAGAGG	TCCGGCAAACCTT	
AM779755.1	Prymnesium palpeb	CCGCACGCGG	TACACTGATGC	CACTCAACGAGTCTC	-----	GCTTGCCGAGAGG	TCCGGCAAACCTT	

AM491014.2	Imantonia rotunda	CCGCACGCGCGCTACACTGATGCACCTCAACGAGTCTT---CGCCTTGACCGAGAGGTCCGGGAAACCTT
AJ544117.1	Coccolithus braar	CCGCACGCGCGCTACACTGATGCACCTCAACGAGTTCC--T--TCCTTGGCCGACAGGTCCGGGTAACTT
AJ544118.1	Umbilicosphaera s	CCGCACGCGCGCTACACTGATGCACCTCAACGAGTTTT--TCGTCTTGGCCGACAGGTCCGGGTAACTT
AJ544119.1	Umbilicosphaera f	CCGCACGCGCGCTACACTGATGCACCTCAACGAGTTTT--ACATCCTTGGCCGACAGGTCCGGGTAACTT
AM491024.2	Calyptrosphaera r	CCGCACGCGCGCTACACTGATGCACCTCAACGAGTTTTCATCTGTCTTGGCCGAGAGGTCCGGGTAACTT
HQ877901.1	Emiliana huxleyi	CCGCACGCGCGCTACACTGATGCACCTCAACGAGTCTA--TCACCTTGACCGAGAGGTCCGGGTAACTT
AB183665.1	Gephyrocapsa ocea	CCGCACGCGCGCTACACTGATGCACCTCAACGAGTCTA--TCACCTTGACCGAGAGGTCCGGGTAACTT
JF489945.1	Isochrysis galban	CCGCACGCGCGCTACACTGATGCATTAGCGAGTCTG--CTCCCTTGACCGAGAGGTCCGGGTAACTT
AM490974.2	Pleurochrysis ros	CCGCACGCGCGCTACACTGATGCATTAGCGAGTCTC--TTCCCTTGGCCGAGAGGTCCGGGTAACTT
AM491017.2	Chrysochromulina	CCGCACGCGCGCTACACTGATGCACCTCAACGAGTCTC---CACCTTGACCGAAA GTCCGGGAAATC-T
AM491019.2	Chrysochromulina	CCGCACGCGCGCTACACTGATGCACCTCAACGAGTCTC---CACCTTGACCGAAAAGGTCCGGGAAATC-T
JF489961.1	Pavlova lutheri	CCGCA--CGCGCTACACTGACGCATTATCGAGTCTG---ACCTGCATCGAAAGGTGTGGGC-ATCTG
HQ912555.1	Thalassiosira pse	CCGCACGCGCGCTACACTGATGCACCTCAACGAGCATA--TAACTTGGCCGAGAGGCTCCGGGTAACTT
JN091722.1	Pseudo-nitzschia	CCGCACGCGCGCTACACTGATGCATTCAACGA--GTT--CTACCTTGGCCGAGAGGCTCCGGGTAACTT
JF790983.1	Cymbella cistulif	CCGCACGCGCGCTACACTGATGCATTCAACGA--GTT--CTTCTTGGCCGAGAGGCTCCGGGTAACTT
HQ912556.1	Phaeodactylum tri	CCGCACGCGCGCTACACTGATGCATTCAACGAGTGT--TTTCTTGGCCGAGAGGCTCCGGGTAACTT
AB546639.1	Triparma sp.	CCGCACGCGCGCTACACTGATGCATTCAACGAGTTTA--TAACTTGGCCGAGAGGCTCCGGGTAACTT
HQ912557.1	Bolidomonas pacif	CCGCACGCGCGCTACACTGATGCATTCAACGAGTTTA--TAACTTGTCTCGAGAGGCTCCGGGTAACTT
EF165138.1	Ochromonas marina	CCGCACGCGCGCTACACTGATGCATTCAACGAGT--TTTCTCGTCCGAAAGGTCCGGGTAACTT
EF165116.1	Synura petersenii	CCGCACGCGCGCTACACTGACACACGCAACGAGT----CTTCTTGTCCGAAAGGTCCGGGTAACTT
JQ281519.1	Mallomonas papill	CCGCACGCGCGCTACACTGACACACGCAACGAGT----CTTCTTGTCCGAAAGGTCCGGGTAACTT
EF432519.1	Paraphysomonas im	CCGCACGCGCGCTACAATGATACACGCAACGAGT--CCACCTTGTCCGAAAGGTCCGGGTAACTT
EF165146.1	Lagynion cf. ampu	CCGCACGCGCGCTACACTGATGCATTCAACGAGC----TATCTTGGCCGAAAGGTCCGGGTAACTT
AB096710.1	Dictyocha fibula	CTGCACGCGCGCTACACTGATGCATTCAACGAGTTT--AGACCTTGGCTGAGAGGCTCCGGGTAACTT
AB097408.1	Helicopedinella t	CCGCACGCGCGCTACACTGATGCGTCAACGAGTATA--GAACCTTGGCCGGGAGGCTCCGGGTAACTT

