



Article

A Morphological and Molecular Analysis of a Bloom of the Filamentous Green Alga *Pithophora*

Blia Lor 1,2, Merry Zohn 1,3, Marcus J. Meade 4, A. Bruce Cahoon 4 and Kalina M. Manoylov 1,*

- Department of Biological and Environmental Sciences, Georgia College and State University, Milledgeville, GA 31061, USA; blia.lor@bobcats.gcsu.edu (B.L.); merry.zohn@bobcats.gcsu.edu (M.Z.)
- ² US AmeriCorps, Conservation Minnesota and Iowa, 60 Plato Blvd, Saint Paul, MN 55107, USA
- Oak Ridge Institute for Science and Education, Agricultural Research Services, U.S. Department of Agriculture, 600 E. Greenfield Ave., Milwaukee, WI 53204, USA
- Department of Natural Sciences, The University of Virginia's College at Wise, 1 College Ave., Wise, VA 24293, USA; mjm6mv@uvawise.edu (M.J.M.); abc6c@uvawise.edu (A.B.C.)
- * Correspondence: kalina.manoylov@gcsu.edu; Tel.: +01-478-445-2439

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Consensus atpB - P. sp. atpB - P.r	(UTEX 787) coding region	AMCCAAAACTICLATGAATYTATCTKTIKTACAGATTATAGGEICTGTIGGTTGACATRIC AACCAAAACTICCATGAATGTATCTIITTGTACAGATTATAGGTICCTGTIGGTTGACATRIC ATGAATIITATCTIGTTIITACAGATTATAGGEICCTGTGACATEC
Consensus atpB - P. sp. atpB - P.r	(UTEX 787) coding region	GANAMIATTNASTATRAAGTICCATCAGCTGGTGTTTCSTTRATGATTCAATAAATG GANASTATRAGTATGAAGTTCCATCAGCTGGTGTTTCGTTGTTATGATTCGATAAATG GANACATTGATTAAAAAGTTCCATCAGCTGGTGTTTCQTTGTATGATTCQATAAAATG
Consensus atpB - P. sp. atpB - P.r		GATIGGAGITALATIGAGAAGTICAALAATITATIRGGIBATIGAMTAATIGUGATIGUGTAS AATGGAGTTACATGAGAAGTTCAACAATTATTAGGTGATGGTATAGTCCGGTCTGTAG AATGGAGTTACATGAGAAGTTCAACAATTATTAGGTGATGGATAGTCCGTTCTGTAG
Consensus atpB - P. sp. atpB - P.r	(UTEX 787) coding region	ATIONGTACTOCTGCTGCKCTTAGGUSYGGANATCCAGGTAALACATCTGGYAATICAAS ATGAGTAGTACTGATGGCCTTAGGGACGGANATCCAGCTAALACATCTGGGAATCAAA ATGAGTAGTACTGATGGTCTTAGGGGTGGAAATCCAGCTAALACATCTGGTAATCAAA
Consensus atpB - P. sp. atpB - P.r		CATATATCASTIGGMAYGGAACYTTREGREGTATATITTAAYGTATTAGGTGAACCAS CATATATCAGTIGGMAGGAACHTINGGACGTATATITTAA GTATTAGGTGAACCAG CATATATCAGTIGGAACHTINGGCCGTATATITTAA GTATTAGGTGAACCAG
Consensus atpB = P. sp. atpB = P.r. =	(UTEX 787) coding region	GATGGTAAAGGACCAGTTAATTCAGAATTAGTATGCCTATTCATAGGCCGCACCTT GATGGTAAAGGACCAGTTAATTCAGAGATTAGTATGCCTATTCATAGGTCCGCACCTT GATGGTAAAGGACCAGTTAATTCAGAAATTAGTATGCCTATTCATAGGCCCGCACCTT
Consensus atpB = P. sp. atpB = P.r. =		THATIGAPHAGATACAAACHTAGCYATCHTIGAAACTGGTATHAAGGTTGTAGATG THATIGA <mark>S</mark> TAGATACAAACTTAGCIATCHTTGAAACTGGTATHAAGGTTGTAGATG THATIGA <mark>U</mark> TAGATACAAACTTAGC _S ATCHTIGAAACTGGTATHAAGGTTGTAGAC
Consensus atpB - P. sp. atpB - P.r	(UTEX 787) coding region	TTAGCACCYTATAAACGYGGAGGKAANGA—TAGGCTTGTTTGGTGGTGCAGGYGTTG TTAGCACCGTATAAACGCGGAGGTAT GAN TAGGCTTGTTTGGTGGTGCAGGYGTTG TTAGCACCGTATAAACGTGGAGGGAA
Consensus atpB - P. sp. atpB - P.r		AMAGCEGTRITTATAATEGAACTIATTAATAATATTECTAAAGCTCATAGTGGAGTTI AMGACGGTETTTATAATEGAACTIATTAATAATATTECTAAAGCTCATAGTGGAGTTI AMGACGGTETTATAATGGAACTIATTAATAATATTGCTAAAGCTCATAGTGGAGTTI
