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5S Ribosomal DNA of Genus *Solanum*:

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Supplementary Material

Alignment of 5S rDNA IGS sequences of *Solanum* species

Note: This file represents a comparison of sequences of major and minor variants of 5S rDNA IGS (ribotypes) present in genomes of *Solanum* species.

S. abancayense, abn

Majority CTTTTTTGTTGAAATTCGGTTCGTGTAGCATTTAAATATTATATT-ATTTTTCTGCAGAAACGACATTCGGATTGAGACGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
abn-C1R1-.....
abn-C1R2-.....
abn-C1R3-.....
abn-C2R1-.....
abn-C3R1-.....
abn-C3R2G.....AT.....T.....T.....
abn-C3R3G.....AT.....T.....T.....

Majority CGTTAGGACAGGTGATGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGGAGGCTAGGTCGGTG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
abn-C1R1G.....T...
abn-C1R2 ...G.....C.....
abn-C1R3GTG.....
abn-C2R1
abn-C3R1A.....
abn-C3R2G.....
abn-C3R3

Majority GGGGGCAGGCTAGGGCGTTGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
abn-C1R1
abn-C1R2C..... 222 bp
abn-C1R3 222 bp
abn-C2R1CC..... 222 bp
abn-C3R1 222 bp
abn-C3R2 223 bp
abn-C3R3 223 bp

abn-C1R1	abn-C1R2	abn-C1R3	abn-C2R1	abn-C3R1	abn-C3R2	abn-C3R3	
***	97.8	97.8	98.2	98.7	96.4	96.9	abn-C1R1
	***	97.3	98.7	98.2	96.0	96.4	abn-C1R2
		***	97.8	98.2	96.0	96.4	abn-C1R3
			***	98.7	96.4	96.9	abn-C2R1
				***	96.9	97.3	abn-C3R1
					***	99.6	abn-C3R2
						***	abn-C3R3

Similarity: 96.0-99.6

S. abutiloides, abu

Majority CCXTTTTGTGCGAAATTCGGGCACAACCTTCGTCTGTTTGATGATATTTTTTTTCCCCGXAGAAACGATATTTGGGCCGAGAXG
 10 20 30 40 50 60 70 80
 -----+-----+-----+-----+-----+-----+-----+-----+
pSabu-5S1 ..T.....G.....C.
pSabu-5S4 ..A.....C.....G.

Majority TCGTTGGGACTGGCGATGAGGACGGGCGTXCCAGGCGTCACCACXCGCCGGTGCGTGCAGGCTAGGGCGGTGGGGTGCAG
 90 100 110 120 130 140 150 160
 -----+-----+-----+-----+-----+-----+-----+-----+
pSabu-5S1A.....G.....
pSabu-5S4G.....C.....

Majority GCTAGGGCGGTGGGAGGAATGTGGTTTAATAAXAATTTAGAGTGCAAGGAATGAX
 170 180 190 200 210
 -----+-----+-----+-----+-----+-----+-----+
pSabu-5S1C.....C 214 bp
pSabu-5S4G.....T 214 bp

pSabu-5S1	pSabu-5S4	
***	96.7	pSabu-5S1
	***	pSabu-5S4

Similarity: 96.7

S. acaule, acl

Majority CCTTTTGTCTCGAAATTCGGTCTGTAATAGAAAAA-TATTATTATTTATTTTGTAGAAACGACGTCGTTAGGACTAA
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
aca5S.2-.....
aca5S.3T-.....A.....-.....
aca5S.4A.....
aca5S.5-.....

Majority CAGGTGATGGGGCGTTGGGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
aca5S.2
aca5S.3
aca5S.4
aca5S.5

Majority G-CAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
aca5S.2 .-.....A.....A..... 219 bp
aca5S.3 .G..... 219 bp
aca5S.4 .-..... 220 bp
aca5S.5 .-..... 219 bp

aca5S.2	aca5S.3	aca5S.4	aca5S.5	
***	97.3	98.6	99.1	aca5S.2
	***	97.7	98.2	aca5S.3
		***	99.5	aca5S.4
			***	aca5S.5

Similarity: 97.3-99.5

S. achacachense, ach

Majority CCTTTTTGTCGAAATTCGGTCGTGTAATT-----ATTATTTATTTTTTCAGAAAGTCGGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
ach-C1R1AC.....GAAAAAATATT.....CGAC.....
ach-C1R4AC.....GAAAAAATATT.....G.....CGAC.....
ach-C1R2-----.....T.....
ach-C1R3-----.....
ach-C7R1C.....-----.....

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGCGG---CGTCATGCGTCGGTGCGCGTGAGGCTAGGTCGGTGGGGGGCA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
ach-C1R1 .G.....GGGG.....A.....
ach-C1R4 .G.....GCGG.....A.....G.....
ach-C1R2-----.....
ach-C1R3-----.....
ach-C7R1-----.....

Majority GGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
ach-C1R1 T.....G.... 217 bp
ach-C1R4 T..... 217 bp
ach-C1R2G..... 202 bp
ach-C1R3 202 bp
ach-C7R1A..... 202 bp

ach-C1R1	ach-C1R4	ach-C1R2	ach-C1R3	ach-C7R1	
***	98.2	87.6	88.5	87.6	ach-C1R1
	***	87.1	88.0	87.1	ach-C1R4
		***	99.1	98.2	ach-C1R2
			***	99.1	ach-C1R3
				***	ach-C7R1

Similarity: 87.1-99.1

S. acroglossum, acg

Majority CCTTTTGGTCGAAATTCGGTCGAGTAATTGAAAAATATATTATGATTTTTTGCAGAAACGACATTCGGATTGAGACGTC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
acg-C1R1T.....C.....
acg-C1R2C.....
acg-C2R1TG.....
acg-C3R1
acg-C4R1A.....
acg-C5R1T.....
acg-C6R1T.....

Majority GTTAGGACGGGTGATGGGGCGTTGAGGAAGGGCGTGACGGGCGGCGTCATGCGTCGGTGCCTGAGGCTAGGCCGGTGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
acg-C1R1
acg-C1R2
acg-C2R1 ..C.....
acg-C3R1
acg-C4R1
acg-C5R1 ..C.....G.....
acg-C6R1 ..C.....

Majority GGGTCAGGCAAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCAATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
acg-C1R1G..... 223 bp
acg-C1R2 223 bp
acg-C2R1C.....C 223 bp
acg-C3R1 223 bp
acg-C4R1T..... 223 bp
acg-C5R1 223 bp
acg-C6R1C..... 223 bp

acg-C1R1	acg-C1R2	acg-C2R1	acg-C3R1	acg-C4R1	acg-C5R1	acg-C6R1	
***	99.1	96.4	98.7	97.8	97.3	97.3	acg-C1R1
	***	97.3	99.6	98.7	98.2	98.2	acg-C1R2
		***	97.8	96.9	98.2	99.1	acg-C2R1
			***	99.1	98.7	98.7	acg-C3R1
				***	97.8	97.8	acg-C4R1
					***	99.1	acg-C5R1
						***	acg-C6R1

Similarity: 96.4-99.6

S. acroscopicum, acs

Majority CCTTTTGGTCGAAATTCGGTTCGTGTAATTGAAAAAATATATTTATTATTTTGCAGAAACGACATTGGGATTGAGACGTC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
acs-C1R1G.....
acs-C1R2
acs-C1R3
acs-C2R1C.....C.....
acs-C3R1
acs-C4R1
acs-C5R1CT.C.TT.....T.....
acs-C6R1C.....T.....
acs-C7R1 ..G.....
acs-C7R2C.....
acs-C8R1G.....

Majority GTTAGGACAGGTGATGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCGTGCGTCGGTGCGCGGAGGCTAGGTCGGTGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
acs-C1R1
acs-C1R2A.....
acs-C1R3
acs-C2R1
acs-C3R1
acs-C4R1
acs-C5R1
acs-C6R1
acs-C7R1
acs-C7R2
acs-C8R1

Majority GGGGTCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTT-AATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+-----+
acs-C1R1-..... 224 bp
acs-C1R2-.....C..... 224 bp
acs-C1R3 ..A.....C..... 224 bp
acs-C2R1-..... 224 bp
acs-C3R1 ...-.....T..... 224 bp
acs-C4R1-.....C..... 224 bp
acs-C5R1-.....C..... 224 bp
acs-C6R1-.....G..... 225 bp
acs-C7R1 ...-.....T..... 224 bp
acs-C7R2 ...-.....C.....T..... 224 bp
acs-C8R1 ...-.....T..... 224 bp

acs-C1R1	acs-C1R2	acs-C1R3	acs-C2R1	acs-C3R1	acs-C4R1	acs-C5R1	acs-C6R1	acs-C7R1	acs-C7R2	acs-C8R1	
***	98.7	98.7	98.7	98.7	99.1	96.4	98.2	98.2	97.8	98.2	acs-C1R1
	***	99.1	98.2	98.2	99.6	96.9	97.8	97.8	97.3	97.8	acs-C1R2
		***	98.2	98.7	99.6	96.9	97.8	98.2	97.8	98.2	acs-C1R3
			***	98.2	98.7	96.9	98.7	97.8	98.2	97.8	acs-C2R1
				***	98.7	96.0	97.8	99.6	99.1	99.6	acs-C3R1
					***	97.3	98.2	98.2	97.8	98.2	acs-C4R1
						***	97.3	95.6	96.0	95.6	acs-C5R1
							***	97.3	97.8	97.3	acs-C6R1
								***	98.7	99.1	acs-C7R1
									***	98.7	acs-C7R2
										***	acs-C8R1

Similarity: 95.6-99.6

S. aculeatissimum, acu

Majority C C T T T T T T G T C G A A A T T C G G T C T G A T C T C G T C T A T C T A T A T T A T T T - T T G G C T C A G G C G A C A T T T G T T T G G G T C G G G A C G
 10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pSacu1-.....
pSacu2-.....
pSacu3C.....A.....
pSacu4-.....
pSacu5-.....

Majority T C G T T A G G A C G G T T G A G G A A G A G G G C G T G G C C C T T T G G C G G T G G T G A T G C A G G A G G C T A G G G C G T C G T G A G G A A T G A G G
 90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pSacu1G.....
pSacu2
pSacu3T.....A.....
pSacu4
pSacu5

Majority T T T A A T A G A A T T T A G A G T G G T A G G A A T G A T
 170 180 190
-----+-----+-----+
pSacu1 .C.....189 bp
pSacu2189 bp
pSacu3190 bp
pSacu4189 bp
pSacu5189 bp

pSacu1	pSacu2	pSacu3	pSacu4	pSacu5	
***	98.9	96.8	98.9	98.9	pSacu1
	***	97.9	100.0	100.0	pSacu2
		***	97.9	97.9	pSacu3
			***	100.0	pSacu4
				***	pSacu5

Similarity: 96.8-100.0

S. aethiopicum, aet

Majority CTTTTTTTGCCGAAATTCGTCGCTCTATTCGGCGAATGATTATTTTTTTTGGCGGTTTGGG-----GAGAGA
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
aet-C1R1TCGTTTGCTTGGG.....
aet-C2R1
aet-C4R1 T.....
aet-C6R1T.....

Majority CGTCGTTAGGACGGTTGAGGAAGGGCGGTGGCGTGCATGGCTAGGGCGTGGGGGGAGGAATGAGGCTTAATAGAATTAAG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
aet-C1R1T.....T.....
aet-C2R1C.....
aet-C4R1
aet-C6R1A.....

Majority AGTGCTAGAAATGAC
170
-----+-----
aet-C1R1 175 bp
aet-C2R1 162 bp
aet-C4R1 162 bp
aet-C6R1 162 bp

aet-C1R1	aet-C2R1	aet-C4R1	aet-C6R1	
***	90.9	90.9	90.3	aet-C1R1
	***	98.9	98.3	aet-C2R1
		***	98.3	aet-C4R1
			***	aet-C6R1

Similarity: 90.3-98.9

S. ajanhuiri, ajh

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATAGAAAAATATTATTATTTATTTTGTAGAAACGACGTCGTXAGGACTAAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
ajh-C1R1C.....
ajh-C2R1A.....T.....
ajh-C3R1C.....
ajh-C4R1A.....T.....

Majority AGGTGATGGGGGCGTTGGGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGX
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
ajh-C1R1 ..T.....A
ajh-C2R1A.....G
ajh-C3R1A
ajh-C4R1G.....G.....G

Majority CAGGCTAGGXCGTTGGGAGGAAGGAGGTGTTTAATAAXAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----
ajh-C1R1T.....C..... 219 bp
ajh-C2R1G.....G.....G.....A..... 219 bp
ajh-C3R1T.....C..... 219 bp
ajh-C4R1G.....G..... 219 bp

ajh-C1R1	ajh-C2R1	ajh-C3R1	ajh-C4R1	
***	95.9	99.5	96.3	ajh-C1R1
	***	96.3	96.8	ajh-C2R1
		***	96.8	ajh-C3R1
			***	ajh-C4R1

Similarity: 95.9-99.5

S. albornozii, abz

Majority CCTTTTGGTCGAAATTCGATCGTGCAATTTTAAAAATATATAATTATTATTTTTGCAGAAACGACATTCGGACGGAGACG
-----+-----+-----+-----+-----+-----+-----+
 10 20 30 40 50 60 70 80
abz-C1R1C.....G.....
abz-C1R2
abz-C1R3G.....
abz-C2R1
abz-C3R1

Majority TCGTTAGGACAGGTGATGGGGGGAGTCACGCGTCGGTGCGT-----GGTCGGTGGGGGTCAGGCTAGGGCGTTGGG
-----+-----+-----+-----+-----+-----+-----+
 90 100 110 120 130 140 150 160
abz-C1R1-----
abz-C1R2-----
abz-C1R3-----
abz-C2R1C.....-TA.....
abz-C3R1C.....GGGGGGCTA.....

Majority AGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
-----+-----+-----+-----+--
 170 180 190 200
abz-C1R1 193 bp
abz-C1R2 193 bp
abz-C1R3G..... 193 bp
abz-C2R1 193 bp
abz-C3R1 202 bp

abz-C1R1	abz-C1R2	abz-C1R3	abz-C2R1	abz-C3R1	
***	99.0	99.0	96.5	94.1	abz-C1R1
	***	99.0	97.5	95.0	abz-C1R2
		***	96.5	94.1	abz-C1R3
			***	95.5	abz-C2R1
				***	abz-C3R1

Similarity: 94.1-99.0

S. albostellatum, als

Majority CTTTTTTT-----TGCCTTCCGGAATTTGGTGGTGTATAGGTCGGTTGAGGGAGGGCTTTAGGCGGTTGGGTCGTTTG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
als-C1R1-----.....
als-C2R1-----G.....G.....
als-C3R1ATTTTTT.....

Majority CTTGGGCAGGGACGTCGTTAGGACGGCTGAGGAAGGGCGTCGTCGGCGCGTGGAGGCTAGGGCGGTGGCATTGGGGGGAG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
als-C1R1A.....
als-C2R1C.....A.....C.....
als-C3R1C.....

Majority GACTAAGGTTTAAATAGAATTAAGAGTCGCTGGAATGAT
170 180 190
-----+-----+-----
als-C1R1G.....A..... 191 bp
als-C2R1 191 bp
als-C3R1 198 bp

als-C1R1	als-C2R1	als-C3R1	
***	92.4	94.4	als-C1R1
	***	92.9	als-C2R1
		***	als-C3R1

Similarity: 92.4-94.4

S. ambosinum-1, amb1

Majority CCTTTTTGTCGAAATTCGGTCGTGTAATAGAAAAAATATXATTATTTATTTTTTGXAGAAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
amb1-C1R1A.....T.....C.....
amb1-C2R2T.....T.....C.....
amb1-C2R4G.....T.....
amb1-C4R1C.....G.....T.....

Majority GATGGGGGCGTXXX-XXXXXXXXXGACGGGCGGCGTCATGCGTCGGTGCGCGTGAGGCTAGGTTCGGTGGGGGGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
amb1-C1R1TGAGGATGGGCGT.....
amb1-C2R2 A.....TGAAGATGGGCGT.....G.....A.....
amb1-C2R4-----
amb1-C4R1-----

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
amb1-C1R1 213 bp
amb1-C2R2T..... 213 bp
amb1-C2R4 200 bp
amb1-C4R1C.....C..... 200 bp

amb1-C1R1	amb1-C2R2	amb1-C2R4	amb1-C4R1	
***	96.7	92.5	91.1	amb1-C1R1
	***	90.6	89.2	amb1-C2R2
		***	98.6	amb1-C2R4
			***	amb1-C4R1

Similarity: 89.2-98.6

S. ambosinum-2, amb2

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATAGAAAAAATATTATTATTTATTTTGTAGAAACGACGTCGTTAGGACTAAC

10 20 30 40 50 60 70 80

amb2-C1R1G.....

amb2-C1R2G.....

amb2-C1R3T.....

amb2-C1R4TC.....A.....

amb2-C1R5C.....

amb2-C1R6C.....

amb2-C1R7 .T.....A.....C.....

amb2-C1R8C.....

amb2-C1R9C.....

amb2-C1R10C.....

amb2-C1R11G.....C.....

amb2-C1R12A.....

Majority AGGTGATGGGGCGTTGGGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGG

90 100 110 120 130 140 150 160

amb2-C1R1G.....

amb2-C1R2G.....

amb2-C1R3G.....

amb2-C1R4A.....

amb2-C1R5A.....

amb2-C1R6A.....

amb2-C1R7--.....

amb2-C1R8-.....

amb2-C1R9T.....

amb2-C1R10T.....

amb2-C1R11T.....

amb2-C1R12T.....

Majority CAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT

170 180 190 200 210

amb2-C1R1G.....C..... 219 bp

amb2-C1R2G..... 219 bp

amb2-C1R3 T..... 219 bp

amb2-C1R4C..... 218 bp

amb2-C1R5A.....T..... 219 bp

amb2-C1R6T..... 219 bp

amb2-C1R7 A..... 213 bp

amb2-C1R8G..... 218 bp

amb2-C1R9 219 bp

amb2-C1R10 219 bp

amb2-C1R11 219 bp

amb2-C1R12T..... 219 bp

amb2-C1R1	amb2-C1R2	amb2-C1R3	amb2-C1R4	amb2-C1R5	amb2-C1R6	amb2-C1R7	amb2-C1R8	amb2-C1R9	amb2-C1R10	amb2-C1R11	amb2-C1R12	
***	98.2	97.7	97.3	96.3	97.3	94.1	97.3	98.6	97.7	97.7	97.7	amb2-C1R1
	***	98.6	98.2	97.3	98.2	95.0	98.2	99.5	98.6	98.6	98.6	amb2-C1R2
		***	97.7	96.8	97.7	95.0	97.7	99.1	98.2	98.2	98.2	amb2-C1R3
			***	96.3	97.3	94.1	97.3	98.6	97.7	97.7	97.7	amb2-C1R4
				***	97.3	93.2	97.3	97.7	97.7	97.3	96.8	amb2-C1R5
					***	94.1	98.2	98.6	98.6	98.2	97.7	amb2-C1R6
						***	94.1	95.4	94.5	94.5	94.5	amb2-C1R7
							***	98.6	98.6	98.2	97.7	amb2-C1R8
								***	99.1	99.1	99.1	amb2-C1R9
									***	98.6	98.2	amb2-C1R10
										***	98.2	amb2-C1R11
											***	amb2-C1R12

Similarity: 94.1-99.5

S. americanum-1, amel

Majority CCTTTTGTCTGAAGTTCGGCATGATTTCGTGTATTTGATAATATATATTATTATTTTTTGCAGAAACGGCATTTCGTGCC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
amel-C4R1A.....
amel-C4R2
amel-C4R3 .A.....CAC.....C.....
amel-C10R1G.....
amel-C12R1-.....
amel-C17R1
amel-C20R1 .T.A.....A.....

Majority TAGACGTCTAGGACGGGCGACGGAGGCGCTGAGGACGGGCGTGACAGGCATGACGTCGGTGCGTGGAGGCTAGGGCGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
amel-C4R1A.....
amel-C4R2C.....
amel-C4R3TT.....
amel-C10R1A.....C...A..A.....
amel-C12R1T.....
amel-C17R1A.....
amel-C20R1A.....

Majority CGGGGGAAATGCTATGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGCGCAATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+-----+
amel-C4R1T..... 226 bp
amel-C4R2C..... 226 bp
amel-C4R3C..... 226 bp
amel-C10R1--..... 223 bp
amel-C12R1C..... 225 bp
amel-C17R1A..... 226 bp
amel-C20R1A..... 226 bp

amel-C4R1	amel-C4R2	amel-C4R3	amel-C10R1	amel-C12R1	amel-C17R1	amel-C20R1	
***	97.8	95.1	95.6	97.3	98.2	96.5	amel-C4R1
	***	95.6	95.6	97.8	98.2	96.9	amel-C4R2
		***	93.4	95.1	95.6	94.7	amel-C4R3
			***	95.1	96.0	94.2	amel-C10R1
				***	98.2	96.5	amel-C12R1
					***	96.9	amel-C17R1
						***	amel-C20R1

Similarity: 93.4-98.2

S. americanum-2, ame2

Majority CCTTTTGTCTGAAGTTCGGCATGATTTTCGTCTATTTGATAATATATATTATTATTTTTTGCAGAAACGGCATTCGTGCC
 10 20 30 40 50 60 70 80
 -----+-----+-----+-----+-----+-----+-----+-----+
 ame2-C1R1
 ame2-C1R2
 ame2-C2R1G.....-
 ame2-C10R1AC.....TA.....
 ame2-C12R1-
 ame2-C19R1 ...G.....

Majority TAGACGTCGCTAGGACGGGTGACGGAGGCGCTGAGGACGGGCGTGACAGGCATGCCGTCGGTGCGTGAGGCTAGGGCGG
 90 100 110 120 130 140 150 160
 -----+-----+-----+-----+-----+-----+-----+
 ame2-C1R1
 ame2-C1R2
 ame2-C2R1 -----A.....
 ame2-C10R1 ..T.....
 ame2-C12R1 -----A.....
 ame2-C19R1A.....

Majority CGGGGGACATGCTATGTCGTTGGGAGAAAGGAGGTGTTTAATAGAATTTAGAGCGCAATGAATGAT
 170 180 190 200 210 220
 -----+-----+-----+-----+-----+-----+
 ame2-C1R1A.. 226 bp
 ame2-C1R2 226 bp
 ame2-C2R1 217 bp
 ame2-C10R1 ..T.....A..... 226 bp
 ame2-C12R1A..... 217 bp
 ame2-C19R1 ...A.....CT..... 226 bp

ame2-C1R1	ame2-C1R2	ame2-C2R1	ame2-C10R1	ame2-C12R1	ame2-C19R1	
***	99.6	94.7	96.5	94.7	97.3	ame2-C1R1
	***	95.1	96.9	95.1	97.8	ame2-C1R2
		***	92.5	98.2	92.9	ame2-C2R1
			***	92.5	94.7	ame2-C10R1
				***	92.9	ame2-C12R1
					***	ame2-C19R1

Similarity: 92.5-99.6

S. americanum-3, ame3

Majority CCTTTTGTCTGAAGTTCGGCATGATTTCTGTATTTGATAATATATATTATTATTTTTTTCAGAAACGGCATTCTGTGCC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
ame3-C3R1G.....
ame3-C6R1A.....

Majority TAGACGTCGCTAGGACGGGCGACGGAGGCGCTGAGGACGGGCGTGACAGGCATGACGTCGGTGCGTGGAGGCTAGGGCGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
ame3-C3R1
ame3-C6R1

Majority CGGGGGAAATGCTATGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGCGCAATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+-----+
ame3-C3R1 226 bp
ame3-C6R1 226 bp

ame3-C3R1	ame3-C6R1	
***	99.6	ame3-C3R1
	***	ame3-C6R1

Similarity: 99.6

S. andreanum, adr

Majority CCTTTTGGTCGAAATTCGAACGTGTAATCGAAAAATATATTTATTATTTTT-GCAGAAACGACATTCGGATGGAGACGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
adr-C1R1-.....
adr-C1R2T.....T.....
adr-C1R3G.....-

Majority CGTTAGGACAGGTGATGGGGGGGTGAGGACGGGCGTCGTCATGCGTCGGTGCGTGAGGCTAGGTCGGTGGGGGTCAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
adr-C1R1
adr-C1R2
adr-C1R3A.....

Majority CTAGGGCGTTGGGAGGAGGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
adr-C1R1A..... 214 bp
adr-C1R2 215 bp
adr-C1R3G..... 214 bp

adr-C1R1	adr-C1R2	adr-C1R3	
***	98.6	98.1	adr-C1R1
	***	97.7	adr-C1R2
		***	adr-C1R3

Similarity: 97.7-98.6

S. anguivi, ang

Majority CTTTTTTCGTCGTCCTATTCGGCGAATGATTTTTTTTTTTTTXX-GCGGTTGGGTGXGTTTGCTTGGGGAGAGACGTCGTTAG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
ang-C1R1C
ang-C2R1T--.....T
ang-C2R2TT-.....T.....G
ang-C10R1 T.....G.....-..T..-..G..-..G.....TTT.....T
ang-C14R1--.....C
ang-C14R2TTT.....T
ang-C15R1---.....C
ang-C15R2-----.....C

Majority GACGGTTGGGGAAGGGCGTCGCGGTAGCAAAAAGGGCTATGGCGGTGGTGTGCATGGCTAGGGCGTGGGGG-AGGAATGA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
ang-C1R1A.....G
ang-C2R1A.....G
ang-C2R2A.....T.....-
ang-C10R1A.....G.....-
ang-C14R1A.....GG.....G
ang-C14R2A.....G.....-
ang-C15R1-
ang-C15R2-

Majority GGTTTAATAGAATTAAGAGTTCTAGGAATGAT
170 180 190
-----+-----+-----+-----+
ang-C1R1GG..... 189 bp
ang-C2R1GG..... 190 bp
ang-C2R2 190 bp
ang-C10R1 188 bp
ang-C14R1GG..... 189 bp
ang-C14R2 191 bp
ang-C15R1G..... 187 bp
ang-C15R2T..... 185 bp

ang-C1R1	ang-C2R1	ang-C2R2	ang-C10R1	ang-C14R1	ang-C14R2	ang-C15R1	ang-C15R2	
***	99.0	94.8	90.6	99.0	94.8	94.8	95.8	ang-C1R1
	***	95.8	91.7	97.9	95.8	93.8	94.8	ang-C2R1
		***	93.8	93.8	97.9	94.8	94.8	ang-C2R2
			***	89.6	94.8	91.7	90.6	ang-C10R1
				***	93.8	93.8	94.8	ang-C14R1
					***	95.8	94.8	ang-C14R2
						***	97.9	ang-C15R1
							***	ang-C15R2

Similarity: 89.6-99.0

S. anomalostemon, ano

Majority CTTTTTGTGCGAAATTCGGCGTGATTCCGTCCATTTGATGATATTATTTTTCGCGGAAACGACATTTGGGCCGAGAGGTC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
ano-C7R1
ano-C11R1C.....
ano-C12R1T.....
ano-C14R1
ano-C14R2T.....

Majority GTCAGGACAGGTGACGGAGGGGCAGAGGATGGGAGCGCCAGGCGTCACCACGCGCCGGCGAGCGGAAAGGCGAGGGCGTT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
ano-C7R1
ano-C11R1C.....T.....
ano-C12R1T.....
ano-C14R1C.....
ano-C14R2T.....