1480 1490 1500 1510 1520 1530 1540

AB183265.1	Prymnesium neolep	TTGAAC TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
Prymnesium neolepis strain TMR		TTGAAC TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
FN551248.1	Chrysochromulina	TTGAAC TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
AM779755.1	Prymnesium palpeb	TTGAAC TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
AM491014.2	Imantonia rotunda	TTGAAC TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
AJ544117.1	Coccolithus braar	TTGAAA TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
AJ544118.1	Umbilicosphaera s	TTGAAA TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
AJ544119.1	Umbilicosphaera f	TTGAAA TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
AM491024.2	Calyptrosphaera r	TTGAAA TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
HQ877901.1	Emiliana huxleyi	TTGAAA TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
AB183665.1	Gephyrocapsa ocea	TTGAAA TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
JF489945.1	Isochrysis galban	GTGAAC TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
AM490974.2	Pleurochrysis ros	GTGAAC TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAAGCG
AM491017.2	Chrysochromulina	GCGAAC TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAGGCG
AM491019.2	Chrysochromulina	TTAAAC TTGCAT CGTGAT GGGGATAGATTATTGCAACTATTTAATCTTCAACGAGGAATTCCTAGTAGGCG
JF489961.1	Pavlova lutheri	TTGAACTTGCATCGTGATGGGGATAGATTATTGCAACTTTAATCTTCAACGAGGAATTCCTAGTAAGCG
HQ912555.1	Thalassiosira pse	GTTAACTGCATCGTGATAGGGATAGATTATTGCAACTATTTAATCTTGAACGAGGAATTCCTAGTAATCG
JN091722.1	Pseudo-nitzschia	TTGAAC TTGCAT CGTGATAGGGATAGATTATTGCAACTATTTAATCTTGAACGAGGAATTCCTAGTAAACG
JF790983.1	Cymbella cistulif	TTGAAC TTGCAT CGTGATAGGGATAGATTATTGCAACTATTTAATCTTGAACGAGGAATTCCTAGTAAACG
HQ912556.1	Phaeodactylum tri	TTAAAC TTGCAT CGTGATAGGGATAGATTATTGCAACTATTTAATCTTGAACGAGGAATTCCTAGTAAACG
AB546639.1	Triparma sp.	TTAAAC TTGCAT CGTGATAGGGATAGATTATTGCAACTATTTAATCTTGAACGAGGAATTCCTAGTAAACG
HQ912557.1	Bolidomonas pacif	TTAAAC TTGCAT CGTGATAGGGATAGATTATTGCAACTATTTAATCTTGAACGAGGAATTCCTAGTAAACG
EF165138.1	Ochromonas marina	GTAATGTGTGTCGTGATAGGGATAGATTNNNGCAACTATTTAATCTTGAACGAGGAATTCCTAGTAAATG
EF165116.1	Synura petersenii	GTAATGTGTGTCGTGATAGGGATAGATTATTGCAACTATTTAATCTTGAACGAGGAATTCCTAGTAAATG
JQ281519.1	Mallomonas papill	GT-AAATGTGTGTCGTGATAGGGATAGATTATTGCAACTATTTAATCTTGAACGAGGAATTCCTAGTAAATG
EF432519.1	Paraphysomonas im	GTAATGTGTGTCGTGATAGGGATAGATTTTTGCAACTCTGAACTTTGAACGAGGAATTCCTAGTAAATG