Consensus atpB - P. sp. atpB - P.r		STREET GEGGGGTTGGAGAACGTWCMCGTGAGGGTAATGATCTATAYGTGGAAATGT GTYTTTGGTGGAGTTGGAGAACGTWCACGTGAGGGTAATGATCTATAYGTGGAAATGT GTYTTTGGTGGAGTTGGAGAACGTWCACGTGAGGGTAATGATCTATAYGTGGAAATGT
Consensus atpB - P. sp. atpB - P.r		SATICTANGGITATIGTIGCIGATAATCICACACAATCAAAAGTAGCITTAGITTATG GATICTAAGGITATIGTIGCIGATAATCICACACAATCAAAAGTAGCITTAGITTATG GATICTAAGGITATIGTIGCIGATAATCTCACACAATCAAAAGTAGCITTAGITTATG
Consensus atpB - P. sp. atpB - P.r		CAMATBAATGABCCMCCTBGTGCAAGAATGCGTGTTBGYTTATCYGCATTAACAGIAG CAMATGAATGABCCACCTBGTGCAAGAATGCGTGTTBGGTTATCGCATTAACAGIAG CAMATGAATGABCC
Consensus atpB - P. sp. atpB - P.r		EMICATTTYCGAGATGTAATMCAACAMGATGTATTATTATTYATTGATAATATATTCA GA/CATTTYCGAGATGTAAT/CAACAMGATGTATTATTTATTYATTGATAATATATTCA GA/CATTTYCGAGATGTAAT/CAACAMGATGTATTATTATTYATTGATAATAATATTCA
Consensus atpB - P. sp. atpB - P.r		THIGTACAMCCOGMICTIGANGTATICAGCATTATTROGGCGTTTACCAMGCGCTGIRD THIGTACAMGCCGGAGCTGAAGTATCAGCATTATTROGGCGTTTACCAMGCGCTGTGG THIGTACAAGCCGGAGCTGAAGTATCAGCATTATTROGGCGTTTACCAAGCGCTGTAC
Consensus atpB - P. sp. atpB - P.r	(UTEX 787) coding region	TATCAACCAACTI TIKKCAACHGAAATGGGRAGGTTTCAACARCGAATTACTTCCACAS TATCAACCAACTTT\GCAAC\GAAATGGGRAGCTTTCAAGA\CGAATTACTTCCACAA TATCAACCAACTTT\GCAAC\GGAAATGGG\AGCTTTCAAGA\CGAATTACTTCCACAA
Consensus atpB - P. sp. atpB - P.r	(UTEX 787) coding region	TOYOGATCTATAACTTCAATTCAGGCTGTKTATGTACCAGCAGACGACATGACYGATG TCTGGATCTATAACTTCAATTCAGGCTGTGTATGTACCAGCAGACGACATGACTGATC TCGGGATCTATAACTTCAATTCAGGCTGTTTATGTACCAGCAGACGACATGACGATCA
Consensus atpB = P. sp. atpB = P.r. =		CONCENSIONAL AMONTH THAT I CAN HAVANTA STATE OF A CHARACTER AND A CHARACTER AN
Consensus atpB - P. sp. atpB - P.r	(UTEX 787) coding region	CHTAMONTAL INTAIGESCEADTAGATOTEATHAGAT CHTACHT CAMPANG TARAGO GCTAGAGCTATTTATCCTGCAGTAGATGTATTAGATTCTACTTCAACAATGTTACAGC GCTAGAGCTATTTATCCTGCAGTAGATGTATTAGATTCTACTTCAACAATGTTACAGC
Consensus atpB - P. sp. atpB - P.r		IGGATAGITIGGTAAAGAWEATITATGAATGAGGTGAREAAGTKEAAGAAAGAGTGEAAG TGGATAGTTGGTAAAGAICATTATGAATGAGCTCAGCAAGTGCAAGAAACACTTCAAC TGGATAGTTGGTAAAGAICATTATGAATGAGCTCAICCAAGTICAAGAAACACTTCAAC
Consensus atpB - P. sp. atpB - P.r		TATAATCAGCTICAAGATATAATAACAATATTAGGICIGGATGARTTATCAGAAGAAA TATAATCAGCTICAAGATATAATAGCAATATTAGGICTCGATGA <mark>G</mark> TTATCAGAAGAAC TATAATCAGCTICAAGATATAATAGCAATATTAGGICTCGATGA <mark>G</mark> TTATCAGAAGAAG
Consensus atpB - P. sp. atpB - P.r	(UTEX 787) coding region	CGTTETCHTGTATCACGAGCAAGAAAATTGAAAGATTCHTATETCAACCATTCHTTG CGTTCTCTTGTATCACGAGCAAGAAAATTGAAAGATTCTTATCTCAGCCATTCTTTG CGTTCTCTTGTATCACGAGCAAGAAA8ATTGAAAGATTCTTATCTCAGCCATTCTTTG
Consensus atpB - P. sp. atpB - P.r		SCTGAATTCTTTACTAATAGTCCNSSASCTTATGTYAAGTTGEAAGAAACTATANTTT GCCGAATTCTTTACTAATAGTCCAGGAGCTTATGTGAAGTTGCAAGAAACTATATTTT GCCGGAATTCTTTACTAATAGTCCGGAGCTTATGTQAAGTTGCAAGAAACTATA—TTT
Consensus atpB - P. sp. atpB - P.r		TITAAHCGAAATACTAAGTGGTAGTTTAGATAATATTAATGAAAATGAATTCTATTTA TITAAT TITAA [®] CGAAATACTAAGTGGTAGTTTAGATAATATTAATGAAAATGAATTCTATTTA
Consensus atpB - P. sp. atpB - P.r		AGGGTCGTTAGATAAGATTATTAAAAAGACCGATAATTAG AGGGTCGTTAGATAAGATTATTAAAAAGACCGATAATTAG