Majority GGGGCGCAGGCCGGGAGGAATGAGGTTTAATAGAATTTTCGAGCGCAAGGAATGAC
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
ano-C7R1 215 bp
ano-C11R1 215 bp
ano-C12R1T....G.... 215 bp
ano-C14R1 215 bp
ano-C14R2 215 bp

ano-C7R1	ano-C11R1	ano-C12R1	ano-C14R1	ano-C14R2	
***	98.6	98.1	99.5	99.1	ano-C7R1
	***	96.7	98.1	97.7	ano-C11R1
		***	97.7	97.2	ano-C12R1
			***	98.6	ano-C14R1
				***	ano-C14R2

Similarity: 96.7-99.5

S. appendiculatum-1, apel

Majority CTTTTTGTCTGAAATTCGATCGAGTATTTTGTAAATGTATATTTCTTTTTGCGGAAACGACATTCGGATCGAGACGTCGTT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
ape-C1R1T.....
ape-C2R1
ape-C3R1A.....CG...C.....-...A..A..A.T.....C.A...T.....

Majority AAGACAGGTGACGGGGCGATTAAAGATGGGCGTGACAATCGGCGTCATGCGTCGGTTTCGGGGAGGCTAGGTCGGTGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
ape-C1R1G.....T.....
ape-C2R1A.....T.....
ape-C3R1G.....T.....GGG...A...T...A..G...A.A...T.....

Majority GCAGGCTAGGGCGTXCGGAGGAAGGAGGTGTTTAATAGAATTTACAGTGGTAGGAAAXAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+
ape-C1R1A.....A.. 220 bp
ape-C2R1T...A.....C.. 220 bp
ape-C3R1-T...A.....G.....G.. 218 bp

ape-C1R1	ape-C2R1	ape-C3R1	
***	96.4	85.5	ape-C1R1
	***	85.5	ape-C2R1
		***	ape-C3R1

Similarity: 85.5-96.4

S. appendiculatum-2, ape2

Majority CTTTTTGTGCGAAATTCGATCGXGTATTTTGTAATGTATATTTCTTTTTGCGGAAACGACATTCGGATCGAGACGTCGTT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
ape2-C1R1A.....
ape2-C2R1 .A.....C.....T...T.....A.....
ape2-C3R1A.....
ape2-C4R1A.....CG...C.....T...A..A..A.T.....C.A...T.....
ape2-C5R1A.....TG...C.....T...A...A.T.....A...T...G.....
ape2-C6R1A.....T.....

Majority AAGACAGGTGACGGGGCGGATTAAGATGXGCGTGACAATCXGCGTCATGCGTCGGTTCGGGGAGGCTAGGTCGGTGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
ape2-C1R1A.....T.....A.....
ape2-C2R1A.....G.T.....G.....T.A....
ape2-C3R1A.....T.....
ape2-C4R1G.....G...G.....GGG.G..A...T...A..G...A.A...T.....
ape2-C5R1G.....G...G.....GGG.G..A.....G.....T.....
ape2-C6R1A.....T.....

Majority GCAGGCTAGGGCGTXCGGAGGAAGGAGGTGTTTAATAGAATTTACAGTGGTAGGAAAGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
ape2-C1R1A..... 220 bp
ape2-C2R1A..... 220 bp
ape2-C3R1T...A.....C.. 220 bp
ape2-C4R1-T...A.....G..... 219 bp
ape2-C5R1-TT...A.....C.....G..... 219 bp
ape2-C6R1T...A.....T..C.. 220 bp

ape2-C1R1	ape2-C2R1	ape2-C3R1	ape2-C4R1	ape2-C5R1	ape2-C6R1	
***	94.5	98.2	85.9	87.3	97.3	ape2-C1R1
	***	93.6	84.1	85.5	92.7	ape2-C2R1
		***	85.5	86.8	99.1	ape2-C3R1
			***	95.5	84.5	ape2-C4R1
				***	85.9	ape2-C5R1
					***	ape2-C6R1

Similarity: 84.1-99.1

S. arcanum, arc

Majority CCTTTTT-GTTGAAATTTGATCTCGTAATTGAG-AAAAAAATATACTAATTTATTTTTTTTGC GGAAAATACGTTCCGGAT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
arc-C1R1-.....-.....
arc-C1R4T.....G.....
arc-C2R1-.....-.....A.....A.....

Majority TGAGACGTCATTAGGATATGGGATGGTGGCGTCGGTGATGGGCGTGACGGGCGTCGT-CGTGCGTCGGTGCGTGGAGGGT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
arc-C1R1T.T.....
arc-C1R4-.....
arc-C2R1G.....-.....

Majority TTTAAAGCGGGGGGCGGGCTAGGGCGTTGGGAGGAAGGTTGTGTTTAATAGATTTTAGAGTGCAATGAATGAC
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+-----+-----+
arc-C1R1 231 bp
arc-C1R4 232 bp
arc-C2R1 229 bp

arc-C1R1	arc-C1R4	arc-C2R1	
***	98.3	97.4	arc-C1R1
	***	97.4	arc-C1R4
		***	arc-C2R1

Similarity: 97.4-98.3

S. aviculare, avi

Majority CCTTTTATCGAAATTCATCATAATTTTATCTATTTGGTGATTAAATTTATTTTTTAATTTTGCGGAAAGGACATTCGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
pSavi-5S2C.....
pSavi-5S3T.....
pSavi-5S5

Majority GTGGAGACGTCGTTAGGACAAGTGATGGAGGCGTTTGAAATTGGCGTGAAAGGCGGCACCATGCGTCGGCAGGCTAGGGC
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pSavi-5S2G.....
pSavi-5S3
pSavi-5S5

Majority GTTGGGAGGAAGGAGGTGTTTAATAAAATTTGGAGTGCTAGGAATGAC
170 180 190 200
-----+-----+-----+-----+-----+
pSavi-5S2 208 bp
pSavi-5S3 208 bp
pSavi-5S5 208 bp

pSavi-5S2	pSavi-5S3	pSavi-5S5	
***	98.6	99.0	pSavi-5S2
	***	99.5	pSavi-5S3
		***	pSavi-5S5

Similarity: 98.6-99.5

S. avilesii, avl

Majority C C T T T T T T G T C G A A A T T C G G T C G T G T A A T T G A A A A A T A T A T T T A T T T A T T T A T T G C A G A A A C G A A A C G A C G T C G T T A G G A
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
avl-C1R1-----.....A.....
avl-C1R4-----.....
avl-C1R2T.T.....G.....C.....
avl-C1R6 .T.....T.....
avl-C2R1
avl-C2R2A.....
avl-C2R3T.....

Majority C A G G T G A T G G G G G C G C T G G T G A T G G G C G T G A C G G G C G G C G T C A T G C G T C G G T G C G C G T G G A G G C T A G G A C G G T G G G G G G C
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
avl-C1R1
avl-C1R4
avl-C1R2
avl-C1R6C.....G.....A.....
avl-C2R1
avl-C2R2C.....
avl-C2R3T.....

Majority A G G C T A G G G C G T T G G G A G G A A G G A G G T G T T T A A T A G A A T T T A G A G T G C T A T G A A T G A T
170 180 190 200 210
-----+-----+-----+-----+-----+
avl-C1R1G.....166
avl-C1R4166
avl-C1R2G.....218
avl-C1R6T.....218
avl-C2R1218
avl-C2R2218
avl-C2R3218

avl-C1R1	avl-C1R4	avl-C1R2	avl-C1R6	avl-C2R1	avl-C2R2	avl-C2R3	
***	99.1	72.9	72.5	75.2	74.8	74.3	avl-C1R1
	***	73.9	73.4	76.1	75.7	75.2	avl-C1R4
		***	94.5	97.2	96.3	96.3	avl-C1R2
			***	97.2	96.3	97.2	avl-C1R6
				***	99.1	99.1	avl-C2R1
					***	98.2	avl-C2R2
						***	avl-C2R3

Similarity: 72.5-99.1

S. berthaultii-1, ber1

Majority CTTTTTGTGCGAAATTCGGTCGTGTAATTGAAAGAATATATACATTTATTTTTGCAGGAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
ber_5S.1
ber_5S.2T.....
ber_5S.3
ber_5S.4
ber_5S.5T.....

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGGGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTTCGGCGGGGGGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
ber_5S.1
ber_5S.2A.....
ber_5S.3
ber_5S.4
ber_5S.5

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
ber_5S.1 213 bp
ber_5S.2A..... 213 bp
ber_5S.3 .A..... 213 bp
ber_5S.4 .A..... 213 bp
ber_5S.5 213 bp

ber_5S.1	ber_5S.2	ber_5S.3	ber_5S.4	ber_5S.5	
***	98.6	99.5	99.5	99.5	ber_5S.1
	***	98.1	98.1	99.1	ber_5S.2
		***	100.0	99.1	ber_5S.3
			***	99.1	ber_5S.4
				***	ber_5S.5

Similarity: 98.1-100

S. berthaultii-2, ber2

Majority CTTTTTTGTCGAAATTCGGTTCGTGTAATTGAAAGAATATATTCATTTATTT----TTTGCAGGAACGACGTCGTTAGGAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
ber2-C1R1A.....
ber2-C1R3 .C.....G.....A.....T.....
ber2-C1R4
ber2-C1R5 .C.....A.....T.....ATTT.....
ber2-C1R6
ber2-C1R7 TC.....A.....A.T.....---A.....
ber2-C1R8---

Majority AGGTGATGGGGGCGTTGAGGATGGGCGTGACGGGGGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTTCGGCGGGGGGCA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
ber2-C1R1
ber2-C1R3
ber2-C1R4AA.....
ber2-C1R5
ber2-C1R6T.....
ber2-C1R7
ber2-C1R8

Majority GGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
ber2-C1R1 213 bp
ber2-C1R3 213 bp
ber2-C1R4 213 bp
ber2-C1R5T...A.....G.....T...A..... 217 bp
ber2-C1R6 201 bp
ber2-C1R7 172 bp
ber2-C1R8A.....G..... 213 bp

ber2-C1R1	ber2-C1R3	ber2-C1R4	ber2-C1R5	ber2-C1R6	ber2-C1R7	ber2-C1R8	
***	97.7	98.6	94.0	93.5	77.9	98.6	ber2-C1R1
	***	97.2	95.4	92.2	79.3	97.2	ber2-C1R3
		***	93.5	93.1	78.3	98.2	ber2-C1R4
			***	88.5	75.6	93.5	ber2-C1R5
				***	73.3	93.1	ber2-C1R6
					***	77.4	ber2-C1R7
						***	ber2-C1R8

Similarity: 73.3-98.6

S. betaceum, bet

Majority CCCCTXGGAAGTCCTCGTGTTCATCCCTCGTTTTTGTGCGAAATTGGGCATAACTATTTGATGGTATTTTTTTTCGCXG
 10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pBet-1 G.....
pBet-2 A.....

Majority AAGCGACATCTGGGCCGAGACGTCGCTAGGACAGGCGCCGAGGATGGGCGTGGGTGGCGCCACCACGCGCGGGTGCGTGG
 90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pBet-1
pBet-2

Majority AGGCTAGGGCGTTGGGAGGAATGTGGTTTAATAGAAATTTAGAGTGCTAGGAATGXTGGATGCGATCATACCAGCACTAAC
 170 180 190 200 210 220 230 240
-----+-----+-----+-----+-----+-----+-----+-----+
pBet-1 A.....
pBet-2 G.....

Majority XCACCGGA

pBet-1 A..... 187 bp
pBet-2 G..... 187 bp

pBet-1	pBet-2	
***	98.4	pBet-1
	***	pBet-2

Similarity: 98.4

S. blanco-galdosii, blg

Majority CCTTTTGGTCGAAACTTCGTGCCGAGTAAAACAATCAAAAAAATATTTATTATTTTGCAGAAACGACATTCGGATGGAG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
blg-C1R1C.....
blg-C2R1T.....
blg-C2R2C.....T.....A.....
blg-C2R3T.....
blg-C3R1

Majority ACGTCGTTAGGTCAGGTGATGGGGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGTGGGGGCTAGGACGGTGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
blg-C1R1 G.....
blg-C2R1
blg-C2R2
blg-C2R3A.....
blg-C3R1

Majority TCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+
blg-C1R1C.....C..... 220 bp
blg-C2R1 220 bp
blg-C2R2T..... 220 bp
blg-C2R3 220 bp
blg-C3R1G..... 220 bp

blg-C1R1	blg-C2R1	blg-C2R2	blg-C2R3	blg-C3R1	
***	97.7	96.4	97.3	97.7	blg-C1R1
	***	97.7	99.5	99.1	blg-C2R1
		***	97.3	97.7	blg-C2R2
			***	98.6	blg-C2R3
				***	blg-C3R1

Similarity: 96.4-99.5

S. boliviense, blv

Majority CCTTTTGTGCGAAATTTGGGTCGTGTAATTGAAAAAATATTATTATTTATTTXTTTGCAGGGACGACGTCGTTAGGACAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
blv-C1R1-.....T.....T
blv-C2R1C.....
blv-C3R1 .T.....T.....
blv-C3R2T.....C.....

Majority TGATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGC
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
blv-C1R1T..
blv-C2R1
blv-C3R1
blv-C3R2A.....

Majority TAGGGCGTTGGGAGGAAGGAGGTGTTTAXTAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
blv-C1R1 A.....A..... 213 bp
blv-C2R1A..... 214 bp
blv-C3R1T.....G..... 214 bp
blv-C3R2G.....C..... 214 bp

blv-C1R1	blv-C2R1	blv-C3R1	blv-C3R2	
***	97.7	96.7	96.3	blv-C1R1
	***	98.1	98.1	blv-C2R1
		***	97.2	blv-C3R1
			***	blv-C3R2

Similarity: 96.3-98.1

S. brevicaule, brc

Majority CCTTTTGTGCGAAATTTGGTCGTGTAATTGAAAAATATTATTATTTATTTTGCAGGAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
brc-C1R1
brc-C1R2 A.....G.....T.....
brc-C1R3
brc-C2R1-----.....

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
brc-C1R1A.....
brc-C1R2A.....
brc-C1R3G.....
brc-C2R1G.....C.....

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
brc-C1R1 213 bp
brc-C1R2 213 bp
brc-C1R3 213 bp
brc-C2R1 205 bp

brc-C1R1	brc-C1R2	brc-C1R3	brc-C2R1	
***	97.7	99.1	94.8	brc-C1R1
	***	97.7	93.4	brc-C1R2
		***	94.8	brc-C1R3
			***	brc-C2R1

Similarity: 93.4-99.1

S. bukasovii f. multidissectum-1, bukml

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATTTGTTTATTATTATTATTATTATTCAGAACCGACGTCGTTAGGAGAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
bukml-C6R1 .T.....T.....A.-..A.A.....-...AT...TC.....A....A.T-C....-..C.T.
bukml-C7R1
bukml-C35R1
bukml-C35R2
bukml-C35R3C.....

Majority GATGG-GGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTTCGGTGGGGGGCAGGC
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
bukml-C6R1 ..G.AT.....-..
bukml-C7R1-.....T.....
bukml-C35R1-.....C.....
bukml-C35R2-.....
bukml-C35R3-.....

Majority TAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
bukml-C6R1-.....C..... 207 bp
bukml-C7R1 213 bp
bukml-C35R1 213 bp
bukml-C35R2 213 bp
bukml-C35R3T..... 213 bp

bukml-C6R1	bukml-C7R1	bukml-C35R1	bukml-C35R2	bukml-C35R3	
***	87.4	87.4	87.9	86.9	bukml-C6R1
	***	99.1	99.5	98.6	bukml-C7R1
		***	99.5	98.6	bukml-C35R1
			***	99.1	bukml-C35R2
				***	bukml-C35R3

Similarity: 86.9-99.5

S. bukasovii f. multidissectum-2, bukm2

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATAGAAAAATATTATTATTTATTTT-GCAGAAACGACGTCGTTAGGAC---
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
bukm2-C1R1C.....T.....
bukm2-C1R2T.....
bukm2-C2R2
bukm2-C3R1T.....TAA
bukm2-C2R1T.....TAA

Majority -AGGTGATGGGGGCGTTG--AGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
bukm2-C1R1 -.....C.....
bukm2-C1R2 -.....
bukm2-C2R2 -.....G.....
bukm2-C3R1 C.....GG.....G.....
bukm2-C2R1 C.....GG.....

Majority GCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+
bukm2-C1R1A..... 214 bp
bukm2-C1R2 214 bp
bukm2-C2R2A..... 213 bp
bukm2-C3R1 219 bp
bukm2-C2R1 219 bp

bukm2-C1R1	bukm2-C1R2	bukm2-C2R2	bukm2-C3R1	bukm2-C2R1	
***	98.6	98.2	94.5	95.0	bukm2-C1R1
	***	98.6	95.9	96.4	bukm2-C1R2
		***	95.5	95.9	bukm2-C2R2
			***	99.5	bukm2-C3R1
				***	bukm2-C2R1

Similarity: 94.5-99.5

S. bukasovii f. multidissectum-3, bukm3

Majority CCTTTTGTCTCGAAATTCGGTCGTGTAATTGAAAAAXTATTATTATTATTTTTCAGAAACTCGGTCGTTAGGACAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
bukm3-C1R1A.....
bukm3-C2R1-.....
bukm3-C4R1A.....
bukm3-C8R1A.....-.....

Majority TGXTGGGGGCGTTGAGGATGGGCGTGACGGGGCGGCGTCAXGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGC
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
bukm3-C1R1 ..G.....C.....T.....
bukm3-C2R1 ..A.....A.....G.....
bukm3-C4R1 ..G.....T.....
bukm3-C8R1 ..A.....G.....

Majority TAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
bukm3-C1R1 214 bp
bukm3-C2R1 213 bp
bukm3-C4R1 214 bp
bukm3-C8R1 213 bp

bukm3-C1R1	bukm3-C2R1	bukm3-C4R1	bukm3-C8R1	
***	97.7	99.5	97.7	bukm3-C1R1
	***	98.1	99.1	bukm3-C2R1
		***	98.1	bukm3-C4R1
			***	bukm3-C8R1

Similarity: 97.7-99.5

S. bukasovii-1, buk1

DIRECT SEQUENCING - 222 bp

S. bukasovii-2, buk2

Majority CTTTTTGTGAAATTCGGTCGTGTAATATTTAAATATTATATTATTTTCTGCAGAAACGACATTCGGATTGAGACGTC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
buk2-C1R1G.
buk2-C1R2A.
buk2-C2R1
buk2-C3R1

Majority GTTAGGACAGGTGATGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGTGAGGCTAGGTCGGTGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
buk2-C1R1
buk2-C1R2
buk2-C2R1
buk2-C3R1

Majority GGGGCAGGCTAGGGCGTTGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
buk2-C1R1G..... 222 bp
buk2-C1R2 222 bp
buk2-C2R1 ...C..... 222 bp
buk2-C3R1 222 bp

buk2-C1R1	buk2-C1R2	buk2-C2R1	buk2-C3R1	
***	98.6	98.6	99.1	buk2-C1R1
	***	99.1	99.5	buk2-C1R2
		***	99.5	buk2-C2R1
			***	buk2-C3R1

Similarity: 98.6-99.5

S. bukasovii-3, buk3

Majority CCTTTTGTGCGAAATTCGGTTCGTGTAATAGAAAAAATATTATTATTTATTTTTGTAGAAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
buk3-C1R1
buk3-C2R1
buk3-C3R1 .T.....
buk3-C5R1
buk3-C5R2 .T.....

Majority GATGGGGGCGTTGGGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
buk3-C1R1--.....
buk3-C2R1
buk3-C3R1
buk3-C5R1--.....A.....TT.....
buk3-C5R2A

Majority CTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+-----+
buk3-C1R1 213 bp
buk3-C2R1 215 bp
buk3-C3R1 215 bp
buk3-C5R1 213 bp
buk3-C5R2 215 bp

buk3-C1R1	buk3-C2R1	buk3-C3R1	buk3-C5R1	buk3-C5R2	
***	99.1	98.6	98.6	98.1	buk3-C1R1
	***	99.5	97.7	99.1	buk3-C2R1
		***	97.2	99.5	buk3-C3R1
			***	96.7	buk3-C5R1
				***	buk3-C5R2

Similarity: 96.7-99.5

S. bukasovii-4, buk4

Majority

CCTTTTGTGCGAAATTCGGTCGTGTAATAGAAAAAATATTATTATTTATTTTTGTAGAAACGACGTCGTTAGGACAGGT

1020304050607080

-----+-----+-----+-----+-----+-----+-----+-----+

buk4-C1R1.....

buk4-C1R2.....T.....

buk4-C2R1.....

buk4-C2R2.....T.....

buk4-C3R1.....A.....

buk4-C5R1.....

buk4-C6R2.....

buk4-C6R1.....G.....

Majority

GATGGGGGCGTTG--AGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGG

90100110120130140150160

-----+-----+-----+-----+-----+-----+-----+-----+

buk4-C1R1.....--.....

buk4-C1R2.....--.....

buk4-C2R1.....GG.....T.....

buk4-C2R2.....--.....

buk4-C3R1.....GG.....

buk4-C5R1...A.....

buk4-C6R2.....

buk4-C6R1...A.....

Majority

CTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT

170180190200210

-----+-----+-----+-----+-----+

buk4-C1R1.....213 bp

buk4-C1R2.....213 bp

buk4-C2R1.....215 bp

buk4-C2R2.....213 bp

buk4-C3R1.....215 bp

buk4-C5R1.....A.....198 bp

buk4-C6R2.....198 bp

buk4-C6R1.....G.....198 bp

buk4-C1R1	buk4-C1R2	buk4-C2R1	buk4-C2R2	buk4-C3R1	buk4-C5R1	buk4-C6R2	buk4-C6R1	
***	99.5	98.6	99.5	98.6	92.1	93.0	91.6	buk4-C1R1
	***	98.1	99.1	98.1	91.6	92.6	91.2	buk4-C1R2
		***	98.1	99.1	90.7	91.6	90.2	buk4-C2R1
			***	98.1	91.6	92.6	91.2	buk4-C2R2
				***	90.7	91.6	90.7	buk4-C3R1
					***	99.1	98.6	buk4-C5R1
						***	98.6	buk4-C6R2
							***	buk4-C6R1

Similarity: 90.2-99.5

S. bukasovii-5, buk5

Majority CTTTTTGTGCGAAATTCGGTCGTGTAATTTGTTTATTATTATTATTTATTATTCAGAACCGACGTCGTTAGGAGAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
buk5-C1R1T.....
buk5-C1R2
buk5-C1R3
buk5-C2R1G.....
buk5-C7R1G.....

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGAGGCTAGGTCGGTGGGGGGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
buk5-C1R1
buk5-C1R2
buk5-C1R3
buk5-C2R1
buk5-C7R1

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
buk5-C1R1 213 bp
buk5-C1R2 213 bp
buk5-C1R3A..... 213 bp
buk5-C2R1A..... 213 bp
buk5-C7R1 213 bp

buk5-C1R1	buk5-C1R2	buk5-C1R3	buk5-C2R1	buk5-C7R1	
***	99.5	99.1	98.6	99.1	buk5-C1R1
	***	99.5	99.1	99.5	buk5-C1R2
		***	98.6	99.1	buk5-C1R3
			***	98.6	buk5-C2R1
				***	buk5-C7R1

Similarity: 98.6-99.5

S. bukasovii-6, buk6

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATAGAAAAATATTATTATTTATTTTGTAGAAACGACGTC---GTTAGGAC-
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
buk6-C1R1 .T.....T.....G..TTT...-.....-...AT...C..C.....A.TCGGA..GA...G
buk6-C1R2
buk6-C1R3 .T.....T.....TTT...-.....-...AT...C..C.....A.TCGGA..GA...G
buk6-C9R1
buk6-C16R1AA.....
Majority ----TA--ACAGGTGATGGGGGCGTTGGGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
buk6-C1R1 TCGT..GG.....--.....
buk6-C1R2 ----..--.....
buk6-C1R3 TCGT..GG.....--.....
buk6-C9R1 ----..--.....A.....
buk6-C16R1 ----..--.....
Majority CGGTGGGGGGCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
buk6-C1R1-..... 222 bp
buk6-C1R2 219 bp
buk6-C1R3A...-..... 222 bp
buk6-C9R1 219 bp
buk6-C16R1G..... 219 bp

buk6-C1R1	buk6-C1R2	buk6-C1R3	buk6-C9R1	buk6-C16R1	
***	86.0	99.1	85.6	84.7	buk6-C1R1
	***	86.0	99.6	98.7	buk6-C1R2
		***	85.6	84.7	buk6-C1R3
			***	98.3	buk6-C9R1
				***	buk6-C16R1

Similarity: 84.7-99.6

S. bukasovii-7, buk7

Majority	CCTTTTGTGCGAAATTXGGTCGTGTAATAGAAAAAATATTATTATTTATTTTTTGXAGXAACGACGTCGTTAGGAC----
	10 20 30 40 50 60 70 80
	-----+-----+-----+-----+-----+-----+-----+-----+
buk7-C1R1	 T G C . G A ----
buk7-C1R2	 C C . C . G . C T . AC ----
buk7-C1R3	 T T G C . G ----
buk7-C2R1	. G C C . G T . A ----
buk7-C2R2	 C T . A T . A ----
buk7-C2R3	 T T C . G ----
buk7-C2R4	 T T C . G A ----
buk7-C3R1	 T T C G C . G ----
buk7-C3R2	 T T C . G T . A ----
buk7-C3R3	 C C T . A T . A ----
buk7-C3R4	 C C . G T . A T . A ----
buk7-C1R4	 C T . A TAAC
Majority	AGGTGATGGGGGCGTTG--AGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAAGGCTAGGTCGGTGGGGGG
	90 100 110 120 130 140 150 160
	-----+-----+-----+-----+-----+-----+-----+-----+
buk7-C1R1	 --
buk7-C1R2	 -- G
buk7-C1R3	 --
buk7-C2R1	 -- G
buk7-C2R2	 -- T
buk7-C2R3	 --
buk7-C2R4	 -- A
buk7-C3R1	 -- G
buk7-C3R2	 -- A
buk7-C3R3	 --
buk7-C3R4	 G . -- G
buk7-C1R4	 G . GG G
Majority	CAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
	170 180 190 200 210
	-----+-----+-----+-----+-----
buk7-C1R1	 213 bp
buk7-C1R2	 G 213 bp
buk7-C1R3	 213 bp
buk7-C2R1	 A 213 bp
buk7-C2R2	 G 213 bp
buk7-C2R3	 G 213 bp
buk7-C2R4	 213 bp
buk7-C3R1	 213 bp
buk7-C3R2	 213 bp
buk7-C3R3	 G 213 bp
buk7-C3R4	A A 213 bp
buk7-C1R4	 219 bp

[illegible]

Similarity: 93.2-99.1

S. bulbocastanum-1, blb1

Majority CCTTTTGTAGAAATTCGGTCGCGAAAAATATATATTATTATTTATTTGGAGAAACGACGG-GGGGGGGTTTGAAAATGGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pSbB3.6-.....
pSbB3.2-.....
pSbB3.3C.....A.....

Majority CGTGACGGGAGGCGTCATGCGTCGGTGCCTGGAGGCTGCGTCGGTGGGGGGCAGGCTAGGGCGTTGGGAGGAAGGAGGTG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pSbB3.6T.....
pSbB3.2
pSbB3.3

Majority CTTAATAGAATTTAGAGTGCTATGAATGAC
170 180 190
-----+-----+-----+
pSbB3.6 189 bp
pSbB3.2 189 bp
pSbB3.3 190 bp

pSbB3.6	pSbB3.2	pSbB3.3	
***	99.5	98.4	pSbB3.6
	***	98.9	pSbB3.2
		***	pSbB3.3

Similarity: 98.4-99.5

S. bulbocastanum-2, blb2

Majority C A T T T T T G T C G A C A T T C G G T C G C G A A A A A A A T A T T A T T A T T T A T T T G G A G A A A C G A C C G G G G G G G G T T G A G G A T G G G C G
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
blb2-C2R1
blb2-C1R1T.....T.....
blb2-C2R2

Majority T G A C G G G G G G C G T C A T G C G T C G G T G C G T G G A G G C T G C G T C G G T G G G G G G C A G G C T G G G G C A T T G G G A G G A A G G A G G T G T T
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
blb2-C2R1T...T.....
blb2-C1R1
blb2-C2R2A.....