EF165146.1	Lagynion cf. ampu	GTAATGTGTGTCGTGATAGGGATAGATTATTGCAACTATTTAATCTTGAACGAGGAATTCCTAGTAAATG
AB096710.1	Dictyocha fibula	GTGAAC TTGCAT CGTGATAGGGATTGATTGCAACTATTTATCATGAACGAGGAATTCCTAGTAAACG
AB097408.1	Helicopedinella t	GTGAACGCGCATCGTGATAG

1550 1560 1570 1580 1590 1600 1610

AB183265.1	Prymnesium neolep	CATGTCATCAGCGTGCCTGATTACGTCCTCGCCCTTTGTACACACCCGCCGTCGCTCCTACCATTGAA
Prymnesium neolepis strain TMR		CATGTCATCAGCGTGCCTGATTACGTCCTCGCCCTTTGTACACACCCGCCGTCGCTCCTACCATTGAA
FN551248.1	Chrysochromulina	CATGTCATCAGCGTGCCTGATTACGTCCTCGCCCTTTGTACACACCCGCCGTCGCTCCTACCATTGAA
AM779755.1	Prymnesium palpeb	CATGTCATCAGCGTGCCTGATTACGTCCTCGCCCTTTGTACACACCCGCCGTCGCTCCTACCATTGAA
AM491014.2	Imantonia rotunda	CATGTCATCAGCGTGCCTGATTACGTCCTCGCCCTTTGTACACACCCGCCGTCGCTCCTACCATTGAA
AJ544117.1	Coccolithus braar	CATGTCATCAGCGTGCCTGATTACGTCCTCGCCCTTTGTACACACCCGCCGTCGCTCCTACCATTGAA
AJ544118.1	Umbilicosphaera s	CATGTCATCAGCGTGCCTGATTACGTCCTCGCCCTTTGTACACACCCGCCGTCGCTCCTACCATTGAA
AJ544119.1	Umbilicosphaera f	CATGTCATCAGCGTGCCTGATTACGTCCTCGCCCTTTGTACACACCCGCCGTCGCTCCTACCATTGAA
AM491024.2	Calyptrosphaera r	CATGTCATCAGCGTGCCTGATTACGTCCTCGCCCTTTGTACACACCCGCCGTCGCTCCTACCATTGAA
HQ877901.1	Emiliana huxleyi	TGTGTCATCAGCGCACGTTGATTACGTCCTCGCCCTTTGTACACACCCGCCGTCGCTCCTACCATTGAA
AB183665.1	Gephyrocapsa ocea	TGTGTCATCAGCGCACGTTGATTACGTCCTCGCCCTTTGTACACACCCGCCGTCGCTCCTACCATTGAA

JF489945.1  Isochrysis galban	TGTGTCATCAGCGCACGTTGATTACGTC
AM490974.2  Pleurochrysis ros	CATGTCATCAGCGTGCCTGATTACGTC
AM491017.2  Chrysochromulina	CATGTCATCAGCGTGCCTGATTACGTC
AM491019.2  Chrysochromulina	CATGTCATCAGCGTGCCTGATTACGTC
JF489961.1  Pavlova lutheri	TGAGTCATCAGCTCGCGTTGATTACGTC
HQ912555.1  Thalassiosira pse	CAGATCATCAATCTGCAATGATTACGTC
JN091722.1  Pseudo-nitzschia	CAGATCATCAATCTGCAATGATTACGTC
JF790983.1  Cymbella cistulif	CAGTTTCATCAAACTGCATTGGTTACGTC
HQ912556.1  Phaeodactylum tri	CAGATCATCAATCTGCAATGATTACGTC
AB546639.1  Triparma sp.	CAGTTTCATCAGACTGCATTGATTACGTC
HQ912557.1  Bolidomonas pacif	CAGTTTCATCAGACTGCATTGATTACGTC
EF165138.1  Ochromonas marina	CGAGTCATCAGCTCGCGTTGATTACGTC
EF165116.1  Synura petersenii	CGAGTCATCAGCTCGCGTTGATTACGTC
JQ281519.1  Mallomonas papill	CGAGTCATCAGCTCGCGTTGATTACGTC
EF432519.1  Paraphysomonas im	CGAGTCATCAGCTCGCGTTGATTACGTC
EF165146.1  Lagynion cf. ampu	CGAGTCATCAGCTCGCGTTGATTACGTC
AB096710.1  Dictyocha fibula	TGAGTCATCAGCTCACATTGATTACGTC
AB097408.1  Helicopedinella t	-----

	1620	1630	1640	1650	1660	1670	1680