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Consensus

atpH - P. sp. (UTEX 787)

ATGGAAGCTATTACTCAAGCTGCATCAGTTTTAGCGGCTGCATTAAGTGTTGGATTAT atpH - P.r. - coding region ATGGAAGCTATTACTCAAGCTGCATCAGTTTTAGCGGCTGCATTAAGTGTTGGATTAT

Consensus
atpH - P. sp. (UTEX 787)
atpH - P.r. - coding region
GCAATIGGUCCTGGTATGGGTCAAGGTACAGCAGCCGGATATGCAGTTGAAGGAATTG
atpH - P.r. - coding region
GCAATIGGUCCTGGTATGGGTCAAGGTACAGCAGCCGGATATGCAGTTGAAGGAATTG

Consensus
atpH - P. sp. (UTEX 787)
atpH - P.r. - coding region
GAGTCACTTTGTATTTATGGCTTAGTTATTAGCTTATCATTTCTATTTGCTAATCCGT
AGTCACTTTGTATTTATGGCTTAGTTATTAGCTTATCATTTTGCTAATCCGT
AGTCACTTTGTATTTATGGCTTAGTTATTAGCTTATCGATTCTATTTTGCTAATCCGT

atpH - P.r. - coding region GCTTAA



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Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	ATTCTAATAATAAGTTTAGTCAGCTTAGTGCTAATTGGTAGTATCAATGCTTKCCCTC —GCTTGCCCTC ATTCTAATAATAAGTTTAGTCAGCTTAGTGCTAATTGGTAGTATCAATGCTTLCCCTC
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	TTTGCTCAACAWTTGTATTCYGATCCTATTGATARGACTGGTAAATTTGTATGTTCCC TTTGCTCAACATTTGTATTCTGATCCTATTGATAAGACTGGTAAATTTGTATGTTCCC TTTGCTCAACAATTGTATTCCGATCCTATTGATAGGACTGGTAAATTTGTATGTTCCC
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	TGYCAYTTGGCAGAMCAGCCYATTCGTATTTCMACAACAAGTAGTGTATKTCCAAAGA TGCCATTTGGCAGACCAGCCTATTCGTATTTCCACAACAAGTAGTGTATGTCCAAAGA TGTCACTTGGCAGAACAGCCCCATTCGTATTTCAACAACAAGTAGTGTATTTCCAAAGA
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	TACTTAGAYCTTACAATTINNIINIINIINIININNINNINNINNINNINNIINII
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	GGTAATGGCGAACTTTCATCAATTAATGTTGGTGGTGTTATTGTACTTCCTCCTGGTT
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	GTCACAATTAATACATCAGATATTCAATTATTTAGTCCTTGGTCAGAAGATCATAATA
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	NRININININININININININININININININININI
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	GCTCCTAAATCKGGAGTRCCWTTGAAGTATTCCATMGYKATTGGTGGKAATCGTGGMC GCTCCTAAATCGGGAGTACCATTGAAGTATTCCATCGTGATTGGTGGGAATCGTGGCC GCTCCTAAATCIGGAGTGCCTTTGAAGTATTCCATAGCTATTGGTGGIAATCGTGGAC
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	GGTCAATTGTATCCTAATGKAACAGCTACRAATAAYGGYAGCTTTAGRAGTTCAGAAG GGTCAATTGTATCCTAATGTAACAGCTACGAATAATGGCAGCTTTAGGAGGTTCAGAAG GGTCAATTGTATCCTAATGGAACAGCTACAAATAACGGTAGCTTTAGAAGTTCAGAAG
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	CTGNGGATTATTAANNYGTGNTAMMAKACTNTMTCAARWAAGNNCWAWNRTTGKMATT CTGGGGATTATTAA—TGTGATAGAAGACTGTCTCAAGAAAG—CTAA—GTTGGAATT CTG_GGATTATTAACTGGTG_TA—CALIACT—IATCAAATAAGTACAAITAITGTCATT
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	RGGTKSWATGATTAAGTCAAATTTAATTAGTCTACCAATTGGTGTTGATCTCCTAACA G <mark>GGT</mark> GGA <mark>A</mark> AGGTTCTATGATTAAGTCAAATTTAATTAGTCTACCAATTGGTGTTGATCTCCTAACA
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	TTCAAATGTAGTAGCCAAATCTGTAACACCAGATGTATTACTTAC
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	AGGAGGATTTGCACAGCAAGACTTATCAATAGTTTTACAAGAGCCAAATAGACTAAGG AGGAGGATTTGCACAGCAAGACTTATCAATAGTTTTACAAGAGCCAAATAGACTAAGG
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	CTTTAATCAATCAGCATTATTAGTTATTAAAAAGAAACAGTATGAAAGGTCTTTTTCT
Consensus petA - P. sp. (UTEX 787) petA - P.r coding region	TAAATTAGAAGTTAATTCATAA TAAATTAGAAGTTAATTCATAA