Majority T A A T A G A A T T T A G A G T G C T A T G A A T G A C
170 180
-----+-----+-----
blb2-C2R1 188 bp
blb2-C1R1 188 bp
blb2-C2R2 188 bp

blb2-C2R1	blb2-C1R1	blb2-C2R2	
***	97.9	98.4	blb2-C2R1
	***	98.4	blb2-C1R1
		***	blb2-C2R2

Similarity: 97.9-98.4

S. cajamarquense, cjm

Majority CCTTTTTGTCGAAATTCGGTCGTGCAATTGATTTTTTATTATTATTATCTTTTGCXGAAACGGCGTCGTTAGGACAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
cjm-C1R1A.....
cjm-C1R2A.....
cjm-C3R1C.....
cjm-C6R1 .T.....C.....

Majority TGATGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCCGGTGGGGGGCAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
cjm-C1R1
cjm-C1R2
cjm-C3R1
cjm-C6R1T.....

Majority CTAGGGCGTTGGGAGGAAGGAAGGAAAGGAGGTGTTTAAAAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
cjm-C1R1C 220 bp
cjm-C1R2 224 bp
cjm-C3R1 224 bp
cjm-C6R1T..... 224 bp

cjm-C1R1	cjm-C1R2	cjm-C3R1	cjm-C6R1	
***	99.5	99.1	97.7	cjm-C1R1
	***	99.6	98.2	cjm-C1R2
		***	98.7	cjm-C3R1
			***	cjm-C6R1

Similarity: 97.7-99.6

S. canasense, can

Majority CCTTTTGTGCGAAATTCGGTCGTGTAAT-----TATTATTTATTTTTGCAGAAAGTCGGTCGTTAGGACAGGT
 10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
can-C1R1AGAAAAATAT.....G.....CGAC.....
can-C1R2
can-C1R3
can-C1R4
can-C1R4
can-C1R4

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGAGGCTAGGTTCGGTGGGGGGCAGGCT
 90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
can-C1R1
can-C1R2T.....
can-C1R3
can-C1R4

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
 170 180 190 200 210
-----+-----+-----+-----+-----+-----+
can-C1R1T..... 213 bp
can-C1R2G..... 202 bp
can-C1R3G.....G..... 202 bp
can-C1R4 202 bp

can-C1R1	can-C1R2	can-C1R3	can-C1R4	
***	91.1	90.6	92.0	can-C1R1
	***	97.7	99.1	can-C1R2
		***	98.6	can-C1R3
			***	can-C1R4

Similarity: 90.6-99.1

S. candolleianum, cnd

Majority CCTTTTTGTCGAAATTXGGTCGTGTAATTGAAAAATATXATTATTTATTTXTTGCAGXAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
cnd-C1R1C.....AC.....A.....A.....
cnd-C3R1T.....T.....G.....
cnd-C3R2 .T.....AT.....T.....T.....G.....
cnd-C5R1C.....AT.....A.....A.....

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCAXGCGTCGGTGCGCGTGAGGCTAGGTTCGGTGG-GGGGCAGGC
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
cnd-C1R1C.....-.....
cnd-C3R1T.....T.....
cnd-C3R2T.....G.....
cnd-C5R1C.....C.....-

Majority TAGGGCGTTGGGXGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
cnd-C1R1T..... 213 bp
cnd-C3R1A..... 214 bp
cnd-C3R2A..... 213 bp
cnd-C5R1T.....C..... 213 bp

cnd-C1R1	cnd-C3R1	cnd-C3R2	cnd-C5R1	
***	96.3	95.3	98.6	cnd-C1R1
	***	98.6	95.3	cnd-C3R1
		***	94.4	cnd-C3R2
			***	cnd-C5R1

Similarity: 94.4-98.6

S. cardiophyllum, cph

Majority CCTTTTGTGTCGAAATTCGGTAGTGCGGTTGAAAAATATATTATTATTTATTTGCAGAAACGACATTCGGATTGAGACGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
cph-C2R1 ...G.....CG.....
cph-C3R1T.....
cph-C3R2G.....A....
cph-C3R3
cph-C3R4

Majority CGTTAGGACAGGTGATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCACGCGTCGGTGCGTGAGGCTAGGTCGGTG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
cph-C2R1C.....
cph-C3R1T.....T.....
cph-C3R2
cph-C3R3
cph-C3R4C.....

Majority GGGGGCAGGCTAGGGCGTTGGGAGGAAGGGGGTGTTTAATAGAATTTAGAGTGCTGTGAATGAC
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+-----+
cph-C2R1 224 bp
cph-C3R1T..... 224 bp
cph-C3R2T..... 224 bp
cph-C3R3 224 bp
cph-C3R4G..... 224 bp

cph-C2R1	cph-C3R1	cph-C3R2	cph-C3R3	cph-C3R4	
***	96.4	96.9	98.2	97.3	cph-C2R1
	***	96.9	98.2	97.3	cph-C3R1
		***	98.7	97.8	cph-C3R2
			***	99.1	cph-C3R3
				***	cph-C3R4

Similarity: 96.4-99.1

S. chacoense-1, chcl1

DIRECT SEQUENCING - 213 bp

S. chacoense-2, chc2

Majority	TCTTTTGTGTCGAAATTCGGTCTGTGAATTGAAGAAAATATATTTATCTATTTTTGCAGAAACGGCGCCGTTAGGACAGGT
	-----+-----+-----+-----+-----+-----+-----+-----+
chc2-C1R1	 C
chc2-C1R2	 G C
chc2-C1R3	 T C
chc2-C1R4	C G TA T T C
chc2-C1R5	 G G G C
chc2-C1R6	 T G GG G G
chc2-C1R7	C G TA T T
chc2-C1R9	 C
chc2-C1R10	 C
Majority	GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGAGGCTGGGTTCGGTGGGGGGCAGGCT
	-----+-----+-----+-----+-----+-----+-----+-----+
chc2-C1R1	 G C C T
chc2-C1R2	 T T
chc2-C1R3	 G A
chc2-C1R4	 G G
chc2-C1R5	 G G
chc2-C1R6	 T G A
chc2-C1R7	 G A
chc2-C1R9	 C G
chc2-C1R10	 C G
Majority	AGGGCGTTGGGAGGAAGGAGGCGTTTAATAGAATTTAGAGTGCTATGAATGAT
	-----+-----+-----+-----+-----+-----+-----+-----+
chc2-C1R1	 A T G A 213 bp
chc2-C1R2	 A T G A 213 bp
chc2-C1R3	 A T G A 213 bp
chc2-C1R4	 A T G A 213 bp
chc2-C1R5	 A T G A 213 bp
chc2-C1R6	 A T G A 213 bp
chc2-C1R7	 A T G A 213 bp
chc2-C1R9	 A T G A 213 bp
chc2-C1R10	 A T G A 213 bp

[illegible]

Similarity: 90.1-99.1

S. chaucha, cha

Majority	CCTTTTGTGTCGAAATTCGGTCTGTGTAATAGAAAAAATATTATTATTTATTTTGTAGAAACGACGTC---GTTAGGAC-									
	10	20	30	40	50	60	70	80		
	-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----									
cha-C1R1	.T.....T.....		G..TTT...-		-...AT....C..C.....		A.TCGGA..GA...	G		
cha-C7R1	.....		.....		.....		---	.....	-	
cha-C7R2	.....		.....		.....		---	.....	-	
cha-C7R3	.....		C.G.....		.....		---	.....	-	
cha-C15R1	.....		.....		.....		---	.....	-	
cha-C6R1	.....		.....		.....		---	.....	-	
cha-C7R4	C.....		.....		.....		---	.....	-	
cha-C13R1	.....		.....		.....		---	.....	-	
cha-C13R2	.....		C.....		.....		---	.....	-	
cha-C15R2	.....		.....		.....		---	.....	-	
Majority	----TA--ACAGGTGATGGGGGCGTTGXGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGT									
	90	100	110	120	130	140	150	160		
	-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----									
cha-C1R1	TCGT..GG.....		---		.....		---			
cha-C7R1	-----		---		T.....		.....			
cha-C7R2	-----		A.....		---		A.....			
cha-C7R3	-----		---		.....		.....			
cha-C15R1	-----		---		.....		T.....			
cha-C6R1	----..--		G.....		.....		.....			
cha-C7R4	----..--		G.....		.....		T.....			
cha-C13R1	----..--		G.....		.....		T.....			
cha-C13R2	----..--		G.....		.....		.....			
cha-C15R2	----..--		G.....		T.....		.....			
Majority	CGGTGGGGGGCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT									
	170	180	190	200	210	220				
	-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----									
cha-C1R1	.....		-.....		.....					222 bp
cha-C7R1	.....		A.....		.....					213 bp
cha-C7R2	.....		.....		.....					213 bp
cha-C7R3	.....		.....		.....					213 bp
cha-C15R1	.....		A.....		.....					213 bp
cha-C6R1	.....		.....		.....					219 bp
cha-C7R4	.....		.....		A.....					219 bp
cha-C13R1	.....		.....		A.....					219 bp
cha-C13R2	.....		.....		A.....					219 bp
cha-C15R2	.....		.....		.....					219 bp

cha-C1R1	cha-C7R1	cha-C7R2	cha-C7R3	cha-C15R1	cha-C6R1	cha-C7R4	cha-C13R1	cha-C13R2	cha-C15R2	
***	83.8	83.4	83.4	83.4	86.0	84.7	85.2	85.2	85.6	cha-C1R1
	***	98.3	98.3	98.3	96.5	95.2	95.6	95.6	96.1	cha-C7R1
		***	98.3	98.3	96.5	95.2	95.6	95.6	96.1	cha-C7R2
			***	98.3	96.5	95.2	95.6	95.6	96.1	cha-C7R3
				***	96.5	95.2	95.6	95.6	96.1	cha-C15R1
					***	98.7	99.1	99.1	99.6	cha-C6R1
						***	99.6	98.7	98.3	cha-C7R4
							***	99.1	98.7	cha-C13R1
								***	98.7	cha-C13R2
									***	cha-C15R2

Similarity: 83.4-99.6

S. cheesmaniae, che

Majority CCTTTTGTGTTGAAATTTGATCTCGTAATTGAAAAAAAAAATATACTCATTTATTTTTTTTTT-GCGGAAAATACGTTGCGGA
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
che-C1R1-.....
che-C1R2C.....-.....
che-C2R1-.....T.....
che-C3R1T.....-.....

Majority TTGAGGCGTCATTAGGATATGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGTCGCGTCGGTGCGTGAGAGGT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
che-C1R1
che-C1R2
che-C2R1A.....
che-C3R1C.....

Majority TTTAAAGCGGGGGCGGGCTAGGGCGTTGGGAGGAAGGTTGTGTTTAATAGATTTTAGAGTGCAATGAATGAC
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+-----+
che-C1R1-..... 231 bp
che-C1R2 232 bp
che-C2R1A..... 232 bp
che-C3R1 232 bp

che-C1R1	che-C1R2	che-C2R1	che-C3R1	
***	99.1	97.9	98.7	che-C1R1
	***	97.9	98.7	che-C1R2
		***	97.4	che-C2R1
			***	che-C3R1

Similarity: 97.4-99.1

S. chilense, chi

Majority CCTTTTGTGAAATTTGATCTCGTAGTTGAAAAAA-TATACTCATGTATTTATTTTGC GTTAAATACGTTCCGATTG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
chi-C1R1A.....
chi-C1R2-.....
chi-C1R4-.....
chi-C4R3-.....

Majority AGAGTTCATTAGGATACGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGTGCGTCGGTGCGTGGAGGGTTTT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
chi-C1R1A.....
chi-C1R2
chi-C1R4T.....
chi-C4R3

Majority AAAGCGGGGGCGGGCTAGGGCGTTGGGCGGAAGTTGTGTTT--AATAGATTTTAGAGTGCAATGAATGAC
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+-----+
chi-C1R1TT..... 232 bp
chi-C1R2--..... 229 bp
chi-C1R4T.....T.....--..... 229 bp
chi-C4R3--.....C..... 229 bp

chi-C1R1	chi-C1R2	chi-C1R4	chi-C4R3	
***	98.3	97.0	97.8	chi-C1R1
	***	98.7	99.6	chi-C1R2
		***	98.3	chi-C1R4
			***	chi-C4R3

Similarity: 97.0-99.6

S. chmielewskii, cml

Majority CCTTTTT-GTTGAAATTTGATCTCGTAATTGGAAAAAAAA-TATACTAATTTATTTTTTTTTXGCGGAAAATACGTTTCGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
cml-C2R1-.....-.....T.....T.....
cml-C2R2T.....-.....T.....
cml-C3R1-.....A.....A.....-.....
cml-C5R1-.....-.....-.....

Majority ATTGAGACGTCATTAGGATATGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGTCGTCGGTGCCTGGAGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
cml-C2R1A.....C.....
cml-C2R2
cml-C3R1 ..AA.....C.....
cml-C5R1A.....A.....

Majority TTTTAAAGCGGGGGCGGGCTAGGGCGTTGGGAGGAAGGTTGTGTTTAATAGATTTTAGAGTGCAATGAATGAC
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+-----+
cml-C2R1A..... 232 bp
cml-C2R2A..... 233 bp
cml-C3R1A..... 232 bp
cml-C5R1 .A.....A.....C..... 231 bp

cml-C2R1	cml-C2R2	cml-C3R1	cml-C5R1	
***	97.0	92.2	94.4	cml-C2R1
	***	91.8	94.4	cml-C2R2
		***	93.5	cml-C3R1
			***	cml-C5R1

Similarity: 91.8-97.0

S. chomatophilum, chm

Majority C C T T T T G G T C G A A A T T C G G T C G A G T G A T T G A A A A A T A T A T T A T T A T T T T T T G C A G A A A C G A C A T T C G G A T T G A G A C G T C
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
chm-C1R1G.....
chm-C1R2AT..C.....C.....
chm-C1R3
chm-C2R1G.....
chm-C2R2AT..C.....C.....

Majority G T T A G G A C G G G T G A T G G G G G C G T T G A G G A T G G G C G T G A C G G G C G G C G T C A T G C G T C G G T G C G T G G A G G C T A G G C C G G T G G
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
chm-C1R1
chm-C1R2
chm-C1R3A.....
chm-C2R1A.....A.....
chm-C2R2 .C.....

Majority G G G T C A G G C T A G G G C G T T G G G A G G A A G G A G G T G T T T A A T A G A A T T T A G A G T G C A A T G A A T G A T
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
chm-C1R1C..... 223 bp
chm-C1R2 223 bp
chm-C1R3 223 bp
chm-C2R1 223 bp
chm-C2R2 223 bp

chm-C1R1	chm-C1R2	chm-C1R3	chm-C2R1	chm-C2R2	
***	97.3	98.7	98.7	96.9	chm-C1R1
	***	97.8	96.9	99.6	chm-C1R2
		***	99.1	97.3	chm-C1R3
			***	96.4	chm-C2R1
				***	chm-C2R2

Similarity: 96.4-99.6

S. chrysotrichum, chr

Majority CCTTTTTTGC GGAAATCCGTCGTCTATTCTATTTCGGCGAATCATAATTTTTTTGGCGGAAACGACGTTTGCTTGGGAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
chr-C1R1
chr-C5R1C.....T.....
chr-C5R2G.....

Majority AGTTGAGGAAGGGCCAGGAACGCGCGCCGTCGCATATGGAGGCTAGGGGCGGTGGTGTGGAGGCTAGGAATGAGGCTTAA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
chr-C1R1
chr-C5R1A.....
chr-C5R2A.....T.....G..A.....T.....A.....

Majority TAGAATTAAGAGTGCTAGGGATGAT
170 180
-----+-----+-----
chr-C1R1 185 bp
chr-C5R1T..... 185 bp
chr-C5R2 185 bp

chr-C1R1	chr-C5R1	chr-C5R2	
***	97.8	96.2	chr-C1R1
	***	94.1	chr-C5R1
		***	chr-C5R2

Similarity: 94.1-97.8

S. circaeifolium subsp. *quimence*, circ

Majority	CCTTTTTTGTCTGAAATTCGGTCTGTAA-CTAAGAAAATATATTTATTTTATTTGCAGAAACGACATTCGGATTGGGACG																																																																															
	10										20										30										40										50										60										70										80									
	-----+-----+-----+-----+-----+-----+-----+-----+-----+																																																																															
pScB4.1	G.....																																																																															
pScB4.5	-.....																																																																															
crc5S.2	-.....																																																																															
crc5S.3	T..G.....C.....																																																																															
crc5S.4	-.....																																																																															
crc5S.5	-.....																																																																															
crc5S.6	G.....																																																																															
crc5S.7	C..--.....																																																																															

Majority	TCGTCGTTAGGAGAGGTTGACGGGGGCGTTGAGGATGGGAGTGTACGGGCGGCGTCATGCGTTGGTGCGTGAGGCTAGGTC
	90 100 110 120 130 140 150 160
	-----+-----+-----+-----+-----+-----+-----+
pScB4.1	.....
pScB4.5	.....
crc5S.2	.....
crc5S.3	.....
crc5S.4	AA.....
crc5S.5	.....
crc5S.6	-----
crc5S.7	-----

Majority	GGTGGGGGGCAGGCTAGGGCGTTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTACGAATGAT										
	170	180	190	200	210	220					
	-----+-----+-----+-----+-----+-----										
pScB4.1	.....										229 bp
pScB4.5	.....										228 bp
crc5S.2	.....										228 bp
crc5S.3	.....										229 bp
crc5S.4	T.....										228 bp
crc5S.5	.....										228 bp
crc5S.6	T.....										222 bp
crc5S.7	T.....										220 bp

[illegible]

Similarity: 94.3-100.0

S. clarkiae, cla

Majority C A T T T T T T G C C G A G A T T T C G T C G T C T G T T C G G C G A A T G A T T A T T T C T T T C G G C G G T T G G G T C G T T T G C T T G G G C A G A G A C
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
cla-C1R1
cla-C1R2A.....
cla-C2R1
cla-C4R1
cla-C5R1A.....T.....A.....

Majority G T C G T T A G G A C G G C T G A G G A A G G G C G T C G C C G G C G C G T G G A G G C T A G G G C G G T G G T G C G C A G G C T G G G G C G T G G G G G G G -
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
cla-C1R1-
cla-C1R2-
cla-C2R1G
cla-C4R1A.....
cla-C5R1-

Majority A T G A A T G A G G T T T A A T A G A A T T A A G A G T G C T A G G A A T G A C
170 180 190 200
-----+-----+-----+-----+
cla-C1R1A..... 199 bp
cla-C1R2 199 bp
cla-C2R1 200 bp
cla-C4R1 199 bp
cla-C5R1 .G..... 199 bp

cla-C1R1	cla-C1R2	cla-C2R1	cla-C4R1	cla-C5R1	
***	99.0	99.0	99.0	97.5	cla-C1R1
	***	99.0	99.0	97.5	cla-C1R2
		***	99.0	97.5	cla-C2R1
			***	97.5	cla-C4R1
				***	cla-C5R1

Similarity: 97.5-99.0

S. cleistogamum, cle

Majority CTTTTTTCGXXXXXXXXXXXXTCGTCTATTCGXCCGATGACXATTTTTTTTGCXGXAGGGCCXTTTGCTTGGGCAGAGXC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
cle-C1R1CCGAAATTTCG.....A....C...G.....G.C.....T.....T.
cle-C4R1CCGAAATTTCG.....A.....G.....G.C.....T.....T.
cle-C1R2-----G.....T.....T.T.....G...A.....A.
cle-C8R1-----G.....T.....T.T.....G.....A.

Majority GTCGXTAGGACGGCTGAGGAXGG-XGTCGGCGGCGCGCGGAGGCTAGGGCG-ACGGGGTGCGXGTAATGAGGTTTAATAGA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
cle-C1R1C.....T.....G..-A...A.....T.-.....T.....
cle-C4R1C.....G..-C.....-.....A.G.....
cle-C1R2T.....A..GC.....T.T.....A.A.....
cle-C8R1T.....A.....A..TA...A.....CT...-.....T.....

Majority ATTAAGAGTGCTACGATTGAC
170 180
-----+-----+
cle-C1R1 179 bp
cle-C4R1G..... 179 bp
cle-C1R2 170 bp
cle-C8R1 169 bp

cle-C1R1	cle-C4R1	cle-C1R2	cle-C8R1	
***	95.0	78.8	84.0	cle-C1R1
	***	82.9	83.4	cle-C4R1
		***	89.9	cle-C1R2
			***	cle-C8R1

Similarity: 95.0-78.8

S. clivorum, cli

Majority TTTTCCGATCGAAATTCTTCATAATTCGTGTATTTGATAATATTTATTTATATTTTTTGC GGAAACGTCATTCTGAT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
cli-C1R1
cli-C2R1
cli-C3R1C.....
cli-C4R1

Majority CGAGACGTCGTTAGGACCTGTGAGGGGGCGGTGACAGGCGGCGTTGTGTGGAGGGTCGGTCGGTAGGGGTGCAGGATAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
cli-C1R1
cli-C2R1G..
cli-C3R1
cli-C4R1

Majority GCGTTGGTAGGAAGGAGGTGTTTAAATAAGATTAGAATGCAATTACTGAT
170 180 190 200
-----+-----+-----+-----+
cli-C1R1 209 bp
cli-C2R1 209 bp
cli-C3R1 ..T..... 209 bp
cli-C4R1G..... 209 bp

cli-C1R1	cli-C2R1	cli-C3R1	cli-C4R1	
***	99.5	99.0	99.5	cli-C1R1
	***	98.6	99.0	cli-C2R1
		***	98.6	cli-C3R1
			***	cli-C4R1

Similarity: 98.6-99.5

S. cochoae, coc

Majority CCTTTTGGCCGAAATTCGGCATGATTCGGTGTGTCTGACGGCCGGTGCATTTTTTCCGCAGAAACGGGCGTGCCG---GG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
coc-C1R1
coc-C1R2
coc-C3R1CCG..
coc-C9R1A.....C.....
coc-C9R2A.....
Majority GGTCGCAACGCGCCGGTGCGAGGGGGCTAGGGCGGTGGGGCGCTGAGGCTTAATAGAATTTGGAGCGCTAGGGATGAC
90 100 110 120 130 140 150
-----+-----+-----+-----+-----+-----+-----+
coc-C1R1G.....155bp
coc-C1R2155bp
coc-C3R1158bp
coc-C9R1T.....155bp
coc-C9R2155bp

coc-C1R1	coc-C1R2	coc-C3R1	coc-C9R1	coc-C9R2	
***	99.4	97.5	97.5	98.7	coc-C1R1
	***	98.1	98.1	99.4	coc-C1R2
		***	96.2	97.5	coc-C3R1
			***	98.7	coc-C9R1
				***	coc-C9R2

Similarity: 96.2-99.4

S. commersonii-1, cmm1

DIRECT SEQUENCING - 224 bp

S. commersonii-2, cmm2

Majority CCTTTTTTGTGCGAAATTCGGTCGTGCAATTGAAAAAATGTATTTATTTATTTTTTGCAGAAACXACGTCGTTAGGACAG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
cmm2-C1R1G.....
cmm2-C1R2T.....
cmm2-C2R1G.....
cmm2-C3R1A.....T.....

Majority GACAGGTGATGXGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTGGGTCGGTGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
cmm2-C1R1G.....
cmm2-C1R2AT.....
cmm2-C2R1G.....A.....
cmm2-C3R1C.....T.....

Majority GCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+
cmm2-C1R1 220 bp
cmm2-C1R2T..... 220 bp
cmm2-C2R1 219 bp
cmm2-C3R1 220 bp

cmm2-C1R1	cmm2-C1R2	cmm2-C2R1	cmm2-C3R1	
***	98.2	99.1	98.2	cmm2-C1R1
	***	97.3	98.2	cmm2-C1R2
		***	97.3	cmm2-C2R1
			***	cmm2-C3R1

Similarity: 97.3-99.1

S. corneliomuelleri, crm

Majority CCTTTTGTGAAATTTGATCTCGTAGTTGAAAAAATATACTCATGTATTTATTTTGCCTTAAATACGTTCCGATTGA
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
crm-C1R1-.....
crm-C2R1-.....
crm-C3R1T.....

Majority GAGTTCATTAGGATATGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGXGCGTCGXTGCGTGGAGGGTTTTA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
crm-C1R1-A..G.....T.....
crm-C2R1-----
crm-C3R1C.....CA.....T.....G.....

Majority AAGCGGGGGCGGGCTAGGGCGTTGGGCGGAAGGTTGTGTTTAATAGATTTTAGAGTGCAATGAATGAC
-----+-----+-----+-----+-----+-----+-----
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----
crm-C1R1 227 bp
crm-C2R1G----- 210 bp
crm-C3R1 229 bp

crm-C1R1	crm-C2R1	crm-C3R1	
***	90.0	96.1	crm-C1R1
	***	89.5	crm-C2R1
		***	crm-C3R1

Similarity: 89.5-96.1

S. crinitum, cri

Majority CCTTTTTTTXCCCGTCGAGCATTCGGCGAATCATTATTATTATTATTATTTXGGCGGAAACGACATTCGTTAGGGC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
pScri1A.....T.....
pScri2-.....-.....

Majority AGCCGAGGAAGCGCGCGCCGGTGCGTGGAGGCCAGGGGCGGTGGTGTGCCGGCTAGGGCGTCGGGAGGAATGAGGTTTAA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pScri1
pScri2

Majority TAGAATTTAGAGCGCTAGGAAXGAC
170 180
-----+-----+-----
pScri1A... 185 bp
pScri2G... 183 bp

cri1	cri2	
***	98.4	cri1
	***	cri2

Similarity: 98.4

S. curtilobum, cur

Majority	CCTTTTGTGCGAAATTCGGTCGTGTAATAGAAAAATATTATTATTTAT-TTTTGTGXAGAA-----ACGACG	10	20	30	40	50	60	70	80
	-----+-----+-----+-----+-----+-----+-----+-----+-----+								
cur-C1R1	-.....T.....								
cur-C2R1	-.....T.....								
cur-C3R1	.T.....A.....-.....T.....								
cur-C5R1	-.....T.....								
cur-C5R2	-.....C.....								
cur-C10R1	C...T...TTTTT.....C.....								
cur-C16R1	C.....C.....G.T...C...-...-...G.....C.....CGACATTCGGATTGA...								
cur-C22R2	-.....C.....								