AB183265.1  Prymnesium neolep	.... .... .... .... .... .... .... .... .... .... .... .... .... ....	TGATCCGGTGAGGCCCCCGGACTGTGGCAATGCAGGTGGTTCCGCAATCCCGGATGCCCGGGGAAGCTGTC	TGATCCGGTGAGGCCCCCGGACTGTGGCAATGCAGGTGGTTCCGCAATCCCGGATGCCCGGGGAAGCTGTC	TGATCCGGTGAGGCCCCCGGACTGTGGCAATGCAGGTGGTTCCGCAATCCCGGATGCCCGGGGAAGCTGTC	TGATCCGGTGAGGCCCCCGGACTGTGGCAATGCAGGTGGTTCCGCAATCCCGGATGCCCGGGGAAGCTGTC	TGATCCGGTGAGGCCCCCGGACTGTGGCAATGCAGGTGGTTCCGCAATCCCGGATGCCCGGGGAAGCTGTC	TGATCCGGTGAGGCCCCCGGACTGTGGCAATGCAGGTGGTTCCGCAATCCCGGATGCCCGGGGAAGCTGTC
Prymnesium neolepis strain TMR							
FN551248.1  Chrysochromulina							
AM779755.1  Prymnesium palpeb							
AM491014.2  Imantonia rotunda							
AJ544117.1  Coccolithus braar							
AJ544118.1  Umbilicosphaera s							
AJ544119.1  Umbilicosphaera f							
AM491024.2  Calyptrosphaera r							
HQ877901.1  Emiliana huxleyi							
AB183665.1  Gephyrocapsa ocea							
JF489945.1  Isochrysis galban							
AM490974.2  Pleurochrysis ros							
AM491017.2  Chrysochromulina							
AM491019.2  Chrysochromulina							
JF489961.1  Pavlova lutheri							
HQ912555.1  Thalassiosira pse							
JN091722.1  Pseudo-nitzschia							
JF790983.1  Cymbella cistulif							
HQ912556.1  Phaeodactylum tri							
AB546639.1  Triparma sp.							
HQ912557.1  Bolidomonas pacif							
EF165138.1  Ochromonas marina							
EF165116.1  Synura petersenii							
JQ281519.1  Mallomonas papill							
EF432519.1  Paraphysomonas im							
EF165146.1  Lagynion cf. ampu							
AB096710.1  Dictyocha fibula							
AB097408.1  Helicopedinella t							

AB183265.1  Prymnesium neolep	....
Prymnesium neolepis strain TMR	CAAA
FN551248.1  Chrysochromulina	CAAA
AM779755.1  Prymnesium palpeb	CAAA
AM491014.2  Imantonia rotunda	CAAA
AJ544117.1  Coccolithus braar	CAAA
AJ544118.1  Umbilicosphaera s	CAAA
AJ544119.1  Umbilicosphaera f	CAAA
AM491024.2  Calyptrosphaera r	CAAA
HQ877901.1  Emiliana huxleyi	CGAA
AB183665.1  Gephyrocapsa ocea	CGAA
JF489945.1  Isochrysis galban	CGAA
AM490974.2  Pleurochrysis ros	CAAA
AM491017.2  Chrysochromulina	CAAA
AM491019.2  Chrysochromulina	CAAA
JF489961.1  Pavlova lutheri	CAAA
HQ912555.1  Thalassiosira pse	CAAA
JN091722.1  Pseudo-nitzschia	TAAA

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|JF790983.1| Cymbella cistulif TAAA
|HQ912556.1| Phaeodactylum tri TAAA
|AB5446639.1| Triparma sp. TAAA
|HQ912557.1| Bolidomonas pacif TAAA
|EF165138.1| Ochromonas marina TAAA
|EF165116.1| Synura petersenii TAAA
|JQ281519.1| Mallomonas papill TAAA
|EF432519.1| Paraphysomonas im TAAA
|EF165146.1| Lagynion cf. ampu TAAA
|AB096710.1| Dictyocha fibula CAAA
|AB097408.1| Helicopedinella t ----
```