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ATAATATCAATATTCTTATGGTTCGATGATAGATTGGGTCTACAAGAGATTTTAGACG Consensus petB - P. sp (UTEX 787) CTACAAGAGATTTTAGACG petB - P.r. - coding region ATAATATCAATATTCTTATGGTTCGATGATAGATTGGGTCTACAAGAGATTTTAGACG Consensus

petB - P. sp (UTEX 787)

gttactagtaartacgtacctcctcatgttaacatcttttattgctttggyggattac

petB - P.r. - coding region GTTACTAGTAAAATACGTACCTCCTCATGTTAACATCTTTTATTGCTTTGGGGGATTAC Consensus

petB - P. sp (UTEX 787)

petB - P.r. - coding region

CTTACAAGTTTTATAATMCAAGGTGGAACTGGATTTGCTTTAACTTTTCATTACAGGC

CTTACAAGTTTTATAATCCAAGGTGGAACTGGATTTGCTTTAACTTTTCATTACAGGC

CTTACAAGTTTTATAATCCAAGGTGGAACTGGATTTGCTTTAACTTTTCATTACAGGC

CTTACAAGTTTTATAATCCAAGGTGGAACTGGATTTGCTTTAACTTTTCATTACAGGCC Consensus

PetB - P. sp (UTEX 787)

TCAGTTAATGAAGCCTTAGCTAGYGTTCTTAATATTCAAAGTAATGTRCATTCAGGAT

TCAGTTAATGAAGCCTTAGCTAGTGTTCTTAATATTCAAAGTAATGTACATTCAGGAT

PetB - P.r. - coding region

TCAGTTAATGAAGCCTTAGCTAGCTGTCTTAATATTCAAAGTAATGT_CCATTCAGGAT Consensus
petB - P. sp (UTEX 787)
TTAATACGATCGCTCATCGATGGGGAGCATCTTGAATGGTYTGATGMCTTAACTAC
petB - P.r. - coding region
TTAATACGATCTGCATCGATGGGGAGCATCTTGAATGGTTTGATGACTTAACTAC
TTAATACGATCTGCATCGATGGGGAGCTTCTTGAATGGTTTGATG Consensus

petB - P. sp (UTEX 787)

petB - P.r. - coding region GTTTGACGAGGTTTATCTAACTGGAGGATTTAACAAGCCCACGAGAGGTAACTTGGATAT

petB - P.r. - coding region GTTTGACGAGGTTTATCTAACTGGAGGATTTAAAAAGCCTCGAGAGGTTAACATGGATCT Consensus

GGTRTKTTATTRGCAGTATGTACAGTRTCTTTTGGAGTAACKGGMTATTCATTGCCAT

petB - P. sp (UTEX 787)

petB - P.r. - coding region GGTCTTATTAGCAGTATGTACAGTGTCTTTTGGAGTAACTGGCTATTCATTGCCAT Consensus

PetB - P. sp (UTEX 787)