Majority	TCGTTAGGAC-----AGGTGATGGGGCGCTTXXGAGGATGGGCGTGACGGGCGGCCTCATGCGTCGGTGCGCGTGGAGGCT
	90 100 110 120 130 140 150 160
	-----+-----+-----+-----+-----+-----+-----+
cur-C1R1	 TAAC GG
cur-C2R1	 TAAC GG
cur-C3R1	 ---- GGG
cur-C5R1	 TAAC T . GG
cur-C5R2	 ---- --
cur-C10R1	 ---- -- . G
cur-C16R1	 ---- -- G --
cur-C22R2	 ---- --

Majority	AGGTC-GGTGGGGGCGAGGCTAGGGCGTTGGGAGGAAGGA-----GGTGTTTAATAGAATTTAGAGTGCTATGAATGAT	
	170 180 190 200 210 220 230	
	-----+-----+-----+-----+-----+-----+-----	
cur-C1R1	-.....G.....-----.....	219bp
cur-C2R1	-.....G.....-----.....	219bp
cur-C3R1	-.....G.....-----.....A.....	215bp
cur-C5R1	-.....-----.....	219bp
cur-C5R2	-.....-----.....	213bp
cur-C10R1	C.....AAGGA.....A.....	220bp
cur-C16R1	-.....-----.....C.....	223bp
cur-C22R2	-A.....-----.....	213bp

[illegible]

Similarity: 83.3-99.6

S. demissum, dem

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATAGAAAAATATTATTATTTATTTTGTAGAAACGACGTCGTTAGGACTAAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
dem_5S.4
dem_5S.5
dem_5S.6

Majority AGGTGATGGGGCGTTGGGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
dem_5S.4A.....
dem_5S.5 ...A.....
dem_5S.6

Majority CAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
dem_5S.4 219 bp
dem_5S.5A..... 219 bp
dem_5S.6 219 bp

dem_5S.4	dem_5S.5	dem_5S.6	
***	98.6	99.5	dem_5S.4
	***	99.1	dem_5S.5
		***	dem_5S.6

Similarity: 98.6-99.5

S. dimorphandrum, dim

Majority CTTTTTGTGCGAAATTTTCGGCACGGTTTCGCCTATTTGATAATATATGTTTTGGCAGAAACGGGATTTGGGCCGATACGCC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
dim-C1R1
dim-C2R1C.....
dim-C1R2
dim-C4R1A.....

Majority GCGAGGAAGGTGATGXXXXXXXXXXXXCGGGCGTGCAGGCTAGGGCGGTGGGAGGAAAGAGGTTTAATAGAATTTAGAG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
dim-C1R1
dim-C2R1GGGGCGCGCAGGA.....
dim-C1R2GGGGCGCGCAGGA.....
dim-C4R1

Majority TGCTAGGAATGAC
170
-----+---
dim-C1R1 160 bp
dim-C2R1 173 bp
dim-C1R2 173 bp
dim-C4R1G. 160 bp

dim-C1R1	dim-C2R1	dim-C1R2	dim-C4R1	
***	91.9	92.5	98.8	dim-C1R1
	***	99.4	90.8	dim-C2R1
		***	91.3	dim-C1R2
			***	dim-C4R1

Similarity: 90.8-99.4

S. diversiflorum, div

Majority CTTTTTTTGCCGAAATTCGTCGTCCAXTCGGCGAGTGATTATTTTTTCCGGCGGTCGGGTCGTTTGCTTGGGCAGAGAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
div-C2R1C.....
div-C3R1 AC.....C.....
div-C3R2T.....
div-C3R3T.....C.....G.....

Majority GTCGTTAGGACGTTGAGGAAGGGCGTCGCCGGCGCGTGGAGGCTAGGGCGGTGGTGCGCAGGCTAGGGCGTGGGGGGAG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
div-C2R1A.....T.....
div-C3R1
div-C3R2
div-C3R3

Majority GAATGAGGTTTAAXAGAATTAAGAGTGCTGGAAATGAT
170 180 190
-----+-----+-----
div-C2R1T..... 198 bp
div-C3R1C..... 198 bp
div-C3R2T..... 198 bp
div-C3R3C..... 198 bp

div-C2R1	div-C3R1	div-C3R2	div-C3R3	
***	97.5	98.5	97.0	div-C2R1
	***	98.0	97.5	div-C3R1
		***	98.5	div-C3R2
			***	div-C3R3

Similarity: 97.0-98.5

S. dulcamara, dulc

Majority CCTTTTGTGCGGAATTCGGGCACGGTTTCGTCTACTCGACAACAAGTATTTTTTT-GCGGACACGACATTCGGGGCCTAGA
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
dulc_5S.1-.....
dulc_5S.2-.....
dulc_5S.3T.....
dulc_5S.4-.....
dulc_5S.5-.....

Majority CGCCGTTAGGACGTGCGATGGAGGCGCTTAGGACGGGCGTGACAGGCGGCAGGGTGCGTCGG-TGCGT--GGAGGGCAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
dulc_5S.1-.....--.....
dulc_5S.2-.....--.....
dulc_5S.3-.....--.....
dulc_5S.4G.....TT.....
dulc_5S.5-.....--.....

Majority GC-GCATGCCGGGGCGTT-GGGAGGGGAAGGGGGTGTTTAATAGAATTTAGAGCGCTAGGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
dulc_5S.1 ..-.....-.....-..T..... 219 bp
dulc_5S.2 ..-.....-..... 220 bp
dulc_5S.3 ..-.....T.....G..... 222 bp
dulc_5S.4 ..T.....-.....T...T..... 222 bp
dulc_5S.5 ..-.....T..... 221 bp

dulc_5S.1	dulc_5S.2	dulc_5S.3	dulc_5S.4	dulc_5S.5	
***	99.1	97.8	97.3	98.7	dulc_5S.1
	***	98.7	97.3	99.6	dulc_5S.2
		***	96.0	99.1	dulc_5S.3
			***	96.9	dulc_5S.4
				***	dulc_5S.5

Similarity: 96.0-99.6

S. ehrenbergii, ehr

Majority CCTTTTGTGTCGAAATTCGGTCGTGTAATTGAAAAAGTACATTATTATTTATTTGCAGAAACGACATTGGGATTGAGACGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
ehr-C1R1C.....
ehr-C2R1
ehr-C3R1 .T.....
ehr-C4R1A.....
ehr-C3R2T.....

Majority CGTTAGGACAGGTGATGGGGGGCGTTGAGGAGGGGCGTGACGGGXGGCGTCGTGCGTCGGTG----AGGCTAGGTCGGT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
ehr-C1R1A-----
ehr-C2R1A-----
ehr-C3R1A.....A.....
ehr-C4R1A.....C.....
ehr-C3R2C.....CATGG.....

Majority GGGGGGCGGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTGGAGTGCTATGAATGAC
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
ehr-C1R1 202 bp
ehr-C2R1G..... 202 bp
ehr-C3R1 205 bp
ehr-C4R1C.....A..... 206 bp
ehr-C3R2 225 bp

ehr-C1R1	ehr-C2R1	ehr-C3R1	ehr-C4R1	ehr-C3R2	
***	99.1	83.6	83.1	88.4	ehr-C1R1
	***	83.6	83.1	88.4	ehr-C2R1
		***	96.4	89.3	ehr-C3R1
			***	89.3	ehr-C4R1
				***	ehr-C3R2

Similarity: 83.1-99.1

S. elatius, ela

Majority CTTTTTTTGCCGAAATTCGTCGTCTATTCGGCGAATGATTATTTTTTTGGGCGGTTGGGTCGTTTGCTCGGGCAGAGAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
ela-C1R1
ela-C1R2AAA.....
ela-C2R1 .C.....G.....C.....T.....C.....
ela-C3R1-.....

Majority GTCGTTAGGACGGTTGAGGAAGGGCGTCGCCGGGGCGTGGAGGCTAGGGCGGTGGTGTGCAGGTTAGGGCGTGGGGGGGA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
ela-C1R1
ela-C1R2G
ela-C2R1C.....A.....T.....
ela-C3R1

Majority GGAATGAGGTTTAAATAGAATTAAGAGTGCTAGGAATGAT
170 180 190
-----+-----+-----+-----
ela-C1R1 199 bp
ela-C1R2 199 bp
ela-C2R1C..... 199 bp
ela-C3R1G..... 198 bp

ela-C1R1	ela-C1R2	ela-C2R1	ela-C3R1	
***	98.0	95.5	99.0	ela-C1R1
	***	93.5	97.0	ela-C1R2
		***	94.5	ela-C2R1
			***	ela-C3R1

Similarity: 93.5-99.0

S. erianthum, eri

Majority CCTTTTGTGCGAAATTCGGCACAACCTTCGTCTATTTGATGATATTTTTTCCCGCGGAAACGGCATTTGGTCCGGGAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
eri-C1R1
eri-C1R2C.-.....
eri-C1R3C.....
eri-C1R4C.....
eri-C1R5 .T.....A.....
eri-C1R6A.....

Majority CGTTAGGACAGGCGATGAGGACGGGCGTGCCAGGCGTCACCACGCGCCGGTGCGTGTAGGATAGGGCGGTGGGGTGCAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
eri-C1R1
eri-C1R2G...C.....
eri-C1R3T.....T..
eri-C1R4T.....
eri-C1R5T..
eri-C1R6T.....T.....A.....

Majority CTAGGGCGTTGGGAGGAATGTGGTTTAATAGAATTTAGAGTGCAAGGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
eri-C1R1 ...T..... 213 bp
eri-C1R2G..... 212 bp
eri-C1R3T.....T..... 213 bp
eri-C1R4G..... 213 bp
eri-C1R5A.....T.....C 213 bp
eri-C1R6 213 bp

eri-C1R1	eri-C1R2	eri-C1R3	eri-C1R4	eri-C1R5	eri-C1R6	
***	97.2	97.2	98.1	96.7	97.7	eri-C1R1
	***	95.3	97.2	95.3	96.2	eri-C1R2
		***	96.2	94.8	95.8	eri-C1R3
			***	95.8	97.2	eri-C1R4
				***	95.3	eri-C1R5
					***	eri-C1R6

Similarity: 94.8-98.1

S. esuriale, esu

Majority CTTTTTTTTGCCTGCCGGAATTCGGTGGTGTCGTTAGGTCGGTTGATTATGCCTTTAGGCGTTTGCTTGGGCAGGGACGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
esu-C1R1
esu-C3R1G.....
esu-C4R1
esu-C5R1T.....

Majority CGTTAGGACGGCTGAGGAAGGGCGTCGCCGGCGGGTGGAGGCTAGGGCGGTGGCGTTGGGGGGG-AGGACTGAGGTTTAA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
esu-C1R1G.....
esu-C3R1A.....-.....
esu-C4R1C...A.....-.....
esu-C5R1-.....C...

Majority TAGAATTAAGAGTGXTAGGAXTGAX
170 180
-----+-----+-----
esu-C1R1C....A...C 185 bp
esu-C3R1A....T...T 184 bp
esu-C4R1A....T...T 184 bp
esu-C5R1C....A...C 184 bp

esu-C1R1	esu-C3R1	esu-C4R1	esu-C5R1	
***	96.8	96.8	98.4	esu-C1R1
	***	97.8	96.2	esu-C3R1
		***	96.2	esu-C4R1
			***	esu-C5R1

Similarity: 96.2-98.4

S. etuberosum, etb

Majority ACATTTTGTAGAAATTCGGTCGTGTATTTGAAAAATATATATATATTTTTGCAGAAACGACATTCGGATTGATCGGTCTG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
etb-C1R1 ..T.....A.....
etb-C1R2 ..T.....
etb-C1R3A.....G.T.....
etb-C1R4G.....
etb-C1R5G.....G.....
etb-C1R6 ..T.....A.....
etb-C1R7G.....

Majority TGTAGGACAGGTGACGGGGCGCTTAGGATGGGCGTGAAAGGCGGCGTCAAGCGTCGGTGCCTGGAGGCTAGGTCTGGTGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
etb-C1R1T.....
etb-C1R2
etb-C1R3T.....A.....AAA.....
etb-C1R4G.....
etb-C1R5
etb-C1R6A.....
etb-C1R7G.....

Majority GGGGCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
etb-C1R1 223 bp
etb-C1R2 223 bp
etb-C1R3A..... 223 bp
etb-C1R4 223 bp
etb-C1R5 A..-..... 222 bp
etb-C1R6 223 bp
etb-C1R7C..... 223 bp

etb-C1R1	etb-C1R2	etb-C1R3	etb-C1R4	etb-C1R5	etb-C1R6	etb-C1R7	
***	99.1	94.6	97.8	96.9	98.2	97.3	etb-C1R1
	***	95.5	98.7	97.8	99.1	98.2	etb-C1R2
		***	95.5	95.1	94.6	95.5	etb-C1R3
			***	97.3	97.8	97.8	etb-C1R4
				***	96.9	97.8	etb-C1R5
					***	97.3	etb-C1R6
						***	etb-C1R7

Similarity: 94.6-99.1

S. ferocissimum, fer

Majority C A T T T T T T G C C G A A A T T T C G T C G T C T A T T C G G C G A A T G A T T A T T T T T T T T T G G C G G T T G G G T C G T T T G C T T T G G C A G A G A C
 10 20 30 40 50 60 70 80
 -----+-----+-----+-----+-----+-----+-----+-----+
fer-C1R1G.....
fer-C2R1A.....
fer-C2R2

Majority G T C G T T A G G A C G G T C G A G T A A G G G C G T C G C C G G C G C G T G G A G G C T A G G G C A T G T A A T G G T G T G C A G G T T T A G G G C G T G G T
 90 100 110 120 130 140 150 160
 -----+-----+-----+-----+-----+-----+-----+
fer-C1R1
fer-C2R1
fer-C2R2

Majority G G G A G G A A T G A G G T T T A A T A G A A T T A A G A G T G C T A G G A A T G A C
 170 180 190 200
 -----+-----+-----+-----+
fer-C1R1 203 bp
fer-C2R1A.. 203 bp
fer-C2R2C. 203 bp

fer-C1R1	fer-C2R1	fer-C2R2	
***	98.5	99.0	fer-C1R1
	***	98.5	fer-C2R1
		***	fer-C2R2

Similarity: 98.5-99.0

S. galapagense, gal

ONE RIBOTYPE - 233 bp

S. gourlayi-1, grl1

DIRECT SEQUENCING - 213 bp

S. gourlayi-2, grl2

Majority CCTTTTGTGCGAAAATTTGGTTCGTGTAATTGAAAAATATTATTATTTATTTTGCAGGAACGACGTCGTTAGGACAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
grl2-C1R1
grl2-C1R2
grl2-C1R3-.....G...G.....G...

Majority TGATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGC
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
grl2-C1R1
grl2-C1R2
grl2-C1R3

Majority TGGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
grl2-C1R1 214 bp
grl2-C1R2 C..... 214 bp
grl2-C1R3G..... 213 bp

grl2-C1R1	grl2-C1R2	grl2-C1R3	
***	99.5	97.7	grl2-C1R1
	***	97.2	grl2-C1R2
		***	grl2-C1R3

Similarity: 97.2-99.5

S. guamense, gua

Majority	CCTTTTTTGC	GAAATTC	CGTCGTCT	ATTCTATT	CGGCGAAT	CATAATTT	TTTTTGG	CGGAAAC	GACGTTT	GCTTGGG	AC
	10	20	30	40	50	60	70	80			
	-----+	-----+	-----+	-----+	-----+	-----+	-----+	-----+			
pSgua-5S1	..A.....										A...
pSgua-5S2	C.				T.....						
pSgua-5S3	.....					A.....					
pSgua-5S4	.....					G.....					
Majority	AGTTGAGGA	AAGGCC	CAGGAAC	GCGCGX	CGTCGC	CATATG	GAGGCT	AGGGG	CGGTGG	TGTGG	AGGCTTAA
	90	100	110	120	130	140	150	160			
	-----+	-----+	-----+	-----+	-----+	-----+	-----+	-----+			
pSgua-5S1	T....	C.....									
pSgua-5S2	.....	C.....									
pSgua-5S3	..A.....		ATT.....								
pSgua-5S4	A.....	A....T.....		G..A.....					A.....		
Majority	TAXAATTA	AAGAGT	GC	TAGGG	ATGAT						
	170	180									
	-----+	-----+									
pSgua-5S1	..G.....	A.....		185 bp							
pSgua-5S2	..G.....			185 bp							
pSgua-5S3	..A.....			185 bp							
pSgua-5S4	..A.....	G.....		185 bp							

pSgua-5S1	pSgua-5S2	pSgua-5S3	pSgua-5S4	
***	96.8	94.6	93.0	pSgua-5S1
	***	95.7	94.1	pSgua-5S2
		***	94.1	pSgua-5S3
			***	pSgua-5S4

Similarity: 93.0-96.8

S. habrochaites, hab

Majority CCTTTTGTGTTGAAATTTGATCTCGTAATTGAAAAAAAAAATATACTCATTTATTTATTTTTCGGGAAAATACGTTTCGGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
hab-C1R1C.....T.....
hab-C2R1-.....
hab-C2R2A.....

Majority TGAGACGTCATTAGGATATGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGTGCGTCGGTGCGTGAGGGTT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
hab-C1R1G.....T.....
hab-C2R1
hab-C2R2A.....

Majority TTAAAGCGAGGGGGCGGGCTAGGGCGTTGGAAGGAAGGTTGTGTTTAAATAGATTTTAGAGTGCAATGAATGAC
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+-----+
hab-C1R1 234 bp
hab-C2R1 233 bp
hab-C2R2--..... 232 bp

hab-C1R1	hab-C2R1	hab-C2R2	
***	97.9	96.6	hab-C1R1
	***	97.9	hab-C2R1
		***	hab-C2R2

Similarity: 96.6-97.9

S. hindsianum, hin

Majority CCTTTTXXCGCCGAAATTCCGTCGTCTATTTCGGCGAATCATTATTTTGTGGCGGTGGGTCGTTTGCTTGGGCCGAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
pShin-5S4-.....
pShin-5S7T.....

Majority CGTCGTTAGGACGGTTGAGGAAGGGCGTCGCCGGCGCGTGGAGGCTAGGGCGGTGGTGTGCAGGCTAGGGCGTGGGTGAG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pShin-5S4
pShin-5S7

Majority GAATXAGGTTTAAATAGAATTAGGAGTGCTAGGAATGAC
170 180 190
-----+-----+-----
pShin-5S4G..... 197
pShin-5S7A..... 198

pShin-5S4	pShin-5S7	
***	99.0	pShin-5S4
	***	pShin-5S7

S. hondelmannii, hdm

Majority CCTTTTTGTCGAAATTTGGTCGTGTAATTGAAAAATATTATTATTTATTTTTCAGGAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
hdm-C1R1
hdm-C1R2G.....
hdm-C3R1A.....
hdm-C4R1
hdm-C4R2G.....

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGG-----
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
hdm-C1R1CAGGCT
hdm-C1R2T.....
hdm-C3R1
hdm-C4R1A.....G.....
hdm-C4R2G.....

Majority -----CAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+-----+-----+
hdm-C1R1 AGGGCGTTGGGGGG..... 233 bp
hdm-C1R2 -----.....G..... 213 bp
hdm-C3R1 -----.....G..... 213 bp
hdm-C4R1 -----..... 213 bp
hdm-C4R2 -----..... 213 bp

hdm-C1R1	hdm-C1R2	hdm-C3R1	hdm-C4R1	hdm-C4R2	
***	90.1	90.6	90.6	90.6	hdm-C1R1
	***	97.9	97.9	97.9	hdm-C1R2
		***	98.3	98.3	hdm-C3R1
			***	98.3	hdm-C4R1
				***	hdm-C4R2

Similarity: 90.1-98.3

S. horridum, hor

Majority CTTTTTTCGX-XXXXXXXX-TCGTCTATTCGGCCGATGACTATTTTTTTTTT--GCXGXAGGGCCGTTTGCTTGGGCAGAG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
hor-C3R1-----.....T.T.....
hor-C22R1-----TT.T.T.....
hor-C23R1-----T-.T.T.....
hor-C9R1ATGAAATTTCG.....C.....-.G.C.....
hor-C9R2ACGAAATTTCG.....A.....G.....-.G.C.....
hor-C11R1ACGAAATTTCa.....A.....---.G.C..A.....

Majority XCGTCGXTAGGACGGCTGAGGAXGGC-GTCGGCGGCGCGCGGAGGCTAGGGCGXATGGGGTGcXGXAATGAGGTTTAATA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
hor-C3R1 A.....T.....A..TA.....T..T....A.A.....
hor-C22R1 A.....T..A.....A..TA.....T..T....A.A.....
hor-C23R1 A.....T.....T.....A..GC..A.....-..TT.....A.A.....
hor-C9R1 T....C..C.....G..-.....-.....T.T.....
hor-C9R2 T....C.....G..-.....-..C.....T.T.....
hor-C11R1 T....C.....G..-.....-..C.....T.T.....

Majority GAATTAAGAGTGCTAGGATTGAC
170 180
-----+-----+---
hor-C3R1T.....T 170 bp
hor-C22R1T..... 172 bp
hor-C23R1A..... 170 bp
hor-C9R1A.....T.A... 179 bp
hor-C9R2C..... 179 bp
hor-C11R1 178 bp

hor-C3R1	hor-C22R1	hor-C23R1	hor-C9R1	hor-C9R2	hor-C11R1	
***	97.8	94.0	84.2	85.2	84.7	hor-C3R1
	***	94.0	83.1	84.2	83.6	hor-C22R1
		***	82.5	83.1	83.1	hor-C23R1
			***	94.5	94.0	hor-C9R1
				***	96.2	hor-C9R2
					***	hor-C11R1

Similarity: 82.5-97.8

S. huaylasense, hua

ONE RIBOTYPE - 229 bp

hypacrarthrum, hcr

Majority CCTTTTGTGCGAAATTTGGTCGTGTAATTGAAAAACAAGTTATGTATTTATTTTTTTCGCGGAAACGAAAATTCGTATTG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
hcr-C1R1
hcr-C1R2
hcr-C1R3T.....
hcr-C2R1T.....
hcr-C3R1G.....

Majority AGACGTCGTTAGGAGGCGTGACGGGGGGCGTCATGCGTCGTTGCGTGGAGGCTAGGTCGGTGGGGGGCAGGCTAGGGCGT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
hcr-C1R1G.....
hcr-C1R2
hcr-C1R3-----.....
hcr-C2R1C.....
hcr-C3R1

Majority TGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200
-----+-----+-----+-----+-----+
hcr-C1R1 206 bp
hcr-C1R2 206 bp
hcr-C1R3 187 bp
hcr-C2R1 206 bp
hcr-C3R1C..... 206 bp

hcr-C1R1	hcr-C1R2	hcr-C1R3	hcr-C2R1	hcr-C3R1	
***	99.5	90.3	98.5	98.5	hcr-C1R1
	***	90.3	99.0	99.0	hcr-C1R2
		***	89.3	89.3	hcr-C1R3
			***	98.1	hcr-C2R1
				***	hcr-C3R1

Similarity: 89.3-99.5

S. incamayoense, inm

Majority CCTTTTGTCTGAAATTTGGTCGTGTAATTGAAAAATAT---TATTA--ATT-ATTTTTGCAGGAACGACGTCGTTAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
inm-C1R1T.....A.....
inm-C1R2T.....
inm-C1R3C.....G.....ATT.....TA.....T.....A.....G.....
inm-C1R4A.....T.....

Majority TTAGGTGATGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
inm-C1R1T.....
inm-C1R2
inm-C1R3 AC...C.....A.
inm-C1R4G.....

Majority CAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGXATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----
inm-C1R1A.....G.....G.....G..... 213 bp
inm-C1R2A..... 213 bp
inm-C1R3 ...T.....G..... 219 bp
inm-C1R4A..... 213 bp

inm-C1R1	inm-C1R2	inm-C1R3	inm-C1R4	
***	96.8	90.4	95.9	inm-C1R1
	***	92.7	99.1	inm-C1R2
		***	91.8	inm-C1R3
			***	inm-C1R4

Similarity: 90.4-99.1

S. incanum, inc

Majority CTTTTTTTGGCTGAAATTTTCGTCGTCTATTTCGGCGAATGATTATTTTTTTTGGCGGTTGGGTCGTTTGCTCGGGGAGAGAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
inc-C1R1
inc-C1R2
inc-C4R1G.....
inc-C4R2
inc-C4R3A.....

Majority GTCGTTAGGACGGTTGAGGAAGGTCGTCGCGGTGGCAAAAAGCCCTGTGGCGGTGGTGTGCATGGCTAGGGCTAGGGCGT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
inc-C1R1A.....
inc-C1R2T.....G.....
inc-C4R1A.....C.....
inc-C4R2A.....C.....
inc-C4R3G.....

Majority GGGGGGAGGAATGAGGTTTAATAGAATTAAGAGTGCTAGGAATGAC
170 180 190 200
-----+-----+-----+-----+-----+
inc-C1R1G..... 206
inc-C1R2 206
inc-C4R1G.....C..... 206
inc-C4R2T..... 206
inc-C4R3 206

inc-C1R1	inc-C1R2	inc-C4R1	inc-C4R2	inc-C4R3	
***	98.1	96.6	97.6	98.1	inc-C1R1
	***	96.6	97.6	99.0	inc-C1R2
		***	98.1	96.6	inc-C4R1
			***	97.6	inc-C4R2
				***	inc-C4R3q

Similarity: 96.6-99.0

S. infundibuliforme, ifd

Majority CCTTTTGTGCGAAATTTGGTCGTGTAATTGAAAAATAATATTATTTATTTTTCAGGAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
ifd-C1R1
ifd-C2R1
ifd-C3R1
ifd-C3R2A.....G.....

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
ifd-C1R1
ifd-C2R1C.....
ifd-C3R1GC.....T.....
ifd-C3R2A.....

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+-----+-----+
ifd-C1R1 213 bp
ifd-C2R1 213 bp
ifd-C3R1 213 bp
ifd-C3R2 213 bp

ifd-C1R1	ifd-C2R1	ifd-C3R1	ifd-C3R2	
***	99.5	98.6	98.6	ifd-C1R1
	***	98.1	98.1	ifd-C2R1
		***	97.2	ifd-C3R1
			***	ifd-C3R2

Similarity: 97.2-99.5

S. iopetalum, iop

Majority C C T T T T T G T C G A A A T T T G G T C G T G T A A T T G A A A A A T A T A A T T A T T T X T T T T T T G C A T G A A C G A C G T C G T T A G G A C A G G A
 10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
iop5S.2A.....
iop5S.3A.....
iop5S.4T.....G.....
iop5S.5CT.....G.....

Majority G A T G G G G G C G T T G A G G A T G G G C G T G A C G G G C G A C G T C A T G C G T C G G T G C G C G T G G A G G C T A G G T C G G T X G G G G G C A G G C T
 90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
iop5S.2G.....
iop5S.3-.....G.....G.....
iop5S.4C.....
iop5S.5--.....C.....

Majority A G G G C G T T G G G A G G A A G G A G G T G T T T A A T A G A A T T A G A G T G C T A T G A A T G A T
 170 180 190 200 210
-----+-----+-----+-----+-----+-----+
iop5S.2 213 bp
iop5S.3 212 bp
iop5S.4 213 bp
iop5S.5 211 bp

iop5S.2	iop5S.3	iop5S.4	iop5S.5	
***	99.1	98.6	97.2	iop5S.2
	***	97.7	96.2	iop5S.3
		***	97.7	iop5S.4
			***	iop5S.5

Similarity: 96.2-99.1

S. jamesii-1, jam1

DIRECT SEQUENCING - 213 bp

S. jamesii-2, jam2

Majority CCTTTTGTGCGAAATTCGGTCGTGXAATTGAAAAATATATTATTAATTTTTTGCAGAAACGACATCCGGATTGATGGG
 10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
jam2-C1R1C.....
jam2-C2R1T.....

Majority TGATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCAAGCGACGGTGCGTGAGGCTAGGTCGGXGGGGGGCAGGCTA
 90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
jam2-C1R1G.....
jam2-C2R1T.....