### 3. *rbcL* alignment.

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          10          20          30          40          50          60          70
Prymnesium neolepis TMR5 RbcL  GATCCTGATTACGTTATCAAGGAAACTGACATCTTAGCTCTATTCCGTTGTACTCCACAACCAGGTGTTG
Prymnesium neolepis PZ241 RbcL  GATCCTGATTACGTTATCAAGGAAACTGACATCTTAGCTCTATTCCGTTGTACTCCACAACCAGGTGTTG
Prymnesium neolepis VF28 RbcL  GATCCTGATTACGTTATCAAGGAAACTGACATCTTAGCTCTATTCCGTTGTACTCCACAACCAGGTGTTG
gi|76880158|dbj|AB183266.1| Hy  GATCCTGATTACGTTATCAAGGAAACTGACATCTTAGCTCTATTCCGTTGTACTCCACAACCAGGTGTTG
gi|12082155|dbj|AB043697.1| Ch  GATCCTGATTACGTTATTAAGGAAACTGACGTTTGTAGCTCTATTCCGTTGTACTCCACAACCAGGTGTTG
gi|8099172|dbj|AB043632.1| Chr  GATCCTGATTACGCAATCAAGGAAACTGATATCTTAGCATTTATTCCGTTGTACTCCTCAACCAGGTGTTG
gi|12082157|dbj|AB043698.1| Pr  GATCCTGATTACGTTATTAAGGAAACTGATATCTTAGCTCTATTCCGTTGTACGCCACAACCAGGTGTTG
gi|12082151|dbj|AB043695.1| Ch  GATCCTGATTACGTTATCAAGGAAACTGATCTTCTAGCTCTATTCCGTTGTACTCCACAACCAGGTGTAG
gi|12082153|dbj|AB043696.1| Im  GATCCTGATTACGTTATCAAGGAAACTGATCTTCTAGCACTATTCCGTTGTACTCCACAACCAGGTGTTG
gi|12082149|dbj|AB043694.1| Ch  GATCCGATTACGTTATCAAGGAAACTGATATCTTAGCTCTATTCCGTTGTACTCCACAACCAGGTGTAG
gi|12082159|dbj|AB043699.1| Pl  GATCCTGATTATGTTATTAAGGAACTGACATCTTAGCTCTATTCCGTTGTACACCACAACCAGGAGTTG
gi|8099166|dbj|AB043629.1| Umb  GATCCAGACTACGTTCAAGGAAACTGATCTTCTAGCATTTATTCCGTTGTACTCCACAACCAGGTGTTG
gi|456605|dbj|D11140.1| PEHRBCL  GATCCAGAATATTCAAATTAAGGAAACTGATATTTTAGCGCTTTCCGTTGTACACCTCAACCAGGTGTTG
gi|436905916|gb|JX292160.1| Em  GCTGTTGAATACGTAATCAAGGAAACTGATCTTCTAGCACTATTCCGTTGTAAATCCCTTACGCTAAAATGG
gi|685217|dbj|D45844.1| GEOCPRB  GATCCAGAATATGTAATCAAGGAACTGATATCTTAGCACTATTCCGTTGTACACCTCAACCAGGTGTAG
gi|356472750|gb|HQ656833.1| Co  GATCCAGAATATGCAATTAAGGAAACTGATATCTTAGCACTATTCCGTTGTACTCCACAACCAGGTGTTG
gi|12082137|dbj|AB043688.1| Pl  GATCCAGAATATTCAAATTAAGGAAACTGATATCTTAGCACTATTCCGTTGTACACCTCAACCAGGTGTTG
gi|356472744|gb|HQ656830.1| Pa  GATCCTGACTACGTAATCAAGGAAACTGATGTTCTAGCAATGTTTCCGTTGTACTCCACAACCAGGTGTTG
gi|12082141|dbj|AB043690.1| Ca  GATCCAGAGTACTCGATCAAGGAAACTGATCTTCTAGCATTTATTCCGTTGTACTCCACAACCAGGTGTTG
gi|12082147|dbj|AB043693.1| Is  GATCCAGAATACGCAATTAAGGAACTGATCTACTAGCACTGTTCCGTTGTACACCACAACCAGGTGTAG
gi|12082145|dbj|AB043692.1| He  GATCCAGAGTACACTATTAAGGAACTGATCTACTAGCACTATTCCGTTGTACTCCACAACCAGGAGTTG