GATCAAATTGGTTACTGGGCATTAMGAATAGTTTCYGGTGTACCMGATTGAATACCAA

petB - P.r. - coding region GATCAAATTGGTTACTGGGCATTALGAATAGTTTC GGTGTACCCGGATTGAATACCAA ATAGGAGGTATTTTAGTTGAACTTATTCGAGGAGGTCCAAGTGTTGGKCAAGCAACTT ATAGGAGGTATTTTAGTTGAACTTATTCGAGGAGGTCCAAGTGTTGG<mark>G</mark>CAAGCAACTT Consensus petB - P. sp (UTEX 787) ATAGGAGGTATTTTAGTTGAACTTATTCGAGGAGGTCCAAGTGTTGGCCAAGCAACTT
petB - P.r. - coding region ATAGGAGGTATTTTAGTTGAACTTATTCGAGGAGGTCCAAGTGTTGGCCAAGCAACTT Consensus

ACCCGTTTCTATAGYMTTCATACTTTTGTACTTCCMTTRATTACTACYGCKTTAATGC

petB - P. sp (UTEX 787)

ACCCGTTTCTATAGCCTTCATACTTTTGTACTTCCATTGATTACTACTGCGTTAATGC

petB - P.r. - coding region ACCCGTTTCTATAGTATTCATACTTTTGTACTTCCCTTTAATTACTACTGCGCTTTAATGC Consensus
petB - P. sp (UTEX 787)
petB - P.r. - coding region
TGACATTTTCTACTAATTCGTAAGCAGGGTATATCAGGACCTCTTTAA
TGACATTTTCTACTAATTCGTAAGCAGGGTATATCAGGACCTCTTTAA
TGACATTTTCTACTAATTCGTAAGCAGGGTATATCAGGACCTCTTTAA
TGACATTTTCTACTAATTCGTAAGCAGGGTATATCAGGACCTCTTTAA