Majority GGGCGTTGGGAGGAGGGAGGTGTTTAATAGAAATTTAGAGTGCTATGAATGAT
 170 180 190 200 210
-----+-----+-----+-----+-----+-----+
jam2-C1R1 212 bp
jam2-C2R1 212 bp

jam2-C1R1	jam2-C2R1	
***	99.1	jam2-C1R1
	***	jam2-C2R1

Similarity: 99.1

S. juzepczukii, juz

Majority	CCTTTTT-GTCGAAATTCGGTCTGTGCAATTGATTTTTTTATTATTATTTATCTTTTTGCAGAA--AC-----GGC
	10 20 30 40 50 60 70 80
	-----+-----+-----+-----+-----+-----+-----+
juz-C1R1	.T.....-C.....C....T.G...AACAA...-.....-.G.....CG..ATTCGGATTGA.A.
juz-C1R2	-.....-.....-.....-.....-.....-.....-.....-.....-
juz-C2R1	-C.....C....T.G...AACAA...-.....-.G.....CG..ATTCGGATTGA.A.
juz-C4R1	-.....-.....-.....-.....-.....-.....-.....-.....-
juz-C5R1	-.....-.....-.....-.....-.....-.....-.....-.....-
juz-C6R1	...C.-.....-.....-.....-.....-.....-.....-.....-.....-
juz-C9R1	T.....-.....-.....-.....-.....-.....-.....-.....-
juz-C11R1	-.....-.....-.....-.....-.....-.....-.....-.....-

Majority	GTCGTTAGGACAGGTGATGGGGGCGTTGGGGATGGGCGTGACGGGCGGCCTCATGCGTCGGTGCGCGTGAGAGGCTAGGTC																															
	90				100				110				120				130				140				150				160			
	-----+-----+-----+-----+-----+-----+-----+-----+																															
juz-C1R1	A.....G.....--.....																															
juz-C1R2	--.....																															
juz-C2R1	A.....G.....--.....																															
juz-C4R1	.....																															
juz-C5R1	G.....																															
juz-C6R1	.....																															
juz-C9R1	.....																															
juz-C11R1	A.....																															

Majority	CGGTGGGGGGCAGGCTAGGGCGTTGGGAGGAAGGAAAGGAGGTGCTTAAAAGAATTTAGAGTGCATGAATGAT	
	170 180 190 200 210 220 230	
	-----+-----+-----+-----+-----+-----+-----	
juz-C1R1	-.....-.....T.....	223
juz-C1R2	.....	220
juz-C2R1	-.....-.....T.....	223
juz-C4R1	T.....	220
juz-C5R1	T.....	220
juz-C6R1	T.....	220
juz-C9R1	.....	221
juz-C11R1	.....	220

[illegible]

Similarity: 82.9-99.6

S. kurtzianum, ktz

Majority CCTTTTTGTCGAAATTCGGTCGTGTAATGGAAGAAATATATTTATTTAT-TTTTGCAGAAACGGCGTCGTTAGGACAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
ktz-C1R1-..G.....T-.TAA.GATG.-..
ktz-C1R2-.....
ktz-C1R3-.....
ktz-C1R4A.....AA.....
ktz-C1R5-C.....
ktz-C4R1A.....AA.C.....

Majority TGACGGGGGCGTTGAGGATG-G-GCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
ktz-C1R1 C.T.CACC.A.A.CTAC.CTC.T..CC...C.AC..TCTTCG...T.....
ktz-C1R2-.-.....T.....
ktz-C1R3TC.-.....
ktz-C1R4 ...T.....-.-.....
ktz-C1R5C.....-.-.....
ktz-C4R1 ...T.....-.-.....

Majority GCTAGGGCGTTGGGAGGAAGGAGGCGTTTAATAGAAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+-----+
ktz-C1R1 ...T..... 213 bp
ktz-C1R2 213 bp
ktz-C1R3 214 bp
ktz-C1R4T.....G..... 214 bp
ktz-C1R5T..... 213 bp
ktz-C4R1T..... 214 bp

ktz-C1R1	ktz-C1R2	ktz-C1R3	ktz-C1R4	ktz-C1R5	ktz-C4R1	
***	80.6	81.9	78.2	80.1	78.2	ktz-C1R1
	***	98.6	96.8	98.1	96.8	ktz-C1R2
		***	96.3	97.7	96.3	ktz-C1R3
			***	95.8	99.1	ktz-C1R4
				***	96.8	ktz-C1R5
					***	ktz-C4R1

Similarity: 78.2-99.1

S. laciniatum, lac

Majority CCTTTTATCGAAACTCATCATAATTTTATCTATTTGGTGATTAATTTTATTTTTT-AATTTTTCGGGAAAGGACATTCTG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
lac-C1R1-.....
lac-C3R1-.....
lac-C11R1-.....
lac-C13R2 .T....G.....T..GC.....A.....-.....AT.....
lac-C13R3T.....
lac-C26R1-.....
lac-C13R1 .T....G.....T..GC.....AG-----.-.....A.C.....

Majority GGTGGAGACGTCGTTAGGACAGGTGATGGAGGCGTTTGAAATTGGCGTGAAAGGCGGCACCATGCGTCGGCAGGCTAGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
lac-C1R1C.....
lac-C3R1
lac-C11R1T.....
lac-C13R2 AA.C.GA.....AA..T.....A..C..C..GG..G.....GC.....GA.....
lac-C13R3
lac-C26R1A.....
lac-C13R1 AA.A.....AAG.....C.....C..GG..G.....C.....C.....

Majority CGTTGGGAGGAAGGAGGTGTTTAAATAAAATTTGGAGTGCTAGGAATGAC
170 180 190 200
-----+-----+-----+-----+
lac-C1R1 ..A..... 208 bp
lac-C3R1 208 bp
lac-C11R1 208 bp
lac-C13R2A.....G.....G..... 208 bp
lac-C13R3 209 bp
lac-C26R1 208 bp
lac-C13R1G..... 195 bp

lac-C1R1	lac-C3R1	lac-C11R1	lac-C13R2	lac-C13R3	lac-C26R1	lac-C13R1	
***	99.0	98.6	85.2	98.6	98.6	81.8	lac-C1R1
	***	99.5	86.1	99.5	99.5	82.8	lac-C3R1
		***	85.6	99.0	99.0	82.3	lac-C11R1
			***	85.6	85.6	84.2	lac-C13R2
				***	99.0	82.3	lac-C13R3
					***	82.3	lac-C26R1
						***	lac-C13R1

Similarity: 81.8-99.5

S. lasiophyllum, las

Majority TTTTTTTCGCCGAAATTTTCGTCGCTCTATTCGGCTAATGATTATCTTTTTTGGCGGTTGGGTCGCTTGAXTXGGCAGAGAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
las-C1R1A.....T.G.....
las-C1R2A.T....T....
las-C3R1 A.....A.T....T....
las-C4R1G.....A.....T.G.....
las-C4R2 C.....T.....A.....A.....T.G.....
las-C2R1 C.....A.T.....-

Majority GTCGTTAGGACGGATGAGGAAGGGCGTCGCCGGCGCGGAGGCTAGGGCGACGGTGTGCAGGAATGACGTTTAATXGAA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
las-C1R1G.....G.....T...
las-C1R2T.....A...
las-C3R1T.....T.....A...
las-C4R1T.....G.....T...
las-C4R2A.....A...
las-C2R1 -----,-----,-----,-----,-----,-----,-----,-----,TT..

Majority TTAAGTGTGCTAGGAATGAC
170 180
-----+-----+
las-C1R1 180 bp
las-C1R2 180 bp
las-C3R1 180 bp
las-C4R1A..... 180 bp
las-C4R2A..... 180 bp
las-C2R1 115 bp

las-C1R1	las-C1R2	las-C3R1	las-C4R1	las-C4R2	las-C2R1	
***	95.6	94.4	96.7	95.0	61.1	las-C1R1
	***	98.9	94.4	95.0	61.7	las-C1R2
		***	93.3	94.4	61.7	las-C3R1
			***	93.9	60.0	las-C4R1
				***	59.4	las-C4R2
					***	las-C2R1

Similarity: 59.4-98.9

S. laxissimum-1, lxs1

Majority CCTTTTGTGCGAAATTCGGTCGTGCAACTGAAAAATTTATTTATTTATTTTTCAGAAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
lxs_5S.1A.....
lxs_5S.2
lxs_5S.3A.....T..
lxs_5S.4
lxs_5S.5

Majority GATGGTGGGCGTTGAGGATGGGCGTGACGGGCGTCGGTGCGTGAGGCTAGGTCGGCGGAGGGCAGGCTAGGGCGTTGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
lxs_5S.1T.....
lxs_5S.2
lxs_5S.3T.....G..
lxs_5S.4GT.....G..
lxs_5S.5

Majority AGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200
-----+-----+-----+-----+
lxs_5S.1 202 bp
lxs_5S.2 202 bp
lxs_5S.3G..... 202 bp
lxs_5S.4 202 bp
lxs_5S.5 202 bp

lxs_5S.1	lxs_5S.2	lxs_5S.3	lxs_5S.4	lxs_5S.5	
/***	99.0	97.5	97.5	99.0	lxs_5S.1
	***	97.5	98.5	100.0	lxs_5S.2
		***	97.0	97.5	lxs_5S.3
			***	98.5	lxs_5S.4
				***	lxs_5S.5

Similarity: 97.0-100

S. laxissimum-2, lxs2

Majority CCTTTTGGXCGAAAXTTCGGTTCGTGCAACTGAAAAAXTTXTTTATTTATTTTTCAGAAACGACGTCGTTAGGACAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
lxs2-C1R4A.....A.....A.....A.....
lxs2-C1R5T.....-.....TT...G.....
lxs2-C1R6T.....-C.....T...G.....T.....A.....A.....
lxs2-C1R10A.....A.....A.....A.....

Majority TGATGGTGGGCGTTGAGGATGGGCGTGACGGGCGTCGGTGCGTGGAGGCTAGGTCGGCGGGGGGCAGGCTAGGGCGTTGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
lxs2-C1R4
lxs2-C1R5 -.....
lxs2-C1R6 ..T.....A.....
lxs2-C1R10A.....

Majority GAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200
-----+-----+-----+-----+-----
lxs2-C1R4 203 bp
lxs2-C1R5C..... 201 bp
lxs2-C1R6 202 bp
lxs2-C1R10 203 bp

lxs2-C1R4	lxs2-C1R5	lxs2-C1R6	lxs2-C1R10	
***	96.6	95.1	99.5	lxs2-C1R4
	***	95.6	96.1	lxs2-C1R5
		***	94.6	lxs2-C1R6
			***	lxs2-C1R10

Similarity: 94.6-99.5

S. leptophyes, lph

DIRECT SEQUENCING - 213 bp

S. limbaniense, lmb

Majority C C T T T T T T G T C G A A A T T C G G T C G T G T A A T A G A A A A A - T A T T A T T A T T T A T T T - - - T T T G T A G A A A C G A C G T C G T T A G G A C

10 20 30 40 50 60 70 80

lmb-C1R1 G

lmb-C1R2 -

lmb-C1R3 G A G A T T . . . C

lmb-C1R4 - G G - - -

lmb-C1R5 T G - - - - A

lmb-C2R1 G A A T T . . . C

lmb-C2R2 - C - - -

lmb-C4R1 - - - -

Majority A A C A G G T G A T G G G G C G T T G G G A G G A C G G G C G T G A C G G G C G G C G T C A T G C G T C G G T G C G C G T G G A G G C T A G G T C G G T G G

90 100 110 120 130 140 150 160

lmb-C1R1

lmb-C1R2

lmb-C1R3 - - - - - T

lmb-C1R4 . T G A

lmb-C1R5 C

lmb-C2R1 - - - - - C T

lmb-C2R2

lmb-C4R1 A

Majority G G G G C A G G C T A G G G C G T T G G G A G G A A G A G G T G T T T A A T A G A A T T T A G A G T G C T A T G A A T G A T

170 180 190 200 210 220

lmb-C1R1 C 219 bp

lmb-C1R2 219 bp

lmb-C1R3 217 bp

lmb-C1R4 219 bp

lmb-C1R5 219 bp

lmb-C2R1 . C 217 bp

lmb-C2R2 G 219 bp

lmb-C4R1 219 bp

lmb-C1R1	lmb-C1R2	lmb-C1R3	lmb-C1R4	lmb-C1R5	lmb-C2R1	lmb-C2R2	lmb-C4R1	
***	99.1	92.8	96.9	97.3	92.4	98.2	98.7	lmb-C1R1
	***	93.7	97.8	98.2	93.3	99.1	99.6	lmb-C1R2
		***	91.9	91.9	98.7	92.8	93.7	lmb-C1R3
			***	96.0	91.5	96.9	97.3	lmb-C1R4
				***	91.5	97.3	97.8	lmb-C1R5
					***	92.4	93.3	lmb-C2R1
						***	98.7	lmb-C2R2
							***	lmb-C4R1

Similarity: 91.5-99.6

S. linnaeanum, lin

Majority TTTTTTT-GCAGAAATCCGTCGTCTATTCGGCGAATGATTATTTTTTTTGGCGGTTGGGTCGTTTGCTCGGGGATAGAC
 10 20 30 40 50 60 70 80
 -----+-----+-----+-----+-----+-----+-----+-----+
lin-C1R1T.....
lin-C2R1-.....
lin-C2R2-.....G.....

Majority GTCGTTAGGACGGTTGAGGAAGGTGGTCGATGTAGCAAAAAGGCCTGTGGCGGTGGTGTGCATGGCTAGGGCTAGGGC--
 90 100 110 120 130 140 150 160
 -----+-----+-----+-----+-----+-----+-----+
lin-C1R1
lin-C2R1
lin-C2R2TA

Majority ----GTGGGGGGAGGAATGAGGTTTAATAGAATTAAGAGTGCTAGGAATGAT
 170 180 190 200 210
 -----+-----+-----+-----+-----+
lin-C1R1 ----..... 206 bp
lin-C2R1 ----..... 205 bp
lin-C2R2 GGGC..... 211 bp

lin-C1R1	lin-C2R1	lin-C2R2	
***	99.5	96.2	lin-C1R1
	***	96.7	lin-C2R1
		***	lin-C2R2

Similarity: 96.2-99.5

S. lycopersicoides, lpd

Majority CCTTTTGTGTTGAAATTTGATCTCGTAATTGAAAAAAAAAXTATACTCATTTATTTTTTTTXXTGCGGAAAATACGTTCG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
lpd-C1R1--.....TT.....
lpd-C8R1AA.....--.....

Majority GATTXAGGCGTCATTAGGATATGGGATGGTGGCGTCGGGGAXXXXXXXXXXCGGGCGTCGTCGTGCGTCGGTGCGTGAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
lpd-C1R1G.....TGGGCGTGA.....
lpd-C8R1T.....-----.....

Majority GTTTTAAAGCGGGGGCGGGCTAGGGCGTTGGGAGGAAGGTTGTGTTTAATAGATTTTAGAGTGCAATGAATGAC
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+-----
lpd-C1R1 233 bp
lpd-C8R1 224 bp

lpd-C1R1	lph-C8R1	
***	92.4	lpd-C1R1
	***	lph-C8R1

Similarity: 92.4

S. lycopersicum var. cerasiforme-1, lyccl

Majority CCTTTTGTGTTGAAATTTGATCTCGTAATTGAAAAAAAAAATATACTCATTTATTTTTTTTTT-GCGGAAAATACGTTTCG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
lycc1-C1R1-.....
lycc1-C1R2-.....
lycc1-C2R1T.....-.....G...
lycc1-C2R2T.....

Majority GATTGAGGCGTCATTAGGATATGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGTGCGTCGGTGCGTGAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
lycc1-C1R1
lycc1-C1R2
lycc1-C2R1G.....G.....
lycc1-C2R2

Majority GTTTTAAAGCGGGGGCGGGCTAGGGCGTTGGGAGGAAGGTTGTGTTAATAGATTTTAGAGTGCAATGAATGAC
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+
lycc1-C1R1 234 bp
lycc1-C1R2 233 bp
lycc1-C2R1 234 bp
lycc1-C2R2C. 235 bp

lycc1-C1R1	lycc1-C1R2	lycc1-C2R1	lycc1-C2R2	
***	99.6	98.3	99.1	lycc1-C1R1
	***	97.9	98.7	lycc1-C1R2
		***	97.4	lycc1-C2R1
			***	lycc1-C2R2

Similarity: 97.4-99.6

S. lycopersicum var. Cerasiforme-2, lycc2

ONE RIBOTYPE - 234 bp

S. lycopersicum-1, lyc1

ONE CLONE from GB - 235 bp

S. lycopersicum-2, lyc2

Majority CCTTTTGTGTTGAAATTTGATCTCGTAATTGAAAAAAAAAATATACTCATTTATTTTTTTTTT-GCGGAAAATACGTTTCG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
lyc2-C2R2 .T.....A.....-.....
lyc2-C6R2---.....C-.....
lyc2-C8R1T.....
lyc2-C10R1-.....
lyc2-C15R2-.....T.....

Majority GATTGAGGCGTCATTAGGATATGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGTCGTCGGTGCGTGAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
lyc2-C2R2
lyc2-C6R2T.....
lyc2-C8R1G.....A.....
lyc2-C10R1
lyc2-C15R2A.....

Majority GTTTTAAAGCGGGGGCGGGCTAGGGCGTTGGGAGGAAGGTTGTGTTTAATAGATTTTAGAGTGCAATGAATGAC
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+-----
lyc2-C2R2 234 bp
lyc2-C6R2A..A..A....A..... 230 bp
lyc2-C8R1 235 bp
lyc2-C10R1A..... 234 bp
lyc2-C15R2T..... 233 bp

lyc2-C2R2	lyc2-C6R2	lyc2-C8R1	lyc2-C10R1	lyc2-C15R2	
***	94.9	97.9	98.7	97.4	lyc2-C2R2
	***	94.5	95.3	93.6	lyc2-C6R2
		***	98.3	97.4	lyc2-C8R1
			***	97.4	lyc2-C10R1
				***	lyc2-C15R2

Similarity: 93.6-98.7

S. lycopersicum-3, lyc3

Majority	CCTTTTGTGTTGAAATTTGATCTCGTAATTGAAAAAAAAA-TATACTCATTTATTTTTTTTTT-GCGGAAAATACGTTTCG
	1020304050607080
	-----+-----+-----+-----+-----+-----+-----+-----+
lyc3-C1R1	-.....-
lyc3-C11R1	A.....T.....
lyc3-C15R1	-.....T.....
lyc3-C25R1	T.....A.....--.....
lyc3-C39R1	--.....-
Majority	GATTGAGGCGTCATTAGGATATGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGTGCGTCGGTGCGTGAGG
	90100110120130140150160
	-----+-----+-----+-----+-----+-----+-----+
lyc3-C1R1	.....
lyc3-C11R1	.....
lyc3-C15R1	.....
lyc3-C25R1	.....
lyc3-C39R1	.....
Majority	GTTTTAAAGCGGGGGCGGGCTAGGGCGTTGGGAGGAAGGTTGTGTTTAATAGATTTTAGAGTGCAATGAATGAC
	170180190200210220230
	-----+-----+-----+-----+-----+-----+
lyc3-C1R1	T.. 233bp
lyc3-C11R1	 235bp
lyc3-C15R1	 234bp
lyc3-C25R1	 233bp
lyc3-C39R1	 232bp

lyc3-C1R1	lyc3-C11R1	lyc3-C15R1	lyc3-C25R1	lyc3-C39R1	
***	98.7	99.1	98.3	99.1	lyc3-C1R1
	***	99.6	98.7	98.7	lyc3-C11R1
		***	98.3	99.1	lyc3-C15R1
			***	98.3	lyc3-C25R1q
				***	lyc3-C39R1

Similarity: 98.3-99.6

S. macrocarpon, mac

Majority CTTTTTTTTTCCCAGAAATATCXTCGTCTATTTCGGCGAATGATTAATTTTTTTTTTGCGGTTGGGTCGTTTGTTGGGCAGAGA
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
mac-C12R1A.....
mac-C12R2 --.....T.....G.....A.....
mac-C64R1A.....AT.....
mac-C91R1A.....
mac-C91R2G.....T.....-.....
mac-C133R1T.....G.....T.....

Majority CGTCGTGTCGTTAGGACGGTGGTGTGCAGGCTAGTGCGTGGCCGGCACGTGGGGGGGA-GGATTGAGGTTTAATAGAATT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
mac-C12R1-.....C.....
mac-C12R2T...A.....-.....
mac-C64R1A.....
mac-C91R1G.....T.....G.....A.-.....C.....
mac-C91R2T.....G.....G...T.....C.-.....
mac-C133R1T.....-.....G.....

Majority AAGAGTGCTAAGAATGAT
170
-----+-----
mac-C12R1 177 bp
mac-C12R2T..... 175 bp
mac-C64R1 178 bp
mac-C91R1 177 bp
mac-C91R2 176 bp
mac-C133R1T..... 177 bp

mac-C12R1	mac-C12R2	mac-C64R1	mac-C91R1	mac-C91R2	mac-C133R1	
***	94.9	97.8	97.8	94.4	96.1	mac-C12R1
	***	93.8	92.7	91.6	95.5	mac-C12R2
		***	95.5	93.8	94.9	mac-C64R1
			***	93.3	93.8	mac-C91R1
				***	92.7	mac-C91R2
					***	mac-C133R1

Similarity: 91.6-97.8

S. maglia, mag

Majority	CCTTTTGTGCGAAATTCGGTXGTGTAATTGAAGAAATATXTATTXATTTATTTTTTGCAGAAACGGCGTCGTTAGGACXX							
	10	20	30	40	50	60	70	80
	-----+-----+-----+-----+-----+-----+-----+-----+							
pSmag5S11	C.....A...T.....--							
pSmag5S12	C.....A...T.....--							
pSmag5S31	C.....A...T.....--							
pSmag5S33	C.....A...T.....--							
pSmag5S13	A.....-AT..-.....AG							
pSmag5S21	A.....-...-.....AG							
pSmag5S22	A.....-...-.....AG							
pSmag5S23	A.....-...-.....AG							
Majority	XXXXXGGGGGXGTTGAGGAXGGGCGTGAXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXGGGGGCAGG							
	90	100	110	120	130	140	150	160
	-----+-----+-----+-----+-----+-----+-----+-----+							
pSmag5S11	-----.C.....C.....-----							
pSmag5S12	-----.C.....C.....-----							
pSmag5S31	-----.C.....C.....-----							
pSmag5S33	-----.C.....C.....-----							
pSmag5S13	GTGAT....A.....T.....CGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTG.....							
pSmag5S21	GTGAT....A.....T.....CGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTG.....							
pSmag5S22	GTGAT....A.....T.....CGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTG...A.....							
pSmag5S23	GTGAT....A.....T.....CGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTG...A.....							
Majority	CXAGGGCGTTGGGAGGAAGGAXGTGTTAATAGAATTTAGAGTGCTATGAATGAT							
	170	180	190	200	210			
	-----+-----+-----+-----+-----+-----							
pSmag5S11	.C.....G.....					165 bp		
pSmag5S12	.C.....G.....					165 bp		
pSmag5S31	.C.....G.....					165 bp		
pSmag5S33	.C.....G.....G.....					165 bp		
pSmag5S13	.T.....T.....					213 bp		
pSmag5S21	.T.....T.....					213 bp		
pSmag5S22	.T.....T...A.....					213 bp		
pSmag5S23	.T.....T...A.....					213 bp		

pSmag5S11	pSmag5S12	pSmag5S31	pSmag5S33	pSmag5S13	pSmag5S21	pSmag5S22	pSmag5S23	
***	100.0	100.0	99.5	72.6	73.5	72.6	72.6	pSmag5S11
	***	100.0	99.5	72.6	73.5	72.6	72.6	pSmag5S12
		***	99.5	72.6	73.5	72.6	72.6	pSmag5S31
			***	72.1	73.0	72.1	72.1	pSmag5S33
				***	99.1	98.1	98.1	pSmag5S13
					***	99.1	99.1	pSmag5S21
						***	100.0	pSmag5S22
							***	pSmag5S23

Similarity: 72.1-100

S. mammosum, mam

MajorityCCTTTTGTGTCGAAATTCGGCATAATCTCGTCTGTCTGTGTTATTTTGGCGGAAACGGCATTTGTTTGGGCCGGGACG1020304050607080

-----+-----+-----+-----+-----+-----+-----+-----+

pSmam-5S1.....

pSmam-5S8.....

MajorityTCGTTAGGACAGTTGAGGAAGGGCGTTGCCGCGCGGCGGTGCGTGAGGCTAGGGCGGTGGCGXTGCAGGCTAGGGCGTC90100110120130140150160

-----+-----+-----+-----+-----+-----+-----+-----+

pSmam-5S1.....G.....

pSmam-5S8.....A.....

MajorityGGGAGGAATGAGGTTTAATAGAATTTAGAGTGGTAGGAATGAC170180190200

-----+-----+-----+-----+---

pSmam-5S1.....203 bp

pSmam-5S8.....203 bp

pSmam-5S1	pSmam-5S8	
***	99.5	pSmam-5S1
	***	pSmam-5S8

Similarity: 99.5

S. marinasense, mrn

Majority C C T T T T T G T C G A A A T T C G G T C G T G T A A T A G A A A A A T A T T A T T A T T T A T T T T T G T A G A A A C G A C G T C G T T A G G A C T A A C
 10 20 30 40 50 60 70 80
 -----+-----+-----+-----+-----+-----+-----+
mrn-C1R1
mrn-C1R2
mrn-C1R4 .T.....
mrn-C2R2----

Majority A G G T G A T G G G G C G T T G G G A G G A T G G G C G T G A C G G G C G G C G T C A T G C G T C G G T G C G C G T G G A G G C T A G G T C G G T G G G G G G
 90 100 110 120 130 140 150 160
 -----+-----+-----+-----+-----+-----+-----+
mrn-C1R1
mrn-C1R2-----
mrn-C1R4
mrn-C2R2-----

Majority C A G G C T A G G G C G T T G G G A G G A A G G A G G T G T T T A A T A G A A T T T A G A G T G C T A T G A A T G A T
 170 180 190 200 210
 -----+-----+-----+-----+-----+-----+
mrn-C1R1 219 bp
mrn-C1R2 -..... 151 bp
mrn-C1R4TTT.....T..... 219 bp
mrn-C2R2 215 bp

mrn-C1R1	mrn-C1R2	mrn-C1R4	mrn-C2R2	
***	68.9	97.7	98.2	mrn-C1R1
	***	66.7	67.1	mrn-C1R2
		***	95.9	mrn-C1R4
			***	mrn-C2R2

Similarity: 66.7-98.2

S. medians, med

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Majority  CTTTTTGTGCGAAATTCGGTCGTGTAATTGAAAAAATAT-ATTATTATTTTTCAGAAACGACATTCGGATTGAGACG
           10      20      30      40      50      60      70      80
-----+-----+-----+-----+-----+-----+-----+
med-C1R1  .C.....G...GG.....TT...ATA.....
med-C1R2  .C.....G...GG.....TT...ATA.....
med-C2R1  .C.....G...G...GG.....TT...ATA.....
med-C2R2  .....-.....A.....
med-C4R1  .....C.....-.....
med-C2R3  .....-.....
med-C8R1  .....-.....A.....
med-C8R2  .....-.....A.....
med-C8R3  .....-...T.....
med-C8R4  .C...A.....G.....G...T...TA.....A-----
med-C8R5  .C...A.....G.....G...T...TA.....A-----

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Majority  TCGTTAGGACAGGTGATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCG--TGGAGGCTAGGTCG
           90      100     110     120     130     140     150     160
-----+-----+-----+-----+-----+-----+-----+
med-C1R1  .....CG...G.....
med-C1R2  .....CG...G.....
med-C2R1  .....G.....CG.....
med-C2R2  .....--.....A.....
med-C4R1  .....--.....
med-C2R3  .....--.....
med-C8R1  .....--.....
med-C8R2  .....--.....
med-C8R3  .....C.....--.....
med-C8R4  .....G.....A.....A...--AG.....--G.....CT-
med-C8R5  .....G.T.....A...--AG.....--G.....CT-

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Majority  GTGGGGG-----GGAGGCTAGGGCGTTGG-AGGAAGGAGGTGTTTAATAGAATTTAGAGTGGTAGGAATGAT
           170     180     190     200     210     220     230
-----+-----+-----+-----+-----+-----+-----+
med-C1R1  .....C.....G.....G...C..T..... 213 bp
med-C1R2  .C.....C.....G.....G...C..T..... 213 bp
med-C2R1  .....C.....G.....G...C..T..... 213 bp
med-C2R2  .....TGGGGG.....-.....T..... 229 bp
med-C4R1  .....TGGGGG.....-.....T..... 229 bp
med-C2R3  .....-..... 223 bp
med-C8R1  .....-..... 223 bp
med-C8R2  .....G.....-..... 223 bp
med-C8R3  .....-..... 223 bp
med-C8R4  .....G.....C..T..... 193 bp
med-C8R5  .....G.....AC..T..... 193 bp

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med-C1R1	med-C1R2	med-C2R1	med-C2R2	med-C4R1	med-C2R3	med-C8R1	med-C8R2	med-C8R3	med-C8R4	med-C8R5	
***	99.1	98.7	82.8	83.3	86.7	86.3	85.8	85.8	84.1	83.7	med-C1R1
	***	97.9	82.0	82.4	85.8	85.4	85.0	85.0	83.7	83.3	med-C1R2
		***	82.4	82.8	86.3	85.8	85.4	85.4	82.8	82.4	med-C2R1
			***	98.7	96.1	96.6	96.1	95.3	74.2	73.8	med-C2R2
				***	96.6	96.1	95.7	95.7	74.7	74.2	med-C4R1
					***	99.6	99.1	99.1	78.1	77.7	med-C2R3
						***	99.6	98.7	77.7	77.3	med-C8R1
							***	98.3	77.3	76.8	med-C8R2
								***	77.7	77.3	med-C8R3
									***	98.7	med-C8R4
										***	med-C8R5

Similarity: 73.8-99.6

S. medicagineum, mdg

Majority CTTTTTTCATCTGTTTCGGCCGATGATTATTTATTTTTTTTTTGGCGGTTGGGTCGTTTGCTTGGGCAGAGACGTCGTTAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
mdg-C1R1
mdg-C2R1G.....T.....
mdg-C3R1
mdg-C7R1T.....
mdg-C7R2-.....
mdg-C10R1C.....
mdg-C11R1A.....