gi|12082163|dbj|AB043701.1| Ex  GATCCTGACTACGCAATTAAGGAAACTGATGTTCTAGCAATGTTCCGTTCTTACACCTCAACCAGGTGTAG
gi|8099174|dbj|AB043633.1| Pav  GATCCTGACTACGCTATTAAGGAGACTGATGTTCTAGCAATGTTCCGTTCTTACACCTCAACCAGGTGTAG

          80          90          100          110          120          130          140
Prymnesium neolepis TMR5 RbcL  ACCCTGTAGAAGCTGCTGCAGCTCTTCTGGTGAGTCTTCAACAGCAACATGGACTGTTGTATGGACAGA
Prymnesium neolepis PZ241 RbcL  ACCCTGTAGAAGCTGCTGCAGCTCTTCTGGTGAGTCTTCAACAGCAACATGGACTGTTGTATGGACAGA
Prymnesium neolepis VF28 RbcL  ACCCTGTAGAAGCTGCTGCAGCTCTTCTGGTGAGTCTTCAACAGCAACATGGACTGTTGTATGGACAGA
gi|76880158|dbj|AB183266.1| Hy  ACCCTGTAGAAGCTGCTGCAGCTCTTCTGGTGAGTCTTCAACAGCAACATGGACTGTTGTATGGACAGA
gi|12082155|dbj|AB043697.1| Ch  ACCCTGTAGAAGCTGCTGCAGCTCTTCTGGTGAGTCTTCAACAGCAACATGGACTGTTGTATGGACGGA
gi|8099172|dbj|AB043632.1| Chr  ACCCTGTAGAAGCTGCTGCAGCTCTTCTGGTGAGTCTTCAACTGCAACATGGACTGTTGTATGGACGGA
gi|12082157|dbj|AB043698.1| Pr  ATCCTGTAGAAGCTGCTGCAGCTCTTCTGGTGAATCTTCAACAGCAACATGGACTGTTGTATGGACGGA
gi|12082151|dbj|AB043695.1| Ch  ACCCAGTAGAGCTGCAGCACTAGCTGGTGAGTCTTCAACTGCAACATGGACTGTTGTATGGACAGA
gi|12082153|dbj|AB043696.1| Im  ACCCAGTTGAAGCTGCTGCTGCTTTCAGGTTGAATCTTCAACAGCAACGTTGGACTGTTGTATGGACAGA
gi|12082149|dbj|AB043694.1| Ch  ACCCTGTAGAAGCTGCAGCAGCCCTTCTGGTGAGTCTTCAACTGCAACATGGACTGTTGTATGGACAGA
gi|12082159|dbj|AB043699.1| Pl  ACCCTGTAGAAGCTGCAGCAGCTTCTGGTGAATCGTCTACAGCAACATGGACTGTTGTATGGACAGA
gi|8099166|dbj|AB043629.1| Umb  ACCCTGTAGAAGCTGCTGCCGCTAGCTGGTGAGTCTGCGCAGCAACATGGACTGTTGTATGGACGGA
gi|456605|dbj|D11140.1| PEHRBCL  GTTACTGGGATCCAGAAATATGTAATCAAGGAACTGATATCTTAGCACTATTCCGTTGTACACCTCAACC
gi|436905916|gb|JX292160.1| Em  ATCCAGTTGAAGCGGCTGCTGCAGTACAGGTTGAGTCTTCTACTGCTACATGGACTGTAGTATGGACGGA
gi|685217|dbj|D45844.1| GEOCPRB  ACCCTGTAGAAGCTGCAGCTGCATTAAGTCTGGTGAGTCTTCAACAGCAACATGGACTGTAGTATGGACTGA
gi|356472750|gb|HQ656833.1| Co  ACCCTGTAGAAGCTGCTGCTGCAGTACAGGTTGAGTCTTCAACAGCAACATGGACTGTAGTATGGACTGA
gi|12082137|dbj|AB043688.1| Pl  ACCCTGTAGAAGCTGCTGCTGCAGTACAGGTTGAGTCTTCAACAGCAACATGGACTGTAGTATGGACTGA
gi|356472744|gb|HQ656830.1| Pa  ACCCTGTAGAAGCTGCTGCTGCAGTACAGGTTGAGTCTTCAACAGCAACATGGACTGTAGTATGGACTGA
gi|12082141|dbj|AB043690.1| Ca  ACCCTGTAGAAGCTGCAGCTGCTTTCAGTGGTGAGTCTTCAACAGCAACATGGACTGTAGTATGGACTGA
gi|12082147|dbj|AB043693.1| Is  ACCCAGTAGAAGCTGCAGCTGCATTCGAGGTTGAATCTTCAACTGCTACATGGACTGTTGTATGGACAGA