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Consensus psbC - P. sp. (UTEX 787) psbC - P.r coding region	ATCTTTGCAACACGTTCATTATTTTCTGGAAACTCCCAGGAGGTATCCGGCTTTGCTT ATCTTTGCAACACGTTCATTATTTTCTGGAAACTCCCAGGAGGTATCCGGCTTTGCTT
Consensus	TGGGCTGGTAATGCHCGYCTTACTAATTTATCTGGACAATTAYNTRGGTKCACATGTA
psbC - P. sp. (UTEX 787)	TGGGCTGGTAATGCTCGCCTTACTAATTTATCTGGACAATTA
psbC - P.r coding region	ATGCACGTCTTACTAATTTATCTGGACAATTATTTGGGTTCACATGTA
Consensus psbC - P. sp. (UTEX 787) psbC - P.r coding region	GCATGCYGGTCTYATGGTTTTYTGGGCYGGAGCTATGACTYTATTYGAAAAAAAAAA
Consensus psbC - P. sp. (UTEX 787) psbC - P.r coding region	TACAACTGATAAACCACTTTATGAACAAGGATGAATTCTAATCCCTCATTTAGCTACA
Consensus	NANNANANANANANCCTAGYGGYGANGTTATTGATACSTATTYCTAYTTCGTTGTA
psbC - P. sp. (UTEX 787)	CCTAGCGGCGACGTTATTGATACGTATTTCTACTTCGTTGTA
psbC - P.r coding region	AGGATTAGGACTTAGACCTAGTGGTGAAGTTATTGATACCTATTCCTATTTCGTTGTA
Consensus	IRTIMITICACITAATYTCTTCAGCAGTWITAGGATTTIGGAGGTATATTYCATTCARTA
psbC - P. sp. (UTEX 787)	TGTTQTTCACITAATQTCTTCAGCAGTQTTAGGATTTIGGAGGTATATTIGCATTCAATA
psbC - P.r coding region	TQTTQTTCACITAATQTCTTCAGCAGTQTTAGGATTTIGGAGGTATATTQCATTCAQTA
Consensus	YGGACCYGAAATAATAACGTCGGAGTTCTTCGCYTATTCYTGGAAAGATAAGAATCAG
psbC - P. sp. (UTEX 787)	GGACCTGAAATAATAACGTCGGAGTTCTTCGCCTATTCTTGGAAAGATAAGAATCAG
psbC - P.r coding region	UGGACCCGAAATAATAACGTCGGAGTTCTTCGCUTATTCCTGGAAAGATAAGAATCAG
Consensus	GACTTCMATACTTGGATTTCATTTAATAATTCTTGGGCTAGGTMMTYATTATMANA
psbC - P. sp. (UTEX 787)	GACTTCAATACTTGGATTTCATTTAATAATTCTTGGGCTAGGT——[ICATTAT]———
psbC - P.r coding region	GACTTCCATACTTGGATTTCATTTAATAATTCTTGGGCTAGGTGCCQTTATTATTGGTA
Consensus psbC - P. sp. (UTEX 787) psbC - P.r coding region	NAMANANANANANATGGTGGICTTRTATGATCCATGGGCTCCTGRTGKAGGAGATGTT ATGGTGGTTTJATATGATCCATGGGCTCCTGGTGTAGGAGATGTT GAAAGCTACTATTTATGGTGGGTTJATATGATCCATGGGCTCCTGATGGAGGAGATGTT
Consensus	ATTAATAWCTAATCCTACATTAAGYCCATAYACAATATTTGGCTATCTTYTAATATCC
psbC = P. sp. (UTEX 787)	ATTAATATCTAATCCTACATTAAGCCCATATACAATATTTGGCTATCTTTTAATATCC
psbC = P.r coding region	ATTAATAACTAATCCTACATTAAGTCCATAGACAATATTTGGCTATCTTQTAATATCC
Consensus	YTTYGGRGGTGATGGTTGGATTGTACGYRTAGATAATTTAGAAGATGTTATTGGAGGT
psbC - P. sp. (UTEX 787)	GTTCGGAGGTGATGGTTGGATTGTACGCATAGATAATTTAGAAGATGTTATTGGAGGT
psbC - P.r coding region	UTTUGGGGGTGATGGTTGGATTGTACCTGTAGATAATTTAGAAGATGTTATTGGAGGT
Consensus	CATMITTIATMKCGITTAATTGAAATATTTIGGTGGMITYTGGCATCAGTITACAAGTCCT
psbC - P. sp. (UTEX 787)	CATGITTTATTIGCGGTTAATTGAAATATTTIGGTGGAAGTCTGGCATCAGTTTACAAGTCCT
psbC - P.r coding region	CATAITTTATATCGTTAATTGAAATATTTIGGTGGTCGTTGTTGGCATCAGTTTACAAGTCCT
Consensus	GOMTTGGGCAAGMCGYTGYTTTGTTTGGTCAGGYGAAGCTTAYTTATCCTATTCTTTA
psbC - P. sp. (UTEX 787)	GCATTGGGCAAGTCGGTGGTTTGTTTGGTCAGGTGAAGCTTAGTTATCCTATTCTTTA
psbC - P.r coding region	GCGTTGGGCAAGACGTTGTTTGTTTGGTCAGGTGAAGCTTALTTATCCTATTCTTTA
Consensus	AGCACTYAGTCTWATGGGATTTATTGCATGTTGMATGGTATGRTTTAATAATACAGTT
psbC = P. sp. (UTEX 787)	AGCACTTAGTCTTATGGGATTTATTGCATGTTGCATGGTATGATTTAATAATACAGTT
psbC = P.r coding region	AGCACTTAGTCTTATGGGATTTATTGCATGTTGAATGGTATGGTTTAATAATACAGTT
Consensus	TCCMAGTGAGTTYTAYGGAGGTACAGGGACCAGAGGGTTGGGAGTGTCAAACATTCACA
psbC - P. sp. (UTEX 787)	TCCGAGTGAGTTGTAGGGACCTACAGGACCAGAGGCTTCGCAGTCTCAAACATTCAC
psbC - P.r coding region	TCCMAGTGAGTTUTAUGGACCTACAGGACCAGAGGCTTCGCAGTCTCAACCATTCAC
Consensus	YTTAGTACGAGATCAACGRCTTGGTGCYTCTGTTGCKAAAGCCCAAGCKCCTACTGGA
psbC - P. sp. (UTEX 787)	ITTAGTACGAGATCAACGACTTGGTGGCTCTGTTGCGAAAGCCCAAGCIICCTACTGGA
psbC - P.r coding region	ITTAGTACGAGATCAACGGCTTGGTGCIITCTGTTGCIIAAAGCCCAAGCGCCTACTGGA
Consensus	AGGKAAATANTYTMATAGATATACTTCAGGAGAGATTAGACTCGGAGGTAAAACTATG
psbC - P. sp. (UTEX 787)	AGGGAAATAT <mark>IIIT</mark> AATAGATATACTTCAGGAGAGATTAGACTCGGAGGTAAAACTATG
psbC - P.r coding region	AGGTAAATA <mark>-IT</mark> QTCATA
Consensus psbC - P. sp. (UTEX 787) psbC - P.r coding region	CTTCCGGGATCTTAGAACACCTTGA CTTCCGGGATCTTAGAACACCTTGA