Majority ACGGTTGAGGAAGGGCGTCGCCGGCGCGTGGAGGCTAGGGCGACGGTGTGCAGGAATGAGGTTTAATAGAATTAAGGGTG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
mdg-C1R1G.....
mdg-C2R1
mdg-C3R1
mdg-C7R1
mdg-C7R2G.....
mdg-C10R1G.....
mdg-C11R1

Majority CTAGGAATGAC
170
-----+-----
mdg-C1R1 171 bp
mdg-C2R1 171 bp
mdg-C3R1 171 bp
mdg-C7R1G. 171 bp
mdg-C7R2 170 bp
mdg-C10R1A..... 171 bp
mdg-C11R1T 171 bp

mdg-C1R1	mdg-C2R1	mdg-C3R1	mdg-C7R1	mdg-C7R2	mdg-C10R1	mdg-C11R1	
***	98.2	99.4	98.2	99.4	98.8	98.2	mdg-C1R1
	***	98.8	97.7	98.2	97.1	97.7	mdg-C2R1
		***	98.8	98.8	98.2	98.8	mdg-C3R1
			***	97.7	97.1	97.7	mdg-C7R1
				***	98.2	97.7	mdg-C7R2
					***	97.1	mdg-C10R1
						***	mdg-C11R1

Similarity: 97.1-99.4

S. megistacrolobum (= boliviense), mga

Majority CCTTTTTGTCGAAATTCGGTCGTGCAATTGATTTTTTATTATTATTTATCTTTTGCAGAAACGGCGTCGTTAGGACAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
mga-C1R3T.....C.....A.....T.....
mga-C1R4T.....
mga-C1R5T.....
mga-C1R6T.....
mga-C2R1
mga-C2R2C.....
mga-C2R3 .T.....T.....
mga-C1R1
mga-C1R2

Majority TGATGG-----GGGCGTGACGGGCGGCGTCGTGCGTCGGTGCGCGTGGAGGCTAGGTCCGGTGGGGGGCAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
mga-C1R3GGGCGTTGAGGAT.....G.....G.....G.....G.....
mga-C1R4 ..G...GGGCGTTGAGGAT.....
mga-C1R5GGGCGTTGAGGAT.....
mga-C1R6TGGCGTTGATGAT.....A.....A.....
mga-C2R1
mga-C2R2
mga-C2R3
mga-C1R1G.....
mga-C1R2 ..G...G.....

Majority CTAGGGCGTTGGGAGGAAGGAAAGGAGGTGTTTAAAAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+
mga-C1R3-.....G..... 219 bp
mga-C1R4CG..... 220 bp
mga-C1R5G..... 220 bp
mga-C1R6C.....G..... 220 bp
mga-C2R1 207 bp
mga-C2R2 T.....G..... 207 bp
mga-C2R3G..... 207 bp
mga-C1R1 207 bp
mga-C1R2 207 bp

mga-C1R3	mga-C1R4	mga-C1R5	mga-C1R6	mga-C2R1	mga-C2R2	mga-C2R3	mga-C1R1	mga-C1R2	
***	95.5	96.4	93.2	89.5	89.1	88.2	89.1	89.5	mga-C1R3
	***	99.1	96.8	92.3	91.8	90.9	91.8	92.3	mga-C1R4
		***	96.8	93.2	92.7	91.8	92.7	92.3	mga-C1R5
			***	91.8	90.5	90.5	91.4	90.9	mga-C1R6
				***	98.6	98.6	99.5	99.1	mga-C2R1
					***	97.3	98.2	97.7	mga-C2R2
						***	98.2	97.7	mga-C2R3
							***	98.6	mga-C1R1
								***	mga-C1R2

Similarity: 88.2-99.5

S. melongena-1, mel1

Majority CTTTTTTTCTGCTGAAATTTTCGTC-----
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
pSmell-5S11GTCTATTCGGCGAGTGATTATTTTTTTTGGCGGTTGGGTCGTTTGCTCGGGGAGAGAC
pSmell-5S-1
pSmell-5S-2

Majority -----
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pSmell-5S11 GTCGTTAAGACGGTTGAGGAAGGTCGTCGCGGTAGCAAAAAGGACCCCTGGGAAGTCCTCGTGTTGCATCCCTCTTTTT
pSmell-5S-1 -----
pSmell-5S-2 -----

Majority -----GTTTGCTCGGGGAATGATTATTTTTTTTCGTCGTTTGCTCGGGGAGAGACGTCGTTAGGACGGT
170 180 190 200 210 220 230 240
-----+-----+-----+-----+-----+-----+-----+
pSmell-5S11 TTGCTGAAATTTTCGTC.....
pSmell-5S-1 -----
pSmell-5S-2 -----

Majority TGAGGAAGGTCGTCGCGGTAGCAAAAAGGCCTGTGGCGGTGGTGTGCATGGCTAGGGCTAGGGCGTGGGGGGAGGAATGA
250 260 270 280 290 300 310 320
-----+-----+-----+-----+-----+-----+-----+
pSmell-5S11
pSmell-5S-1
pSmell-5S-2

Majority GGTTTAATAGAATTAAGAGTGCTAAGAATGAT
330 340 350
-----+-----+-----+
pSmell-5S11G..... 352
pSmell-5S-1 198
pSmell-5S-2 198

pSmell-5S11	Smel-5S-1	Smel-5S-2	
***	56.0	56.0	pSmell-5S11
	***	100.0	Smel-5S-1
		***	Smel-5S-2

Similarity: 56.0-99.6

S. melongena-2, mel2

Majority	CTTTTTTTTGCTGAAATTTTCGTCGTCTATTTCGGCGAATGATTATTTTTTTTGGCGGTTGGGTCGTTTGCTCGGGGAGAGAC	
	10 20 30 40 50 60 70 80	
	-----+-----+-----+-----+-----+-----+-----+	
mel2-C1R1	G.....	
mel2-C3R1	G.....	
mel2-C22R1	T.....	
mel2-C2R1	.....	
mel2-C9R1	.....	
mel2-C11R1	A.....A.....	
mel2-C12R1	T.....G.....	
mel2-C17R1	-----	
Majority	GTCGTTAAGACGGTTGAGGAAGGTCGTCGCGGTAGCAAAAAGGACCCCTGGGAAGTCCTCGTGTTCATCCCTCTTTTT	
	90 100 110 120 130 140 150 160	
	-----+-----+-----+-----+-----+-----+-----+	
mel2-C1R1	.....	
mel2-C3R1	.....	
mel2-C22R1	.....	
mel2-C2R1	.....	
mel2-C9R1	A	
mel2-C11R1	T.....C.....-	
mel2-C12R1	.....	
mel2-C17R1	-----T.....	
Majority	TTGCTGAAATTTTCGTCGTCTATTTCGGGGAATGATTATTTTTTTTGGCGGTTGGGTCGTTTGCTCGGGGAGAGACGTCGTT	
	170 180 190 200 210 220 230 240	
	-----+-----+-----+-----+-----+-----+-----+	
mel2-C1R1	T.GC.....C.-----	
mel2-C3R1	T.GC.....C.-----A.....	
mel2-C22R1	T.GC.....C.-----	
mel2-C2R1	.....	
mel2-C9R1	A.....A.....C.	
mel2-C11R1	.....	
mel2-C12R1	A.....T.....C.	
mel2-C17R1	...A.....C.....C.....T.....	
Majority	AGGACGGTTGAGGAAGGTCGTCGCGGTAGCAAAAAGGCCTGTGGCGGTGGTGTGCATGGCTAGGGCTAGGGCGTGGGGGG	
	250 260 270 280 290 300 310 320	
	-----+-----+-----+-----+-----+-----+-----+	
mel2-C1R1	.....	
mel2-C3R1	.....	
mel2-C22R1	.....	
mel2-C2R1	.....	
mel2-C9R1	.....	
mel2-C11R1	A.....	
mel2-C12R1	.....	
mel2-C17R1	G....AT.....	
Majority	AGGAATGAGGTTTAATAGAAATTAAGAGTGCTAGGAATGAT	
	330 340 350 360	
	-----+-----+-----+-----+	
mel2-C1R1	.....	352 bp
mel2-C3R1	.....	352 bp
mel2-C22R1	.....	352 bp
mel2-C2R1	.....	360 bp
mel2-C9R1	.....	360 bp
mel2-C11R1	.....	359 bp
mel2-C12R1	.....	360 bp
mel2-C17R1	.....	206 bp

mel2-C1R1	mel2-C3R1	mel2-C22R1	mel2-C2R1	mel2-C9R1	mel2-C11R1	mel2-C12R1	mel2-C17R1	
***	99.7	99.4	96.1	95.6	94.7	95.6	51.7	mel2-C1R1
	***	99.2	95.8	95.3	94.4	95.3	51.4	mel2-C3R1
		***	96.1	95.6	94.7	95.0	51.7	mel2-C22R1
			***	98.9	98.1	98.3	54.7	mel2-C2R1
				***	97.8	98.9	54.2	mel2-C9R1
					***	96.9	54.4	mel2-C11R1
						***	54.2	mel2-C12R1
							***	mel2-C17R1

Similarity: 51.4-99.7

Note: mel2-C17R1 represents a sequence of rare ribotype M17 that contains no duplication in IGS.

S. melongena-3, mel3

Majority CTTTTTTTGCTGAAATTTTCGTCGTCTATTTCGGCGAGTGATTATTTTTTTTGGCGGTTGXGTCGTTTGCTCGGGGAGAGAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
mel3-C2R1T.....
mel3-C3R1T.GC...G..A.....-C.-..
mel3-C4R1G.....

Majority GTCGTTAAGACGGTTGAGGAAGGTCGTCGCGGTAGCAAAAAGGACCCCTGGGAAGTCCTCGTGTTGCATCCCTCTTTTT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
mel3-C2R1
mel3-C3R1G.....
mel3-C4R1

Majority TTGCTGAAATTTTCGTCGTTTGCTCGGGGAATGATTATTTTTTTTCGTCGTTTGCTCGGGGAGAGACGTCGTTAGGACGGT
170 180 190 200 210 220 230 240
-----+-----+-----+-----+-----+-----+-----+-----+
mel3-C2R1
mel3-C3R1
mel3-C4R1

Majority TGAGGAAGGTCGTCGCGGTAGCAAAAAGGCCTGTGGCGGTGGTGTGCATGGCTAGGGCTAGGGCGTGGGGGGAGGAATGA
250 260 270 280 290 300 310 320
-----+-----+-----+-----+-----+-----+-----+-----+
mel3-C2R1G.....
mel3-C3R1 ..G.....
mel3-C4R1

Majority GGTTTAATAGAATTAAGAGTGCTAGGAATGAT
330 340 350
-----+-----+-----+--
mel3-C2R1 352 bp
mel3-C3R1 344 bp
mel3-C4R1 352 bp

mel3-C2R1	mel3-C3R1	mel3-C4R1	
***	95.2	99.4	mel3-C2R1
	***	95.5	mel3-C3R1
		***	mel3-C4R1

Similarity: 95.2-99.4

S. microdontum-1

Majority CCTTTTGTGCGAAATTCGGTAGTGTAATTGAAGAAATAT-TATT-ATTTATTTTTTGCAGAAACGGCGTCGTTAGGACAG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
mcd_51.1_5S.1 -.C.....-...-.....
mcd_51.1_5S.2-...-.....-C.....
mcd_51.1_5S.3-...-.....
mcd_51.1_5S.5-...-.....
mcd_51.2_5S.5-...-.....
mcd_51.2_5S.1C.....A...T.....--
mcd_51.2_5S.2C.....A...T.....--
mcd_51.2_5S.3C.....A...T.....--
mcd_51.2_5S.4C.....A...T.....--

Majority GTGATGGGGGAGTTGAGGATGGGCGTGACGGGCGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGG
90 100 110 120 130 140 150
-----+-----+-----+-----+-----+-----+-----+
mcd_51.1_5S.1
mcd_51.1_5S.2
mcd_51.1_5S.3
mcd_51.1_5S.5
mcd_51.2_5S.5
mcd_51.2_5S.1 ----...C.....C.....
mcd_51.2_5S.2 ----...C.....C.....
mcd_51.2_5S.3 ----...A.C.....C.....
mcd_51.2_5S.4 ----...A.C.....C.....

Majority CTAGGGCGTTGGGAGGAAGGATGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
mcd_51.1_5S.1 212 bp
mcd_51.1_5S.2 212 bp
mcd_51.1_5S.3 213 bp
mcd_51.1_5S.5 213 bp
mcd_51.2_5S.5 212 bp
mcd_51.2_5S.1 .C.....G.....A.....C 208 bp
mcd_51.2_5S.2 .C.....G.....A.....A.....C 208 bp
mcd_51.2_5S.3 .C.....G.....A.....C 208 bp
mcd_51.2_5S.4 .C.....G.....A.....C 208 bp

mcd_51.1_5S.1	mcd_51.1_5S.2	mcd_51.1_5S.3	mcd_51.1_5S.5	mcd_51.2_5S.5	mcd_51.2_5S.1	mcd_51.2_5S.2	mcd_51.2_5S.3	mcd_51.2_5S.4	
***	98.1	99.1	99.1	98.6	91.6	91.2	91.2	91.2	mcd_51.1_5S.1
	***	99.1	99.1	99.5	91.6	91.2	91.2	91.2	mcd_51.1_5S.2
		***	100.0	99.5	92.6	92.1	92.1	92.1	mcd_51.1_5S.3
			***	99.5	92.6	92.1	92.1	92.1	mcd_51.1_5S.5
				***	92.1	91.6	91.6	91.6	mcd_51.2_5S.5
					***	99.5	99.5	99.5	mcd_51.2_5S.1
						***	99.1	99.1	mcd_51.2_5S.2
							***	100.0	mcd_51.2_5S.3
								***	mcd_51.2_5S.4

Similarity: 91.2-100

S. microdontum-2, mcd2

Majority CCTTTTGTGCGAAATTTGGTTCGTGTAATTGAAAAAATAT-TATT-ATTTATTTTTTGCAGGAACGACGTCGTTAGGACAG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
mcd2-C1R1-.....
mcd2-C1R2A.....
mcd2-C2R1-.....
mcd2-C2R2 .T.....-.....
mcd2-C2R3C.....-.....
mcd2-C1R3 ..C.....C.....G.....A.....T.....A.....G.....GA.----
mcd2-C1R4C.....G.....A.....T.....A.....GA.....-A.----

Majority GTGATGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
mcd2-C1R1C.....
mcd2-C1R2
mcd2-C2R1T...G.....
mcd2-C2R2
mcd2-C2R3
mcd2-C1R3 --..C.....C.....-----
mcd2-C1R4 --..C.....C.....-----

Majority CTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----
mcd2-C1R1G.... 213 bp
mcd2-C1R2 .G.....T.....A.....G. 213 bp
mcd2-C2R1 213 bp
mcd2-C2R2A..... 212 bp
mcd2-C2R3A.....G..... 213 bp
mcd2-C1R3G..... 166 bp
mcd2-C1R4 .C.....A.....G..... 165 bp

mcd2-C1R1	mcd2-C1R2	mcd2-C2R1	mcd2-C2R2	mcd2-C2R3	mcd2-C1R3	mcd2-C1R4	
***	96.7	98.1	98.1	97.7	71.2	70.2	mcd2-C1R1
	***	96.7	97.7	97.2	69.3	68.8	mcd2-C1R2
		***	98.1	97.7	71.6	70.7	mcd2-C2R1
			***	98.6	70.7	69.8	mcd2-C2R2
				***	71.2	70.2	mcd2-C2R3
					***	97.7	mcd2-C1R3
						***	mcd2-C1R4

Similarity: 68.8-98.6

S. multiinterruptum, mtp

Majority CTTTTTTGTTGAAATTCGGTCTGTGTAATATTTAAATATTATATTATTTTCTGCAGAAACGACATTCGGATTGAGACGTC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
mtp-C1R1
mtp-C1R2
mtp-C1R4 ..G.....
mtp-C1R5

Majority GTTAGGACAGGTGATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGTGGAGGCTAGGTCGGTGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
mtp-C1R1
mtp-C1R2
mtp-C1R4
mtp-C1R5A.....T.....A.....

Majority GGGGCAGGCTAGGGCGTTGGAGGAAGGAGGTGTTXAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
mtp-C1R1A.....T..C..... 222 bp
mtp-C1R2T..... 222 bp
mtp-C1R4CCC..... 222 bp
mtp-C1R5C..... 222 bp

mtp-C1R1	mtp-C1R2	mtp-C1R4	mtp-C1R5	
***	99.1	97.3	97.3	mtp-C1R1
	***	98.2	98.2	mtp-C1R2
		***	97.3	mtp-C1R4
			***	mtp-C1R5

Similarity: 97.3-99.1

S. muricatum , mur

Majority TTTTTCGGATCGAAATTCGTCATAATTCGTGTATTCGATAATATTTATTTATATTTTTTTGCGGAAACXTCATTCTGAT
 10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pSmur-5S5 A.....
pSmur-5S15 G.....

Majority CGAGACGTCGTTAGGACCTGTGAGGGGGCGTGACCGGCGGCGTTGXCTGGAGGGTCGGTCGGTAGGGGTGCAGGATAGG
 90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pSmur-5S5 C.....
pSmur-5S15 T.....

Majority GCGTTGGGAGGAAGGAGGTGTTTAATAAGATTAGAATGCAATTACTGAT
 170 180 190 200
-----+-----+-----+-----+-----+
pSmur-5S5 209 bp
pSmur-5S15 209 bp

pSmur-5S5	pSmur-5S15	
***	99.0	pSmur-5S5
	***	pSmur-5S15

Similarity: 99.0

S. neorickii, neo

Majority CCTTTTGTGTTGAAATTTGATCTCGTAATTGAAAAAAAA-TATACTAATTTATTTTTTTT-GCGGAAAATACGTTCCGGAT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
neo-C1R1--.....-.....
neo-C2R1A.....C.....T.....
neo-C3R1-.....-.....A...
neo-C4R1-.....-.....
neo-C5R1--.....-.....

Majority TGAGACGTCATTAGGATATGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGTGCGTCGGTGCGTGGAGGGTT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
neo-C1R1A.....
neo-C2R1G.....
neo-C3R1A.....T...
neo-C4R1
neo-C5R1A.....

Majority TTAAAGCGGGGGCGGGCTAGGGCGTTGGGAGGAAGGTTGTGTTTAAATAGATATTAGAGTGCAATGAATGAC
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+-----
neo-C1R1A.....T..... 228 bp
neo-C2R1G..... 232 bp
neo-C3R1 230 bp
neo-C4R1G.....T..... 230 bp
neo-C5R1 229 bp

neo-C1R1	neo-C2R1	neo-C3R1	neo-C4R1	neo-C5R1	
***	95.7	96.6	97.9	97.9	neo-C1R1
	***	96.6	97.0	97.0	neo-C2R1
		***	97.9	98.7	neo-C3R1
			***	98.3	neo-C4R1
				***	neo-C5R1

Similarity: 95.7-98.7

S. neorossii, nrs

DIRECT SEQUENCING - 213 bp

S. nigrum, nig

Majority	CCTTTTGTGCGAAGTTCGGCATGATTTTCGTCTATTGTGATAATATATATTATTATTTTTTGCAGAAACGGCATTTCGTGCC	
	10 20 30 40 50 60 70 80	
	-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+	
nig-C1R1	.....	
nig-C3R1	A.....	
nig-C4R1	T.....	
nig-C35R1	.....	
Majority	TAGACGTCGCTAGGACGGGTGACGGAGGCGCTGAGGACGGGCGTGACAGGCATGCCGTCGGTGCGTGAGGCTXGGGAGG	
	90 100 110 120 130 140 150 160	
	-----+-----+-----+-----+-----+-----+-----+-----+-----+	
nig-C1R1	A.....	
nig-C3R1	A.....A.....	
nig-C4R1	G.....	
nig-C35R1	G.....	
Majority	CGGGGGACATGCTATGTCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGCGCAATGAATGAT	
	170 180 190 200 210 220	
	-----+-----+-----+-----+-----+-----	
nig-C1R1	.....	226 bp
nig-C3R1	.....	226 bp
nig-C4R1	.T.....	226 bp
nig-C35R1	.....	226 bp

nig-C1R1	nig-C3R1	nig-C4R1	nig-C35R1	
***	99.1	98.7	99.6	nig-C1R1
	***	97.8	98.7	nig-C3R1
		***	99.1	nig-C4R1
			***	nig-C35R1

Similarity: 97.8-99.6

S. okadae-1, oka1

Majority CCTTTTGTCTGAAATTCGGTCGTGTAATTGAAGAAATGAAATATATTAATATTTATTTTTCAGAAAGGGCGTCGTTAG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
oka_I_5S.1
oka_I_5S.2
oka_I_5S.3T.....

Majority GACAGGCGATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
oka_I_5S.1AA...
oka_I_5S.2
oka_I_5S.3

Majority GCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTACGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+
oka_I_5S.1 .A.....C.....C.....G.....T..... 220 bp
oka_I_5S.2 220 bp
oka_I_5S.3 220 bp

oka_I_5S.1	oka_I_5S.2	oka_I_5S.3	
***	96.8	96.4	oka_I_5S.1
	***	99.5	oka_I_5S.2
		***	oka_I_5S.3

Similarity: 96.4-99.5

S. okadae-2, oka2

Majority CCTTTTGTCTGAAATTCGGTCGAGTAATTGAAGAAATGAAATATATTAATATTTATTTTTGCAGAAAGGGCGTCGTTAG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
oka_II_5S.1 .T.....T.....
oka_II_5S.2T.....A.....
oka_II_5S.3
oka_II_5S.5

Majority GACAGGTGATGGGGCGTTGAGGATGGGCGTGACGGCGGCGTCATGCGACGGTGCGCGTGGAGGCTAGGTCGGTGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
oka_II_5S.1
oka_II_5S.2C.....
oka_II_5S.3
oka_II_5S.5T.....

Majority GGAGGATAGGGCGTTGGGAGGAAGGAGGTGTTTAAATAGAATTTAGAGTGCTATGAATGAC
170 180 190 200 210 220
-----+-----+-----+-----+-----+
oka_II_5S.1 220 bp
oka_II_5S.2 .C...C.....A.....G.....T 220 bp
oka_II_5S.3 165 bp
oka_II_5S.5 220 bp

oka_II_5S.1	oka_II_5S.2	oka_II_5S.3	oka_II_5S.5	
***	95.5	74.5	98.6	oka_II_5S.1
	***	72.3	95.9	oka_II_5S.2
		***	74.5	oka_II_5S.3
			***	oka_II_5S.5

Similarity: 72.3-98.6

S. okadae-3, oka3

MajorityCCTTTTTGTCGAAATTCGGTCGTGCAATATATTTATTTATTTATTGCAGAAAAGGCGTCGTTAGGACAGGTGATGGGGGC1020304050607080
-----+-----+-----+-----+-----+-----+-----+-----+
oka3-C1R1.....
oka3-C1R2....C.....
oka3-C1R3.....T

MajorityGTTGAGGATGGGCGTGACGGGCGGCCTCATGCGACGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGATAGGGCGTTG90100110120130140150160
-----+-----+-----+-----+-----+-----+-----+-----+
oka3-C1R1.....G.....
oka3-C1R2.....
oka3-C1R3.....-

MajorityGGAGGAAGGAGGTGTTTAATAGAAATTTAGAGTGCTAGGAATGAC170180190200
-----+-----+-----+-----+
oka3-C1R1.....T.....G.204 bp
oka3-C1R2.....204 bp
oka3-C1R3.....G.....203 bp

oka3-C1R1	oka3-C1R2	oka3-C1R3	
***	98.0	97.1	oka3-C1R1
	***	98.0	oka3-C1R2
		***	oka3-C1R3

Similarity: 97.1-98.0

S. ossicruentum, oss

Majority CCTTTTTTGCCGAAATTCXTCGTCTATTCAGCGAATGATTTTTT-TTTGGGCGGTTGGGTCGTCTGCTTGGGCAGAGAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
oss-C1R1A.....-.....A.-.....
oss-C3R1 .T.....T.....G-----T...T.....AG.....T.....
oss-C10R1A-----A.....G...T.....AG.....T.....
oss-C15R1G.....-.....
oss-C20R1A.....-.....
oss-C26R1G.....-.....-.....

Majority GCCGTAAGGACGGTTGAGGAAGGGCGTCGCCGGCGCGTGGAGGCTAGGGCGGTGGTGTGCGGGXTATGGCGTTGGGGGAG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
oss-C1R1A.....A.....G.....
oss-C3R1T.....A.....C.....
oss-C10R1T.....C.....
oss-C15R1C.....
oss-C20R1G.....
oss-C26R1A.....G.G.A.....