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Prymnesium neolepis TMR5 RbcL  
 Prymnesium neolepis PZ241 RbcL  
 Prymnesium neolepis VF28 RbcL  
 gi|76880158|dbj|AB183266.1| Hy  
 gi|12082155|dbj|AB043697.1| Ch  
 gi|8099172|dbj|AB043632.1| Chr  
 gi|12082157|dbj|AB043698.1| Pr  
 gi|12082151|dbj|AB043695.1| Ch  
 gi|12082153|dbj|AB043696.1| Im  
 gi|12082149|dbj|AB043694.1| Ch  
 gi|12082159|dbj|AB043699.1| Pl  
 gi|8099166|dbj|AB043629.1| Umb  
 gi|456605|dbj|D11140.1| PEHRBCL  
 gi|436905916|gb|JX292160.1| Em  
 gi|685217|dbj|D45844.1|GEOCPRB  
 gi|356472750|gb|HQ656833.1| Co  
 gi|12082137|dbj|AB043688.1| Pl  
 gi|356472744|gb|HQ656830.1| Pa  
 gi|12082141|dbj|AB043690.1| Ca  
 gi|12082147|dbj|AB043693.1| Is  
 gi|12082145|dbj|AB043692.1| He  
 gi|12082163|dbj|AB043701.1| Ex  
 gi|8099174|dbj|AB043633.1| Pav

.....

**GTGAAGTTAAAGGTCACCTAACCAACTGCGGCAACAATGGAAGATATGTACGAACGTGCTAACTT  
 ATCTAGGTTTCAGTTATTGTAATGATTGACCTTGTAAATGGTTATACAGCTATCCAAATCAATGGGTAAGTG  
 ATCTTGGATCTATCATTGTAATGATTGACCTTGTAAATGGTTATACAGCTATCCAGAGTATGAGTAACTG  
 ATTTAGGTTTCAGTTATTGTTATGATTGACCTTGTGATTGGTTATACAGCAATCCAAATCGATGGCTATCTG  
 AGCTAGGTTCAATCATTGTTATGATTGACCTTGTAAATGGATACACTGTATCCAAACAATGGGTTACTG  
 AGCTTGGTTCGTAAATGTTGATGATCGACCTTGTAAATGGTTATACAGCTATCCAAATCAATGGCTAAATG  
 AGTTAGGTTTCAGTTATTGTTATGATCGACCTTGTAAATGGTTATACAGCTATCCAGCAATGGGTCGTTG  
 AACTTGGTTCAGTTATTGTAATGATTGACCTTGTAAATGGTTACACGGCTATCCAAATCAATGGGTAAGTG  
 ATCTAGGTTCAATCATTGTTATGATTGACCTTGTAAATGGATACACTGTATCCAAACAATGGCTAAGTG  
 GCCTTGGTTCGATCATTACAATGATTGACCTTGTAAATGGATACACTGTATCCAAATCAATGGCTATCTG**

780 790 800 810 820 830 840

Prymnesium neolepis TMR5 RbcL  
 Prymnesium neolepis PZ241 RbcL  
 Prymnesium neolepis VF28 RbcL  
 gi|76880158|dbj|AB183266.1| Hy  
 gi|12082155|dbj|AB043697.1| Ch  
 gi|8099172|dbj|AB043632.1| Chr  
 gi|12082157|dbj|AB043698.1| Pr  
 gi|12082151|dbj|AB043695.1| Ch  
 gi|12082153|dbj|AB043696.1| Im  
 gi|12082149|dbj|AB043694.1| Ch  
 gi|12082159|dbj|AB043699.1| Pl  
 gi|8099166|dbj|AB043629.1| Umb  
 gi|456605|dbj|D11140.1| PEHRBCL  
 gi|436905916|gb|JX292160.1| Em  
 gi|685217|dbj|D45844.1|GEOCPRB  
 gi|356472750|gb|HQ656833.1| Co  
 gi|12082137|dbj|AB043688.1| Pl  
 gi|356472744|gb|HQ656830.1| Pa  
 gi|12082141|dbj|AB043690.1| Ca  
 gi|12082147|dbj|AB043693.1| Is  
 gi|12082145|dbj|AB043692.1| He  
 gi|12082163|dbj|AB043701.1| Ex  
 gi|8099174|dbj|AB043633.1| Pav

.....