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Consensus rbcl P. sp. rbcl P.r	(UTEX 787)	ATGCAAACACAAACAAGATCGGGACAAGGATTTACAGCTGGTGTTMANRATTATCRNT - COUATTATGAG ATGCAAACAAACAAACAACATGGGGACAAGGATTTACAGCTGGTGTTAAACATTATGGA
Consensus rbcL - P. sp.	(UTEX 787)	CATATTAYATGAAACATTATCAGGTTCAYATYAATGACCTGTTAGGGGCTTTTAGAG ACATATTAGATGAAACATTATCAGGTTCAYATGAATGACCTGTTAGGGGCTTTTAGAG ACATATTAYATGAAACATTATCAGGTTCAYATYAATGACCTGTTAGCGGCTTTTAGAG
Consensus rbcL - P. sp. rbcL - P.r	(UTEX 787) coding region	ATTICCTCAACCAGGAGTACCACCTGAGGAAGCAGGAGCAGCAATTGCCGCAGAATCAT ATTICCTCAACCAGGAGTACCACCTGAGGAAGCAGGAGCAGCAATTGCCGCAGAATCAT ATTICCTCAACCAGGAGTACCACCTGAGGAAGCAGGAGCAGCAATTGCCGCAGAATCAT
Consensus rbcL - P. sp. rbcL - P.r		ACYGGAACHTIGGACTACTIGTATIGKACTIGAYIGGTTTAACTAGTTTIAGACHGAAYAAAA ACIGGAACTTIGGACTACTIGTATIGTACTICAGTTTAACTAGTTTIGGACGGAYAHAAAA ACIGGAACTTIGGACTACTIGTATIGGACTICATIGGTTTAACTAGTTTIAGACACAATIACAAAA
Consensus rbcL - P. sp. rbcL - P.r		COTTO TIATO AT TOMAT TAGET TO THE TOTAL CAME AND CONTROL OF THE TATAL TO COTTO TAGET TO THE TAGET TAGET TO THE TAGET TAGET TO THE TAGET TAGET TO THE TAGET TAGET TAGET TO THE TAGET TAGET TAGET TO THE TAGET TAGE
Consensus rbcL – P. sp. rbcL – P.r. –	(UTEX 787) coding region	TAYONATTAGAYYTATTY GAAGASGOTO GTTAYYAAYATGOTTACTTCTATRATTC TAYONATTAGAYCTATTY GGAGAGGOTO GTTAYIAA GATGOTTACTTCTATAYTTIC TAYOOATTAGAGTTATTY GAAGAGGYTCGGTTACYAYATGOTTACTTCTATGATTC
Consensus rbcL = P. sp. rbcL = P.r. =	(UTEX 787) coding region	RAYGTATYTGGRITYAARGETCTTCRYTIGTTTANGSYTAGAAGATCTNCRCYTACON ANGTATGGGGTTTANGGTCTTCNGTGTTTASGCGTAGAAGATCTGGSGGTACCAA ANGGTATTTGGATTCAASGCTCTTCGTTGTTTASGGTTAGAAGATCTAGGGTTACCA
Consensus rbcL - P. sp. rbcL - P.r	(UTEX 787) coding region	CCCTTPCTAAA/ACTITTCATIGTGCTCCTCATGGGATTCAAGTIGAAAAGNATAAGA GCCTTPCTAAA/ACTITTCATTGTGCTCCTCATGGGATTCAAGTIGAAAAGNATAAAGA GCCTTPCTAAAGACTTTCACGGTGCTCCTTCATGGGATTCAAGTIGAAAAG
Consensus rbcl. – P. sp. rbcl. – P.r. –	(UTEX 787) coding region	ANTANGTATGEACGACGTTTATTAGGTGTACATTAAACGTAARTTAGGATTITCCC ANTANGTATGGACGACGTTTATTAGGTTGTACATTAAACCTAAGTTAGGATTITCCCC ANTANGTATGGACGATCTTTATTAGGTTGTACAATTAAACCTAAGTTAGGATTGTCCC
Consensus rbcL – P. sp. rbcL – P.r. –	(UTEX 787) coding region	MSALYTATGGROMGCTGTTTACGNATGTCTTYGTGGTRGATTRGATTTCACCAMA MGAALTATGGGCGAGCTGTTTACGAATGTCTTGGTGGTAGATTGGATTTCACCAMA MGAALTATGGCGAGCTGTTTACGAATGTCTTTGGTGGTGGATTAGATTTCACCAMA
Consensus rbcL = P. sp. rbcL = P.r. =	(UTEX 787) coding region	SATIGNEAN CONCAPTION CASE THE ATMOSPHIC CONCAPT CONTINUENT OF THE CONTINUENT