Majority GAATGAGGTTTAATAGAXTTAAGAGTGCTAGGAATGAT
170 180 190
-----+-----+-----+-----
oss-C1R1A.....T..... 196 bp
oss-C3R1-..... 185 bp
oss-C10R1-..... 185 bp
oss-C15R1-..... 196 bp
oss-C20R1A.....T..... 197 bp
oss-C26R1A...G..... 196 bp

oss-C1R1	oss-C3R1	oss-C10R1	oss-C15R1	oss-C20R1	oss-C26R1	
***	85.4	86.9	96.0	98.0	94.4	oss-C1R1
	***	97.0	89.4	87.4	85.9	oss-C3R1
		***	89.9	88.9	86.4	oss-C10R1
			***	98.0	96.5	oss-C15R1
				***	96.5	oss-C20R1
					***	oss-C26R1

Similarity: 85.4-98.0

S. pachyandrum, pac

Majority CTTTTTGTGCGAAATTCGGCATAATTTCTGTCXATTCGATXGTAT-TTTTTTCGCAGAAACGACXTTTGAGCGGAXACGTCTG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
pac-C1R1C.....T.....T...T.....AA.....A...G...GG.....
pac-C2R1-...T.....T...A...-...G...-.....G.....C.....
pac-C11R1AA.....TT.....CA..A...T.....A.....A.G.....
pac-C30R1AA.....TT.....CA..A...T.....A.....A.G.....
pac-C33R1A.....T...-.....A.....T...G...A.....C.....
pac-C39R1-...T.....A...-A..G...-.....G.....C..T...

Majority TTAGGACAGGCXCTGAGGATGGGCGTGTCTXGGCGTGACCACGCGCCGGTGCGTGGGGGCTAGTGCGGTGTGGTGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pac-C1R1G.....T.....G.....C.....G.....G...T.....
pac-C2R1A.....A.....A.....T.....
pac-C11R1TGA..T.....A...G..A.....T.....
pac-C30R1TGA..T.....A...G.....T.....
pac-C33R1A...A.....A.....A.....T.....TA.....
pac-C39R1A.....A.....A.....T.....T.....

Majority AGGGCGTTGGGAGGAATGAGGTTTAATAGAATTTAGAGTGCTAXGAATGAT
170 180 190 200 210
-----+-----+-----+-----+
pac-C1R1AA.....C.....AAT...G..... 211 bp
pac-C2R1C.....G..G.... 208 bp
pac-C11R1A.....A.....A....C. 211 bp
pac-C30R1A.....A.....T. 211 bp
pac-C33R1T.....C.....G..G.... 210 bp
pac-C39R1A.....A.....A..... 208 bp

pac-C1R1	pac-C2R1	pac-C11R1	pac-C30R1	pac-C33R1	pac-C39R1	
***	85.8	83.9	84.8	84.8	84.8	pac-C1R1
	***	85.8	86.7	92.4	94.3	pac-C2R1
		***	98.6	83.4	84.8	pac-C11R1
			***	84.4	85.8	pac-C30R1
				***	90.5	pac-C33R1
					***	pac-C39R1

Similarity: 83.4-98.6

S. palustre (= brevidens)-1, pal1

Majority-----TGAA-----TGAT-----
1020304050607080
-----+-----+-----+-----+-----+-----+-----+
brev_5S.1-----...-----
brev_5S.2-----...-----
brev_5S.3-----...-----
brev_5S.6-----...-----
brev_5S.4ACTTTTGTAGAAATTCGGTCGTGTATT...AAATATATATATATTTTTCAGAAACGACATTGGAT...CGGTCG
brev_5S.5ACTTTTGTAGAAATTCGGTCGTGTATT...AAATATATATATATATTTTTCAGAAACGACATTGGAT...CGGTCG

Majority-GTAGGACAGGTGACGGGGGCGCTTAGGATGGGCGTGAAAGGCGGCGTCAAGCGTCGGTGCGTGGAGGCTAGGTCGGTGG
90100110120130140150160
-----+-----+-----+-----+-----+-----+-----+
brev_5S.1-.....
brev_5S.2-.....G.....
brev_5S.3-.....A.....
brev_5S.6-.....
brev_5S.4T.....
brev_5S.5T.....

MajorityGGGGCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170180190200210220
-----+-----+-----+-----+-----+-----+
brev_5S.1.....150 bp
brev_5S.2.....T.....150 bp
brev_5S.3.....150 bp
brev_5S.6.....150 bp
brev_5S.4.....223 bp
brev_5S.5.....223 bp

brev_5S.1	brev_5S.2	brev_5S.3	brev_5S.6	brev_5S.4	brev_5S.5	
***	99.1	99.6	100.0	67.3	67.3	brev_5S.1
	***	98.7	99.1	66.4	66.4	brev_5S.2
		***	99.6	66.8	66.8	brev_5S.3
			***	67.3	67.3	brev_5S.6
				***	100.0	brev_5S.4
					***	brev_5S.5

Similarity: 66.4-100

S. palustre (= brevidens)-2, pal2

Majority ACTTTTGTAGAAATTCGGTCGTGTATTTGAAAAATATATATATATATXXTTTTTGCAGAAACGACATTCGGATTGATCGGT
 10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pal2-C1R1 --.....A.....
pal2-C1R2 -.....AT.....
pal2-C1R3 --.....
pal2-C1R4 AT.....

Majority CGTGTAGGACAGGTGACGGGGGCGCTTAGGATGGGCGTGAAAGGCGGCGTCAAGCGTCGGTGCGTGAGGCTAGGTCGGT
 90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pal2-C1R1 G.....
pal2-C1R2
pal2-C1R3 A..
pal2-C1R4 A.....

Majority GGGGGGCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
 170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+-----+
pal2-C1R1 C..... 223 bp
pal2-C1R2 224 bp
pal2-C1R3 223 bp
pal2-C1R4 225 bp

pal2-C1R1	pal2-C1R2	pal2-C1R3	pal2-C1R4	
***	97.3	98.2	97.3	pal2-C1R1
	***	98.2	99.1	pal2-C1R2
		***	98.2	pal2-C1R3
			***	pal2-C1R4

Similarity: 97.3-99.1

S. pampasense, pam

Majority CCTTTTTGTCGAAATTCGGTCGTGTAATAGAAAAATATTATTATTTATTTTGTAGAAACGACGT-CGTTAGGACAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
pam-C1R1C.....-.....A
pam-C1R2T.....-.....AT.....C.....A.T..GATT...G..
pam-C1R3A.....-.....
pam-C1R4C...T.....GA.....A.....C.....-...-----
pam-C3R1C.....-.....

Majority TGATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGC
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
pam-C1R1T.....
pam-C1R2--.....
pam-C1R3A.....
pam-C1R4 ---.....A.....-.....
pam-C3R1C.....G.....G.C...G.....C.....

Majority TAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
pam-C1R1G..... 213 bp
pam-C1R2 C.....A.....G.....G.... 211 bp
pam-C1R3C..... 213 bp
pam-C1R4 199 bp
pam-C3R1 213 bp

pam-C1R1	pam-C1R2	pam-C1R3	pam-C1R4	pam-C3R1	
***	90.2	96.7	88.8	95.3	pam-C1R1
	***	90.2	85.5	89.3	pam-C1R2
		***	88.8	95.3	pam-C1R3
			***	86.9	pam-C1R4
				***	pam-C3R1

Similarity: 85.5-96.7

S. paposanum, pap

Majority C C T T T T T G T C G A A A T T C G G C A T A A T T T C G T C T A T T T G A T A A T A T A T A T T T T T T G C A G A A A C G A C A T T C G G X C G G G G A C G
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pap-C1R1G.....
pap-C1R3G.....T.....
pap-C2R1G.....T.....
pap-C2R2G.....G.....

Majority T C G T T A G G A C A G G T G A C G G A G G G G C T T G G G A T G G G C G T G A C A G G C G G C A C C C A C G C G T C G G C G A G T G C A G G C T A G G G C G G
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pap-C1R1
pap-C1R3
pap-C2R1G.....
pap-C2R2

Majy T G G G G G A C A G G C T A G G G C G T T G G G A G G A G G T G T T T A A T A G A A T T T A G A G C G C T A G G A A T G A T
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+-----+
pap-C1R1 226 bp
pap-C1R3 226 bp
pap-C2R1 226 bp
pap-C2R2G..... 226 bp

pap-C1R1	pap-C1R3	pap-C2R1	pap-C2R2	
***	99.1	98.7	99.1	pap-C1R1
	***	98.7	98.2	pap-C1R3
		***	97.8	pap-C2R1
			***	pap-C2R2

Similarity: 97.8-99.1

S. paucissectum, pcs

Majority CCTTTTGGTCGAAATTCGGTCGAGTGATTGAAAAATATATTATTATTTTTCAGAAACGACATTCGGATTGAGACGTC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pcs-C1R1
pcs-C2R1C.
pcs-C2R2
pcs-C2R3C..
pcs-C3R1T.....

Majority GTTAGGACGGGTGATGGGGGXGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGTGAGGCTAGGCCGGTGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pcs-C1R1T.....
pcs-C2R1T.....
pcs-C2R2
pcs-C2R3C..
pcs-C3R1C.....

Majority GGGTCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCAATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
pcs-C1R1 223 bp
pcs-C2R1G..... 223 bp
pcs-C2R2 156 bp
pcs-C2R3G..... 223 bp
pcs-C3R1G..... 223 bp

pcs-C1R1	pcs-C2R1	pcs-C2R2	pcs-C2R3	pcs-C3R1	
***	99.1	70.0	98.7	98.7	pcs-C1R1
	***	69.1	97.8	97.8	pcs-C2R1
		***	69.1	69.1	pcs-C2R2
			***	98.2	pcs-C2R3
				***	pcs-C3R1

Similarity: 69.1-99.1

S. pennellii, pen

Majority CCTTTTCGTTGAAATTCGATCTCGTAATTGAAAAAATATACTCATCTATTTATTTTTCGCGAAAATACGTTCCGATTGA
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pen-C1R1
pen-C1R2C.....
pen-C1R3A.....T.....
pen-C1R4A.....

Majority TGCCTCATTAGGATATGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGTGCGTCGGTGCGTGGAGGGTTTTA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pen-C1R1A.....
pen-C1R2
pen-C1R3G.....
pen-C1R4G.....T.....

Majority AAGCGGGGGCGAGCTAGGGCGTTGGGAGGAAGTTGTGTTTAATAGATTTTAGAGTGCAATGAATGAC
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+-----+
pen-C1R1 229 bp
pen-C1R2 229 bp
pen-C1R3 229 bp
pen-C1R4T. 229 bp

pen-C1R1	pen-C1R2	pen-C1R3	pen-C1R4	
***	99.1	98.3	97.8	pen-C1R1
	***	98.3	97.8	pen-C1R2
		***	96.9	pen-C1R3
			***	pen-C1R4

Similarity: 96.9-99.1

S. peruvianum, per

Majority CCTTTTGTGTTGAAATTTGATCTCGTAGTTGAAAAAA-TATACTCATGTATTTATTTTTGCGTTAAATACGTTCCGGATT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
per-C1R1A.....
per-C1R2-.....
per-C1R3G-.....
per-C3R3-.....-.....

Majority GAGAGTTCATTAGGATATGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGTGCGTCGGTGCGTGGAGGGTTT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
per-C1R1A.....
per-C1R2
per-C1R3
per-C3R3

Majority TGAAGCGGGGGCGGGCTAGGGCGTTGGGCGGAAGGTTGTGTTTAATAGATTTTAGAGTGCAATGAATGAC
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+
per-C1R1 231 bp
per-C1R2 230 bp
per-C1R3A 230 bp
per-C3R3 229 bp

per-C1R1	per-C1R2	per-C1R3	per-C3R3	
***	99.1	98.3	98.7	per-C1R1
	***	99.1	99.6	per-C1R2
		***	98.7	per-C1R3
			***	per-C3R3

Similarity: 98.3-99.6

S. phlomoides, phl

Majority CTTTTTXXGCCGAAATTTGGCCGTGTATTCGGCGAGTGATTATTTATTTTCGGCGGTCGGGTCGTTTGCTTGGGCAGAGAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
phl-C1R1G.....A.....
phl-C1R3T.....
phl-C1R2T.....
phl-C2R1G.....

Majority GTCGTTAGGAAGGGCGTCGCCGGCGCGTGGAGGCTAGGGCGXXXXXXXXXXXXXXXXXXXXTGGGGGG--AGGAATGAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+
phl-C1R1T.....
phl-C1R3
phl-C1R2GTGGTGCGCAGGCTAGGGCG.....
phl-C2R1GTGGTGCGCAGGCTAGGGCG.....GG.....

Majority TTTAATAGAATTAAGAGTGCTGGAAATGAT
170 180 190
-----+-----+
phl-C1R1 168 bp
phl-C1R3 168 bp
phl-C1R2 188 bp
phl-C2R1 190 bp

phl-C1R1	phl-C1R3	phl-C1R2	phl-C2R1	
***	98.4	87.9	87.4	phl-C1R1
	***	89.5	87.9	phl-C1R3
		***	98.4	phl-C1R2
			***	phl-C2R1

Similarity: 87.4-98.4

S. phureja-1, phu1

DIRECT SEQUENCING - 212 bp

S. phureja-2, phu2

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATAGAAAAAATATTATTATTTATTTTTGCAGAAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
phu2-C1R1
phu2-C1R2C.....
phu2-C1R3C.....G.....T.....
phu2-C2R1A.....
phu2-C2R6
phu2-C2R8A.....C.....

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
phu2-C1R1
phu2-C1R2A.....
phu2-C1R3T.....T.....
phu2-C2R1G.....
phu2-C2R6A.....
phu2-C2R8T.....

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAAATAGAAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+-----
phu2-C1R1 213 bp
phu2-C1R2 213 bp
phu2-C1R3 213 bp
phu2-C2R1 213 bp
phu2-C2R6 213 bp
phu2-C2R8 213 bp

phu2-C1R1	phu2-C1R2	phu2-C1R3	phu2-C2R1	phu2-C2R6	phu2-C2R8	
***	99.1	97.7	99.1	99.5	98.6	phu2-C1R1
	***	96.7	98.1	98.6	97.7	phu2-C1R2
		***	96.7	97.2	96.2	phu2-C1R3
			***	98.6	97.7	phu2-C2R1
				***	98.1	phu2-C2R6
					***	phu2-C2R8

Similarity: 96.2-99.5

S. pimpinellifolium, pim

Majority CCTTTTGTGAAATTTGATCTCGTAATTGAAAAAAAAATATACTCATTTATTTTTTTTGC GGAAAATACGTTCCGATTGA
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pim-C1R1
pim-C1R2
pim-C2R1 A.....
pim-C3R1-.....

Majority GCGTCATTAGGATATGGGATGGTGGCGTCGGGGATGGGCGTGACGGGCGTCGTCGTGCGTCGGTGCGTGGAGGGTTTTA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pim-C1R1G.....
pim-C1R2
pim-C2R1A.....
pim-C3R1

Majority AAGCGGGGGCGGGCTAGGGCGTTGGGAGGAAGTTGTGTTTAATAGATTTTAGAGTGCAATGAATGAC
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
pim-C1R1T..... 229 bp
pim-C1R2 229 bp
pim-C2R1 229 bp
pim-C3R1T..... 228 bp

pim-C1R1	pim-C1R2	pim-C2R1	pim-C3R1	
***	99.1	98.3	98.3	pim-C1R1
	***	99.1	99.1	pim-C1R2
		***	98.3	pim-C2R1
			***	pim-C3R1

Similarity: 98.3-99.1

S. pinnatisectum-1, pnt1

Majority CCTTTTGTGCGAAATTCGGTTCGTGTAXXTGAAAAAATATXATTAXTTATTTTTTGCAGAACGACATTCGATTGACGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
pSph6AT.....T....T.....
pSph10GA.....T.A..A.....
pSph32GA.....A..ATA.....
pSph48AT.....TAT.A....T.....

Majority GTGATGGGXXTTGXXGATGGCGTGACGGGCGGCGTCATGCGTCGGTGC GTGGAGGCTAGGTCCGGTGGGGGGCAGGCCAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pSph6CG...GA.....
pSph10CG...GA.....C.....G.....
pSph32GC...AG.....A.....
pSph48GC...AG.....

Majority GCGTTGGGAGGAAGGAGGTGTTTAATAGGATTTAGAGTGCTATGAXTGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
pSph6A.... 210 bp
pSph10GG.... 210 bp
pSph32A.....G.... 210 bp
pSph48A.... 210 bp

pSph6	pSph10	pSph32	pSph48	
***	96.2	93.8	96.2	pSph6
	***	93.8	92.4	pSph10
		***	94.8	pSph32
			***	pSph48

Similarity: 92.4-96.2

S. pinnatisectum-2, pnt2

Majority	CCTTTTGTGCGAAATTCGGTTCGTGTAATTGAAAAATATATTATTATTTTTCAGAAACGACATTCGGATTGACGGGT															
	10	20	30	40	50	60	70	80								
pnt2-C3R1	..A..	..C..	.....	.....	.....	.....	.....	.....								
pnt2-C3R2	.A.....	.....	.....	.....	.....	AT.....	..C.....	.....								
pnt2-C3R3	.....	.....	.....	.....	.....	.....	..A.....	.....								
pnt2-C3R4	.....	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R5	.....	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R6	.....	.....	.....	.....	.....	A.....	.....	.....								
pnt2-C3R7	.....	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R8	.....	G.....	.....	G..G..	.....	.....	.....	.....								
pnt2-C3R9	.....	..A.....	.....	.....	.....	.....	T.....	.....								
pnt2-C3R10	.A.....	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R11	.....	..C.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R12	.A.....	.....	.....	.....	.....	A.....	.....	.....								
pnt2-C3R13	T.....	..C.....	.....	.....	.....	.....	..G.....	..A.....								
pnt2-C3R14	.....	.....	.....	..C.....	.....	.....	.....	.....								
pnt2-C3R15	.....	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R16	.....	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R17	.A.....	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R18	.....	.....	.....	.....	.....	.....	.....	.....								

Majority	GATGGGGG-CGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGTGAGGCTAGGTCGGTGGGGGGCAGGCCA															
	90	100	110	120	130	140	150	160								
pnt2-C3R1	-T.....	.....	.....	.....	A.....	.....	.....	.....								
pnt2-C3R2	..G.....-	.....	.....	.....	.....	.....	.....	T.....								
pnt2-C3R3	A.....G.....	.....	.....	.....	.....	.....	.....	G.....								
pnt2-C3R4	G.....	..A.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R5	G.....	.....	T.....	.....	G.CG..	CA.CGA.A...	AC.C.CT.TCCCT.CAC.AC...	C...G								
pnt2-C3R6	.....-	.....	.....	.....	.....	.....	.....	A.....								
pnt2-C3R7	.....-	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R8	G.....	.....	.....	T.....	.....	.....	.....	.....								
pnt2-C3R9	.....-	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R10	-	..G.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R11	.....-	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R12	.....-	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R13	G..G.....	.....	.....	.....	.....	.....	.....	T.....								
pnt2-C3R14	G.....	.....	.....	.....	.....	.....	G.....	.....								
pnt2-C3R15	.....-	.....	.....	..C.....	.....	.....	.....	.....								
pnt2-C3R16	G.....	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R17	.....-	.....	.....	.....	.....	.....	.....	.....								
pnt2-C3R18	G.....	.....	.....	.....	.....	A.....	.....	.....								

Majority	GGGCGTTGGGAGGAAGGAGGXGTTTAAATAGGATTTAGAGTGCTATGAGTGAT					
	170	180	190	200	210	
pnt2-C3R1	...A.....	CAT.....	.....	.....	A....	211 bp
pnt2-C3R2		A.....	.....	A.....	A....	211 bp
pnt2-C3R3		T.....	.....	.....	A....	212 bp
pnt2-C3R4		T.....	.....	.....	A....	212 bp
pnt2-C3R5		T.....	.....	.....	A....	212 bp
pnt2-C3R6		A.G.....	.....	.....	.....	211 bp
pnt2-C3R7	T.....	T.....	.....	.....	A..A	211 bp
pnt2-C3R8		TC.....	.....	.....	A....	212 bp
pnt2-C3R9		AA.....	.....	.....	.....	211 bp
pnt2-C3R10		A.....	.....	.....	.....	211 bp
pnt2-C3R11	...T.....	A.....	.....	.....	.....	211 bp
pnt2-C3R12		T.....	.....	A.A.....	.....	211 bp
pnt2-C3R13		A.....	.....	.....	A....	212 bp
pnt2-C3R14		T.....	.....	.....	.....	212 bp
pnt2-C3R15		A.....	.....	.....	.....	211 bp
pnt2-C3R16		T.....	.....	.....	.....	212 bp
pnt2-C3R17		A.....	.....	.....	.....	211 bp
pnt2-C3R18		A.....	.....	.....	.....	212 bp

pnt2 - C3R1	pnt2 - C3R2	pnt2 - C3R3	pnt2 - C3R4	pnt2 - C3R5	pnt2 - C3R6	pnt2 - C3R7	pnt2 - C3R8	pnt2 - C3R9	pnt2 - C3R1 0	pnt2 - C3R1 1	pnt2 - C3R1 2	pnt2 - C3R1 3	pnt2 - C3R1 4	pnt2 - C3R1 5	pnt2 - C3R1 6	pnt2 - C3R1 7	pnt2 - C3R1 8	
***	92.9	94.8	95.8	83.5	94.3	95.8	93.9	95.8	94.8	95.3	94.3	92.9	94.8	95.3	95.8	95.3	94.8	pnt2 - C3R1
	***	94.3	95.3	83.5	95.8	95.3	93.4	95.8	96.2	95.3	95.8	93.4	94.3	95.8	95.3	96.7	95.3	pnt2 - C3R2
		***	98.1	86.3	95.8	97.2	96.2	95.8	96.2	96.2	95.8	95.3	97.2	96.7	98.1	96.7	97.2	pnt2 - C3R3
			***	86.8	96.7	98.1	97.2	96.7	97.2	97.2	96.7	96.2	98.1	97.6	99.1	97.6	98.1	pnt2 - C3R4
				***	84.4	85.8	84.9	84.4	84.9	84.9	84.4	84.0	86.3	85.4	86.8	85.4	85.8	pnt2 - C3R5
					***	96.7	94.8	97.2	97.6	97.6	97.2	94.8	96.7	98.1	97.6	98.1	97.6	pnt2 - C3R6
						***	96.2	96.7	97.2	97.2	96.7	95.3	97.2	97.6	98.1	97.6	97.2	pnt2 - C3R7
							***	94.8	95.3	95.3	94.8	94.8	96.2	95.8	97.2	95.8	96.2	pnt2 - C3R8
								***	97.6	97.6	96.2	94.8	96.7	98.1	97.6	98.1	97.6	pnt2 - C3R9
									***	98.1	97.6	95.3	97.2	98.6	98.1	99.5	98.1	pnt2 - C3R1 0
										***	96.7	95.3	97.2	98.6	98.1	98.6	98.1	pnt2 - C3R1 1
											***	93.9	96.7	97.2	97.6	98.1	96.7	pnt2 - C3R1 2
												***	95.3	95.8	96.2	95.8	96.2	pnt2 - C3R1 3
													***	97.6	99.1	97.6	98.1	pnt2 - C3R1 4
														***	98.6	99.1	98.6	pnt2 - C3R1 5
															***	98.6	99.1	pnt2 - C3R1 6
																***	98.6	pnt2 - C3R1 7
																	***	pnt2 - C3R1 8

Similarity: 83.5-99.5

S. polyadenium-1, pld1

Majority CTTTTTGTCAAAATTCGATATTATAATTTTTTGCAGAGACGACATTGGGATTGAGACGTCGTCAGGAAAGGTGATGGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pSpld5S11
pSpld5S13G.....
pSpld5S12A...T.....A.AC.....G.....C.....

Majority -----GGCGTAACGGGCCGCGTGACGCGTCGGTGCGTGAGGCTAGGTCGGTGGGGGGTAGGCTAGGGCGTT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pSpld5S11 -----.....A.A.....A.....
pSpld5S13 -----.....A.....C.....
pSpld5S12 CGTGTTGAGGACG.....G.....G.....C.....

Majority GGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGGAT
170 180 190 200
-----+-----+-----+-----+-----
pSpld5S11 193 bp
pSpld5S13 .A..... 193 bp
pSpld5S12 206 bp

pSpld5S11	pSpld5S13	pSpld5S12	
***	96.6	87.4	pSpld5S11
	***	86.9	pSpld5S13
		***	pSpld5S12

Similarity: 86.9-96.6

S. polyadenium-2, pld2

Majority CTTTTTTGTCAAAATTCGXTATTATAATTATTTTGCAGAGACGACATTGGGATTGAGACGTCGTCAGGAXAGGTGATGGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pld2-C1R1G.....G.....C.....
pld2-C1R2G.....T.....C.....
pld2-C1R3A.....T.....A.....
pld2-C1R4G.....G.....T.....A.....A..
pld2-C1R5C...A.A.-.....A..C.....A.....G.....C.....
pld2-C1R6 A.....A.....T.....T.....A.....

Majority CGTXXTTGAGGACGGGCGTGACGGGCGGCGTGACGCGTCGGTGCGTGAGGCTAGGTCGGTGGGGGGTAGGCTAGGG-----
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pld2-C1R1 ...G.....-----
pld2-C1R2 ...C.....A.....-----
pld2-C1R3 -----A.....C.....A....TGTT
pld2-C1R4 ...C.....CT.....A.....C.....T..A.....-----
pld2-C1R5 ...G.....-----
pld2-C1R6 -----A.....C.....A....TGTT

Majority---CGTTGGGAGGAAGGAGGTGTTTAAATAGAATTTAGAGTGCTATGAATGGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
pld2-C1R1 ---..... 206 bp
pld2-C1R2 ---..... 206 bp
pld2-C1R3 GGG.....T-.. 199 bp
pld2-C1R4 ---..... 206 bp
pld2-C1R5 ---A..... 205 bp
pld2-C1R6 GGG.....T-.. 199 bp

pld2-C1R1	pld2-C1R2	pld2-C1R3	pld2-C1R4	pld2-C1R5	pld2-C1R6	
***	98.1	86.4	95.3	95.3	85.4	pld2-C1R1
	***	85.9	96.2	94.4	85.0	pld2-C1R2
		***	83.1	83.6	99.1	pld2-C1R3
			***	90.6	82.2	pld2-C1R4
				***	83.1	pld2-C1R5
					***	pld2-C1R6

Similarity: 82.2-99.1

S. pseudocapsicum, pse

Majority CCTTTTGTCCAGCAGAAACGGGGCGAGGAGGGGCGTCTGACGGCCGAGCATTTTTTTTTCAGCAGAAACGGGGCGAGGA
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
pSpse-5S5 ..C.....
pSpse-5S7 (1) T.....
pSpse-5S7 (2)-.....T.....

Majority GGGGCGTGTCTCGGGGTCACGACGCGCCGGGGCGGGGGTGGAGGCTGGGGGAGGGAGTGAGGCTTAATAGAATTTCGAG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pSpse-5S5
pSpse-5S7 (1)A.....G.....C.....
pSpse-5S7 (2)TA.....

Majority CGCGCTGGATGAT
170
-----+---
pSpse-5S5 173 bp
pSpse-5S7 (1) 173 bp
pSpse-5S7 (2)T..... 172 bp

pSpse-5S5	pSpse-5S7 (1)	pSpse-5S7 (2)	
***	97.1	97.1	pSpse-5S5
	***	95.3	pSpse-5S7 (1)
		***	pSpse-5S7 (2)

Similarity: 95.3-97.1

S. pseudolulo, psl

Majority C C T T T T T T T T G T C G A A A C T C G G C A T A A T T T C G C C A T C A C T A T T T T T T T T C C - C G G A A A C G A X A T T T G T T T G G G T C G A G G C
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pSpsl-2-..A..T..A.....
pSpsl-3-.....C.....
pSpsl-5S1 T.....T.....C.TTG.....T.....

Majority G T C G C T T G G G C A A T T G A G G A G G G G - C G C C G C C G T G C G A C G G T G C G T G G A G G C T A G G G C G G T G G T G C G C G G G C T A G G G C G T
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pSpsl-2-.....
pSpsl-3-.....
pSpsl-5S1A.....G.....G.....G.....A.....A.....