**CGCAAGAGATCTAGGTTTCAGTTATTGTAATGATTGACCTTGTAAATGGTTATACAGCTATCCAAATCAATG  
 GTCACGTGATAACGATGTGATCCTTCACCTTCACCGTGCGGGTAACTCAACTTACTCACGTGAGAAGAAC  
 GTCACGTAAAGATGATGTAATCCTTCACCTTCACCGTGCGGGTAACTCAACTTACTCTCGTCAAAGAAC  
 GGCACGTAAAGACGATGATGTTCTTCACCTTCACCGTGCGGGTAACTCAACTTACTCACGTCAAAGAAC  
 GGCTCGTAAAGATGATCAAAATCTTCACCTTCACCGTGCGGGTAACTCAACTTACTCTCGTCAAAGAAC  
 GTCACGTAAAGTATGATATGATCCTTCACCTTCACCGTGCGGGTAACTCAACTTATTCTCGTCAAAGAAC  
 GGCTCGTAAAGTCTGATGTTATCCTTCACCTTCACCGTGCGGGTAACTCAACTTACTCTCGTCAAAGAAC  
 GTCCTGTAAGTACGATGTTCTTCACCTTCACCGTGCGGGTAACTCAACTTACTCTCGTCAAAGAAC  
 GGCTCGTAAAGTACGATGATCCTTCACCTTCACCGTGCGGGTAACTCAACTTACTCTCGTCAAAGAAC  
 GGCTCGTAAAGACGATATGATCCTTCACCTTCACCGTGCGGGTAACTCAACTTACTCTCGTCAAAGAAC**

850 860 870 880 890 900 910

Prymnesium neolepis TMR5 RbcL  
 Prymnesium neolepis PZ241 RbcL  
 Prymnesium neolepis VF28 RbcL  
 gi|76880158|dbj|AB183266.1| Hy  
 gi|12082155|dbj|AB043697.1| Ch  
 gi|8099172|dbj|AB043632.1| Chr  
 gi|12082157|dbj|AB043698.1| Pr  
 gi|12082151|dbj|AB043695.1| Ch  
 gi|12082153|dbj|AB043696.1| Im  
 gi|12082149|dbj|AB043694.1| Ch  
 gi|12082159|dbj|AB043699.1| Pl  
 gi|8099166|dbj|AB043629.1| Umb  
 gi|456605|dbj|D11140.1| PEHRBCL  
 gi|436905916|gb|JX292160.1| Em  
 gi|685217|dbj|D45844.1|GEOCPRB  
 gi|356472750|gb|HQ656833.1| Co  
 gi|12082137|dbj|AB043688.1| Pl  
 gi|356472744|gb|HQ656830.1| Pa

.....

**GGTAAGTGGTCACGTGATAACGATGTGATCCTTCACCTTCACCGTGCGGGTAACTCAACTTACTCACGTC  
 CACGGTATGAACCTCCGTGTAATCTGTAAGTGGATGCGTATGTCAGGTTGTGACCACATTCACGCAGGTA  
 CACGGTATGAACCTCCGTGTAATCTGTAAGTGGATGCGTATGTCAGGTTGTGACCACATTCACGCAGGTA  
 CATGGTATGAACCTCCGTGTAATCTGTAAGTGGATGCGTATGTCAGGTTGTGACCACATTCACGCAGGTA  
 CACGGTATGAACCTCCGTGTTATCTGTAAGTGGATGCGTATGTCAGGTTGTGACCACATTCACGCAGGTA**