Consensus rbcL - P. sp. rbcL - P.r		GAYGCARTITATAAGTCGCAAGCTGANNANNAGAAGTTAAAGGGCATTAYTTAAATG GAGCCACTITIATAAGTCGCAAGCTGA GAGCAATITIATAAGTCGCAAGCTGAAACTGGAAAGTTAAAGGACAITAAGTTAAATG
Consensus rbcL - P. sp. rbcL - P.r	(UTEX 787) coding region	NCAGCAGGTACGTGTGAAGAATTGCTAAARCGTGCDAAAGTTGCTAARGARTTAAGAA ACAGCAGGTACGTGTGAAGAATTGCTAAAACGTGCCAAAGTTGTTAAGGAATTAAGAA ACAGCAGGTACGTGTGAAGAATTGCTAAAACGCCGAAGTTGCTAAAGAATTAAGAA
Consensus rbcL = P. sp. rbcL = P.r. =		CCTATTATNATGCACGATTATATAACTIGGTGTTTTACTIGCTAATACATCTTTAGCTA CCTATTAT¶ATGCACGATTATATAACTIGGTGGTTTTACTIGCTAATACATCTTTAGCTA CCTATTATijATGCACGATTATATAACTGGTGGTTTTACTGCTAATACATCTTTAGCTA
Consensus rbcL - P. sp. rbcL - P.r		TTTTGTCGTGATCATGGATTACTWYTACATATACATAGAGGCTATGCATGCCGTYATMC TTTTGTCGTGATCATGGATTACTITTACATATACATACGCCTATGCATGCCGTTATMC TTTTGTCGTGATCATGGATTACTWTACATATACATACATACGCCTATGCATGCCGTCATMC
Consensus rbcL – P. sp. rbcL – P.r. –	(UTEX 787) coding region	CONCAMAGATTCATOONATTCATTTYNOAGTTTTAGCTAMAGDKYTAAGATTGTCTC CONCAMAGATTCATGGTATTCATTTTCGAGTTTTAGCTAMAGCGTTAAGATTGTCTC CONCAMAGATTCATGGAATTCATTTTAGAGTTTTAGCTAMAGCTTTAAGAATGTCTC
Consensus rbcL - P. sp. rbcL - P.r		GGAGATEATTTACACTCAGGAACAGTGGTTGGTAAGCTTGAAGGTGATAGAGANTATG GGAGATCATTTACACTCAGGAACAGTGGTTGTTAAGCTTGAAGGTGATAGAGAATTATC GGAGATCATTTACACTCAGGAACAGTGGTTGCTAAGCTTGAAGGTGATAGAGA
Consensus rbcL = P. sp. rbcL = P.r. =	(UTEX 787) coding region	AKTAGGATTTOTAGATCTWATKEGYGATGAATCAATAGAWCTYGAYCGATCAWGAGG ACTAGGATTTOTAGATCTITATIICGI GATGAATCAATAGAACTITGACCGATCAGAGGA AITAGGATTTOTAGATCTIATICGGGATGAATCAATAGCGCTCGGAICGATCAGAGGA
Consensus rbcL - P. sp. rbcL - P.r	(UTEX 787) coding region	TTAYTTYCAYMAAACKTGGRTTTCANGCCONGGTGTTATRCCMGTTRCCAGYGGAGGT TTAGTTGCATRAAACITGG7TTTCAGGCCCGGTGTTATICCGGTTACCAGTGGAGGT TTAIITTIICACGAAAC8TGG9TTTCAIGCCCGGGTGTTATGCCAGTTGCCAGGGGAGGT
Consensus rbcL - P. sp. rbcL - P.r	(UTEX 787) coding region	MCATA TYTGGMATATGCCTGCTCTTGTAGATATATTTGGTGATGATGCATGATTACAG A <mark>CATATI</mark> CTGGA <mark>ATATGCCTGCTCTT</mark> CCATATIJTIGGTATATGCCTGCHGTTGTAGATATATTTIGGTGATGATGATGATGATTACAG
Consensus rbcL - P. sp. rbcL - P.r		TGGCGGAGGAACTCTTGGTCATCCATGGGGTAATGCTCCTGGAGCTGTGGCTAACCGA TGGCGGAGGAACTCTTGGTCATCCATGGGGTAATGCTCCTGGAGCTGTGGGCTAACCGA
Consensus rbcL - P. sp. rbcL - P.r	(UTEX 787) coding region	GGCATTAGAAGCCTGCGTATTAGCTCGTAACTGCGGTAGCGATTTATCACGAGATGGA GGCATTAGAAGCCTGCGTATTAGCTCGTAACTGCGGTAGCGATTTATCACGAGATGGA
Consensus rbcL - P. sp. rbcL - P.r		TAATATTATTOGTGAAGCTACACAATTOAGTOCAGAATTAGCTGCCGCTGCTGAAGTT TAATATTATTOGTGAAGGTAGALAATTOAGTOCAGAATTAGGTGCCGGTGGTGAAGTT
Consensus rbcL - P. sp. rbcL - P.r		GCAAT CAATTGAATTTAATTTCAAAGCAGTAGATACAGTTTAA GCAAT CAATTGAATTTAATTTCAAAGCAGTAGATACAGTTTAA