Majority A G G G A G G A A T G A G G T T T A A T A G A A T T T A G A G T G G T A X G A T T A A A T A G A A T T T A G A G T G C T A C G A A T G A C
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+-----+-----+
pSpsl-2G..... 227 bp
pSpsl-3C..... 227 bp
pSpsl-5S1C.....C.....-----.....A 204 bp

pSpsl-2	pSpsl-3	pSpsl-5S1	
***	98.3	81.2	pSpsl-2
	***	82.1	pSpsl-3
		***	pSpsl-5S1

Similarity: 81.2-98.3

S. quitoense, qui

Majority C C T T T T T T A T - T C G A A A C T G G G C A T A A T T T T G T C A T C A T T A T T T T T T T T G G A G G A A C G A C A T T T G T T T G G G C C G A G G C G
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pSqui-5S1T.G.....C.....C.C.....C.....TCC.A.....A.....T.....
pSqui-5S2-.....
pSqui-5S4-.....
pSqui-5S5-.....

Majority T C G C T A G G A A T G T T G A T G A G G G - C G C C G C - - - - - G C G T G G A G G C G A T G G T G G T G G T G C G C G G G C T A G G G C G T C G
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pSqui-5S1T...CAA....G....G.....CGTGCGACGGT.....T.G..C.....A.....A.
pSqui-5S2-.....-.....-.....A.....
pSqui-5S4-.....-.....G.....
pSqui-5S5-.....-.....

Majority G G A G G A A T G A G G T T T A A T G G A A T T T A G A G T G C T G G G A - - - - - A T G A C
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
pSqui-5S1A.....G.A...TTAAATAGAATTTAGAGTGCTACGA..... 227 bp
pSqui-5S2A.....-..... 188 bp
pSqui-5S4-..... 189 bp
pSqui-5S5-..... 189 bp

pSqui-5S1	pSqui-5S2	pSqui-5S4	pSqui-5S5	
***	71.4	72.2	72.7	pSqui-5S1
	***	98.2	98.7	pSqui-5S2
		***	99.6	pSqui-5S4
			***	pSqui-5S5

Similarity: 71.4-99.6

S. raphanifolium-1, rap1

DIRECT SEQUENCING - 172 bp

S. raphanifolium-2, rap2

Majority CCTTTTGTGCGAAATTXGGXCGTGXAAXXXTXAAAXAXTATATTXXXXTXXTGXAGAAACGACXXXXXXXXXXXXXGTC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
rap2-L-DSC..T...T..TAT.T...T.T.....ATTT..C..C.....ATTCGGATTGAGAC...
rap2-S-DSG..C...C..A--.G...A.A.....---.T..G.....-----...
Majority GTTXXGXXXXXXGATGGGGCGTGXGAGGATGGGCGTXXXXXXXXXXXXXXXXXXXXCGGTGCGTGAGGCTXGGTCGGXGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
rap2-L-DS ...AG.ACAGGT.....C.....GACGGGCGGCGTCATGCGT.....A.....T..
rap2-S-DS ...GA.-----T.....-----G.....C..
Majority GGGGCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
rap2-L-DS 223 bp
rap2-S-DS 178 bp

rap2-L-DS	rap2-S-DS	
***	73.5	rap2-L-DS
	***	rap2-S-DS

Similarity: 73.5

Note: DIRECT SEQUENCING of long (L) and short (S) bands isolated from gel

S. raphanifolium-3, rap3

Majority C C T T T T T G T C G A A A T T G G G T C G T G C A A A T G A A A A A A T A T A T T T T T T G G A G A A A C G A C G T C G T T G A G G A T G G G G G C G T T G A
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
rap3-C1R1G.....T.
rap3-C1R2C.....
rap3-C1R3A.....
rap3-C2R1A.....
rap3-C2R2
rap3-C3R1G.....
rap3-C3R2A.....
rap3-C4R1C.....

Majority G G A T G G G C G T C G G T G C G T G G A G G C T G G G T C G G C G G G G G C A G G C T A G G G C G T T G G G A G G G A G G T G T T T A A T A G A A T T
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
rap3-C1R1
rap3-C1R2T.....A.....
rap3-C1R3A.....
rap3-C2R1T.....
rap3-C2R2
rap3-C3R1T.....C.....
rap3-C3R2
rap3-C4R1A.....

Majority T A G A G T G C T A T G A A T G A T
170
-----+-----
rap3-C1R1A..... 178 bp
rap3-C1R2 178 bp
rap3-C1R3 178 bp
rap3-C2R1 163 bp
rap3-C2R2 178 bp
rap3-C3R1 178 bp
rap3-C3R2G..... 178 bp
rap3-C4R1A.. 178 bp

rap3-C1R1	rap3-C1R2	rap3-C1R3	rap3-C2R1	rap3-C2R2	rap3-C3R1	rap3-C3R2	rap3-C4R1	
***	96.6	97.2	88.8	98.3	97.8	97.2	96.6	rap3-C1R1
	***	98.3	88.8	98.3	96.6	97.2	98.9	rap3-C1R2
		***	90.4	98.9	97.2	97.8	98.3	rap3-C1R3
			***	90.4	88.8	89.9	88.8	rap3-C2R1
				***	98.3	98.9	98.3	rap3-C2R2
					***	97.2	96.6	rap3-C3R1
						***	97.2	rap3-C3R2
							***	rap3-C4R1

Similarity: 88.8-98.9

S. scabrum, sca

Majority CCTTTTGTGCGAAATTCGGCATAATTXCGTCTATATGATAATATATATTATTATTATTTTGCGGAAACGGCATTCGTGC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
sca-C1R1G.....G...T.....T.....-.....A.....A.....
sca-C2R1T.....T.....T.....A.....
sca-C5R1A.....C.....T.....
sca-C5R2T..C.....T.....A.....

Majority CTAGACGTCGCTAGGACGGGTGACGGAGGCGCTAAGGACGGGCGTGACAGGCATGCCGTCGTTGCGTGGAGGATAGGGCG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
sca-C1R1A.....
sca-C2R1T.....T.....
sca-C5R1T.....
sca-C5R2

Majority GCGXGGGAXATGCTAAGGCGTTTGGAGGAAGGAGGTGTTTAATAGAAATTTAGAGCGCAATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
sca-C1R1 ...A...T.....A.....A..... 226 bp
sca-C2R1 ...A...T.....T..... 227 bp
sca-C5R1 ...G...C.....T.....C..... 227 bp
sca-C5R2 ...G...C.....C..... 227 bp

sca-C1R1	sca-C2R1	sca-C5R1	sca-C5R2	
***	94.3	92.5	93.0	sca-C1R1
	***	94.3	94.7	sca-C2R1
		***	96.0	sca-C5R1
			***	sca-C5R2

Similarity: 92.5-96.0

S. seaforthianum, sea

Majority TTTTTTGGTCGAAATTCGACATAATATTTTCGTTTGACAATGTATATAAAATATATTTTGCAGAAACGACATTAGAAGCCC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pSsea-1A.....
pSsea-3A.....
pSsea-4 ..A.....A.....C.....A.....T

Majority AGAGGTCGTTAGGATATGCGATTGAGATACTGGTTATAGACTAGACAGACGGCACCATXCGTCGATGCATGGAAGATTGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pSsea-1AT.....
pSsea-3G....C.....C.....C.A.
pSsea-4 ...C.....C.....G....G....A....A.....G.....T.....

Majority GCGGTGAGGGACATGCTAGTGCGTTGTGAGGAAGGAGGTGTTTAATACAATTTAGGGTGCTAGGAATGAT
170 180 190 200 210 220 230
-----+-----+-----+-----+-----+-----+
pSsea-1C.....G.....C..TC.A.T..... 230 bp
pSsea-3G..... 230 bp
pSsea-4A.....T..... 230 bp

pSsea-1	pSsea-3	pSsea-4	
***	93.0	89.6	pSsea-1
	***	90.9	pSsea-3
		***	pSsea-4

Similarity: 89.6-93.0

S. sejunctum, sej

Majority CTTTTTTAGCCGAAATTTTCGTCGTCTACTCGGCGGATGATTATTTTTTTTGGCGGTTGGGTCGTTTGCTTGGGCAGAGAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
sej-C1R1A.....
sej-C2R1A.....
sej-C6R1
sej-C11R1

Majority GTCGTTAGGACGGTTGXGAAAGGGCGTCGCCGGCGCGTGGATACCCAGGCGGTGGTGTGCAGGCTTGGGCGTGGGTGAGT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
sej-C1R1A...C.....
sej-C2R1G.....A.....
sej-C6R1C.....
sej-C11R1G.....

Majority XGAGGAATGAGGTTCAATAGAATTAAGAGTGCTAGGAATGCC
170 180 190 200
-----+-----+-----+-----+
sej-C1R1 C..... 202 bp
sej-C2R1 G..... 202 bp
sej-C6R1 C..... 202 bp
sej-C11R1 G..... 202 bp

sej-C1R1	sej-C2R1	sej-C6R1	sej-C11R1	
***	97.0	99.0	98.0	sej-C1R1
	***	98.0	99.0	sej-C2R1
		***	99.0	sej-C6R1
			***	sej-C11R1

Similarity: 97.0-99.0

S. sisymbriifolium, sis

Majority CCTTTTTGTCGAAATTCGGCATAATATCGCCGTCTGTTTGATGAGATAXTTTTTTTTTCCGCGGGAACGACATTTTGGCC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
sis-C1R1C.....
sis-C2R1T.....

Majority GAGACGTCGACAGGACGACGGTTGAGGAAGGGCGTCACCGCGCGCCGGTGCGCGGAGGCTGGGGCGGTGGTGTGCAGGGC
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
sis-C1R1
sis-C2R1

Majority AGGGCGCTGGGACGAATGAGGTTTAATAGAATTTAGAGCGCTAGGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
sis-C1R1 211 bp
sis-C2R1 211 bp

sis-C1R1	sis-C2R1	
***	99.5	sis-C1R1
	***	sis-C2R1

Similarity: 99.5

S. sitiens, sit

Majority CTTTTTGTCTAAATTCGGTCGCGTGATTGAAAAAATATACTTATTTATTTATTTTGCAGAAAATACGTTCCGATTGA
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
sit-C1R1
sit-C1R2
sit-C1R3G...C.....
sit-C2R1C.....
sit-C3R1G.....

Majority GACGTCATTAGGATATGGGACGGGGCGTTGAGGATGGGCGTGACGTGCGGCGTCATGCGTCGGTGCGTGGAGGGTTTTA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
sit-C1R1
sit-C1R2G.....
sit-C1R3T.....
sit-C2R1
sit-C3R1T.....

Majority AAGTGGTGGACGGGCTAGGGCGTTGGGAGGAAGGATGTGCTTAATAGAATTTAGAGTGCAACGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+-----+-----+
sit-C1R1T..... 229 bp
sit-C1R2 229 bp
sit-C1R3T..... 229 bp
sit-C2R1T..... 229 bp
sit-C3R1T.....

sit-C1R1	sit-C1R2	sit-C1R3	sit-C2R1	sit-C3R1	
***	99.1	97.8	99.6	98.3	sit-C1R1
	***	97.8	98.7	98.3	sit-C1R2
		***	97.4	99.6	sit-C1R3
			***	97.8	sit-C2R1
				***	sit-C3R1

Similarity: 97.4-99.6

S. sogarandinum-1, sgr1

Majority	CCTTTTGTGCGAAATTCGGTCTGTAATTGAAGAAATATATTATTATTTTGCAGAAACGACATTTCGGATAGAGACGT	
	10 20 30 40 50 60 70 80	
sgr1-C1R1	C.....	
sgr1-C2R2	C.....	
sgr1-C6R1	T..G.C.....	
sgr1-C1R2	A.G.....	
sgr1-C1R4	A.G.....	
sgr1-C4R1	A.G.....G.....	
sgr1-C1R3	G.....	
sgr1-C2R1	-----	
sgr1-C3R1	-----	
sgr1-C4R2	-----	
Majority	CGTTAGGACAGGTGATGTGGGAGTTGAGGATGGGCGTGACGGGCGGCGTCACGCGTCGGTGCGTGAGGCTAGGTCGGCG	
	90 100 110 120 130 140 150 160	
sgr1-C1R1	...G.....G.....T.....	
sgr1-C2R2	...G.....	
sgr1-C6R1	C.....	
sgr1-C1R2	...C.....C-----	
sgr1-C1R4	...C.....C-----A	
sgr1-C4R1	...C.....C.....C-----	
sgr1-C1R3	G-----	
sgr1-C2R1	G-----	
sgr1-C3R1	G-----	
sgr1-C4R2	...G.....G-----	
Majority	GGGGGCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT	
	170 180 190 200 210 220	
sgr1-C1R1	G...	224 bp
sgr1-C2R2	.....	224 bp
sgr1-C6R1	.....	224 bp
sgr1-C1R2	C.....	210 bp
sgr1-C1R4	.A.....CGACC.C.GA.A..T...C.C...CCC..C.CG.CGC.CT.C.G.TC.....	210 bp
sgr1-C4R1	C.....	210 bp
sgr1-C1R3	...-.....C.....	215 bp
sgr1-C2R1	...-.....G.....	170 bp
sgr1-C3R1	.....	216 bp
sgr1-C4R2	...-.....C.....	215 bp

[illegible]

Similarity: 54.9-99.1

S. sogarandinum2, sgr2

Majority ACTTTTGTGCGAAATTCGGTTCGTGTAATTGAAAAAATATATTATTATTATTTGCAGAAACGAAATTCGGATTGAGACGT
 10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
sgr2-C1R1 T..
sgr2-C1R2
sgr2-C6R1
sgr2-C6R3 A..
sgr2-C6R2 A.....C..
sgr2-C1R3 T.....C..

Majority CGTTAGGACAGGTGA-----GCGTCACGCGTCGGTGCGTGAGGCTAGGTCGGTG
 90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
sgr2-C1R1 -----.....
sgr2-C1R2 -----.....A..
sgr2-C6R1 -----.....
sgr2-C6R3 -----.....A..
sgr2-C6R2 T.....TGTGGGAGTTGAGGATGGGCGTGACGGGCG.....
sgr2-C1R3 T.....TGTGGGAGTTGAGGATGGGCGTGACGGGCG.....A..

Majority GGGGGCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
 170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+-----
sgr2-C1R1 194 bp
sgr2-C1R2 194 bp
sgr2-C6R1 194 bp
sgr2-C6R3 194 bp
sgr2-C6R2 G..... 224 bp
sgr2-C1R3 A..... 224 bp

sgr2-C1R1	sgr2-C1R2	sgr2-C6R1	sgr2-C6R3	sgr2-C6R2	sgr2-C1R3	
***	99.1	99.6	98.7	84.4	83.9	sgr2-C1R1
	***	99.6	99.6	84.4	83.9	sgr2-C1R2
		***	99.1	84.8	84.4	sgr2-C6R1
			***	83.9	83.5	sgr2-C6R3
				***	97.8	sgr2-C6R2
					***	sgr2-C1R3

Similarity: 83.5-99.6

S. sparsipilum-1, spl1

DIRECT SEQUENCING - 216 bp

S. sparsipilum-2, spl2

Majority CCTTTTTGTCGAAATTTGGXCGTGTAATTGAAAAAATATTATTATTTATTTTTGCAGGAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
spl2-C1R1A..T...T-----..-----..G.....
spl2-C1R3 .G.....T...T-----..-----.....
spl2-C1R2C.....G.....
spl2-C1R4T.....G...
spl2-C1R5T.....

Majority GATGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCAAGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
spl2-C1R1A.....T.....
spl2-C1R3
spl2-C1R2G..T.....
spl2-C1R4G.....G.....
spl2-C1R5T.....

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
spl2-C1R1C..... 196 bp
spl2-C1R3G..... 197 bp
spl2-C1R2 213 bp
spl2-C1R4 213 bp
spl2-C1R5 213 bp

spl2-C1R1	spl2-C1R3	spl2-C1R2	spl2-C1R4	spl2-C1R5	
***	96.2	87.3	87.3	88.3	spl2-C1R1
	***	89.2	89.2	90.1	spl2-C1R3
		***	96.7	98.6	spl2-C1R2
			***	98.1	spl2-C1R4
				***	spl2-C1R5

Similarity: 87.3-98.6

S. spegazzinii-1, spg1

DIRECT SEQUENCING - 205 bp

S. spegazzinii-2, spg2

Majority	CCTTTTGTGCGAAATTCGGTCGTGTAATTGAAGAAATATATTTATTTATTTTTGAAGAAAAGGCGACGTTAGGACAGGT
	10 20 30 40 50 60 70 80
	-----+-----+-----+-----+-----+-----+-----+-----+
spg2-C1R1	A.....G...
spg2-C1R2	.....
spg2-C1R3	.....
spg2-C1R4	C.....C.....
spg2-C1R5	.....
spg2-C1R6	T.....
Majority	GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGAGGCTAGGTCGGTGGGGGAGGGGG
	90 100 110 120 130 140 150 160
	-----+-----+-----+-----+-----+-----+-----+-----+
spg2-C1R1	.....
spg2-C1R2	.....
spg2-C1R3	G.....AA.....
spg2-C1R4	G..G.....
spg2-C1R5	A.....G.....
spg2-C1R6	A.....
Majority	CAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
	170 180 190 200 210
	-----+-----+-----+-----+-----
spg2-C1R1	 219 bp
spg2-C1R2	 219 bp
spg2-C1R3	C..... 219 bp
spg2-C1R4	C.....C..... 219 bp
spg2-C1R5	 219 bp
spg2-C1R6	CC..... 219 bp

spg2-C1R1	spg2-C1R2	spg2-C1R3	spg2-C1R4	spg2-C1R5	spg2-C1R6	
***	99.1	97.3	96.3	98.2	97.3	spg2-C1R1
	***	98.2	97.3	99.1	98.2	spg2-C1R2
		***	95.4	97.3	96.3	spg2-C1R3
			***	96.3	95.4	spg2-C1R4
				***	98.2	spg2-C1R5
					***	spg2-C1R6

Similarity: 95.4-99.1

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S. spirale, spi

Majority

CTTTTTTCGTCG-----TCTATTCGGCGAATGATTTTTTTTTTTT---GCGGTTGGGTCGTTTGCTTGGGGAGA

1020304050607080

-----+-----+-----+-----+-----+-----+-----+-----+

spi-C1R1.....G.....

spi-C1R2.....

spi-C5R1.....TTT.....T.....

spi-C5R2.....

spi-C15R1.....T--.....

spi-C20R1.....C..AAATTTGTCA.....C.....

Majority

GACGTCGTTAGGACGGTTGGGGAAGGGCGTCGCGATAGCAAAAAGGGCTATGGCGGTGGTGTGCATGGCTAGGGCGTGGG

90100110120130140150160

-----+-----+-----+-----+-----+-----+-----+-----+

spi-C1R1.....

spi-C1R2.....C.....

spi-C5R1.....A.....G.....

spi-C5R2.....

spi-C15R1.....

spi-C20R1A.....A..G.....

Majority

GGXAGGAATGAGGTTTAATAGAATTAAGAGTGCTAGGAATGAT

170180190200

-----+-----+-----+-----+---

spi-C1R1..-.....T.....188 bp

spi-C1R2..G.....G.....188 bp

spi-C5R1..-.....T...T.....191 bp

spi-C5R2..G.....G.....189 bp

spi-C15R1..G.....A.....190 bp

spi-C20R1..-.....198 bp

spi-C1R1	spi-C1R2	spi-C5R1	spi-C5R2	spi-C15R1	spi-C20R1	
***	97.0	96.1	98.0	97.5	89.7	spi-C1R1
	***	94.1	99.0	98.0	89.7	spi-C1R2
		***	95.1	95.6	88.7	spi-C5R1
			***	99.0	89.7	spi-C5R2
				***	89.2	spi-C15R1
					***	spi-C20R1

Similarity: 88.7-99.0

S. stenophyllidium, ste

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATTGAAAAAGTATATTATTATTTATTTGCAGAAACGACATTGGGATTGAGACGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
ste-C1R1
ste-C1R2
ste-C2R1

Majority CGTTAGGACAGGTGATGGGGGGCGTTGAGGAGGGGCGTGACGGGCGGCGTCGTGCGTGAGAGGCTAGGTCGGTGGGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
ste-C1R1
ste-C1R2
ste-C2R1

Majority --AGGCTAGGGCGTTGGGAGGAAGGTGGTGTTTAATAGAATTTAGAGTGCTATGAATGAC
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
ste-C1R1 --..... 218 bp
ste-C1R2 GG..... 220 bp
ste-C2R1 --.....A..... 218 bp

ste-C1R1	ste-C1R2	ste-C2R1	
***	99.1	99.5	ste-C1R1
	***	98.6	ste-C1R2
		***	ste-C2R1

Similarity: 98.6-99.5

S. stenotomum subsp. goniocalyx, gon

Majority CCTTTTTGTCGAAATTCGGTCGTGTAATAGAAAAAATATTATTATTTATTTTGTAGAAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
gon-C1R1C.G.....
gon-C1R2G.....A.....
gon-C4R1
gon-C4R2A.....

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
gon-C1R1
gon-C1R2T.....
gon-C4R1A.....
gon-C4R2C.....C.....

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
gon-C1R1 213 bp
gon-C1R2C..... 213 bp
gon-C4R1 213 bp
gon-C4R2 213 bp

gon-C1R1	gon-C1R2	gon-C4R1	gon-C4R2	
***	97.2	98.6	97.7	gon-C1R1
	***	97.7	96.7	gon-C1R2
		***	98.1	gon-C4R1
			***	gon-C4R2

Similarity: 96.7– 98.6

S. stenotomum-1, stn1

DIRECT SEQUENCING - 200 bp

S. stenotomum-2, stn2

Majority CCTTTTTGTCGAAATTCGGTCGTGTAATAGAAAAAAATTATTATTTATTTTTGTAGAAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
stn2-C1R1A.....
stn2-C1R2T.....
stn2-C1R3A.....
stn2-C2R1 .T.....
stn2-C2R2
stn2-C2R3
stn2-C2R4T.....C.C.....
stn2-C2R5G.....

Majority GATGGGGCGTGCGGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGAGGCTAGGTCGGTGGGGGGCAGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
stn2-C1R1
stn2-C1R2
stn2-C1R3G.....
stn2-C2R1
stn2-C2R2
stn2-C2R3
stn2-C2R4T.--.....A.....
stn2-C2R5G.....

Majority CTAGGGCGTGCGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
stn2-C1R1A..... 215 bp
stn2-C1R2A..... 215 bp
stn2-C1R3A..... 215 bp
stn2-C2R1 ...A.....C.....G..... 215 bp
stn2-C2R2T..... 215 bp
stn2-C2R3 215 bp
stn2-C2R4T.....G..... 213 bp
stn2-C2R5A..... 215 bp

stn2-C1R1	stn2-C1R2	stn2-C1R3	stn2-C2R1	stn2-C2R2	stn2-C2R3	stn2-C2R4	stn2-C2R5	
***	99.1	98.6	97.2	98.6	99.1	94.9	98.6	stn2-C1R1
	***	97.7	97.2	98.6	99.1	95.8	98.6	stn2-C1R2
		***	96.7	98.1	98.6	94.4	97.2	stn2-C1R3
			***	97.7	98.1	94.0	96.7	stn2-C2R1
				***	99.5	96.3	98.1	stn2-C2R2
					***	95.8	98.6	stn2-C2R3
						***	94.4	stn2-C2R4
							***	stn2-C2R5

Similarity: 94.0-99.5

S. stoloniferum, sto

Majority CCTTTTT-GTCGAAATTCGGTTCGTGTAATAGAAAAAATATGATTATTTATTTTTGTAGAAACGXCGTCGTTAGGACAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
sto-C2R1-.....T...G..G...--.....C.....G...T.....G...
sto-C7R1T.....T...G..G...--.....C.....G...T.....G...
sto-C9R1-.....G.....
sto-C14R1-.....A.....
sto-C18R1-.....A.....
sto-C23R1-.....A.....

Majority TGATGGGGGCGT-----GACGGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGC
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
sto-C2R1 C.....TGAGGATGGGCGT.....
sto-C7R1 C.....TGAGGATGGGCGT.....
sto-C9R1 .A.....
sto-C14R1A.....A.....
sto-C18R1
sto-C23R1A.....

Majority TAGGGCGTTGGGAGGAAGGAGGTGTTTAAATAGAAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
sto-C2R1G.....G..... 208 bp
sto-C7R1 209 bp
sto-C9R1 200 bp
sto-C14R1 200 bp
sto-C18R1C..... 200 bp
sto-C23R1 200 bp

sto-C2R1	sto-C7R1	sto-C9R1	sto-C14R1	sto-C18R1	sto-C23R1	
***	98.6	86.9	86.0	86.4	86.4	sto-C2R1
	***	87.4	86.4	86.9	86.9	sto-C7R1
		***	98.1	98.6	98.6	sto-C9R1
			***	98.6	99.5	sto-C14R1
				***	99.1	sto-C18R1
					***	sto-C23R1

Similarity: 86.0-99.5

S. tarijense, trj

Majority CTTTTTGTGCGAAATTCGGTCGTGTAATTGAAAGAATATATTCATTTATTTTTGCAGGAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
trj-C1R1G.....
trj-C1R2
trj-C1R3T.....
trj-C4R1 T.....
trj-C7R1
trj-C7R2
trj-C8R1A.....

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGCGGGGGGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
trj-C1R1G.....T.....
trj-C1R2
trj-C1R3
trj-C4R1C.....
trj-C7R1A.....T.....
trj-C7R2-----
trj-C8R1

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
trj-C1R1C..... 213 bp
trj-C1R2 213 bp
trj-C1R3C..... 213 bp
trj-C4R1 213 bp
trj-C7R1 213 bp
trj-C7R2 200 bp
trj-C8R1G..... 213 bp

trj-C1R1	trj-C1R2	trj-C1R3	trj-C4R1	trj-C7R1	trj-C7R2	trj-C8R1	
***	98.1	97.2	97.2	97.2	92.5	97.2	trj-C1R1
	***	99.1	99.1	99.1	93.9	99.1	trj-C1R2
		***	98.1	98.1	93.0	98.1	trj-C1R3
			***	98.1	93.0	98.1	trj-C4R1
				***	93.0	98.1	trj-C7R1
					***	93.0	trj-C7R2
						***	trj-C8R1

Similarity: 92.5-99.1

S. torvum, trv

Majority CCTTTTTTGCGGAAATCCGTCGTCTATTCTATTTCGGCGAATCATAATTTTTTTGGCGGAAACGACGTTTGCTTGGGAC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
trv-C2R1C.....
trv-C9R1
trv-C23R1T.....
trv-C40R1C.....T.....
trv-C4R1G.....

Majority AGTTGAGGAAGGGCCAGGAACGCGCGCCGTCGCATATGGAGGCTAGGGGCGGTGGTGTGGAGGCTAGGAATGAGGCTTAA
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
trv-C2R1
trv-C9R1T.....G..A.....A.....
trv-C23R1A.....
trv-C40R1
trv-C4R1A.....T.....G..A.....A.....

Majority TAGAATTAAGAGTGCTAGGGATGAT
170 180
-----+-----+-----
trv-C2R1 185 bp
trv-C9R1 185 bp
trv-C23R1T..... 185 bp
trv-C40R1 185 bp
trv-C4R1 185 bp

trv-C2R1	trv-C9R1	trv-C23R1	trv-C40R1	trv-C4R1	
***	97.3	97.8	99.5	96.2	trv-C2R1
	***	96.2	96.8	98.9	trv-C9R1
		***	98.4	95.1	trv-C23R1
			***	95.7	trv-C40R1
				***	trv-C4R1

Similarity: 95.1-99.5

S. tuberosum ssp. andigena, tbrA1

Majority	CCTTTTGTGCGAAATTCGGTTCGTGTAATAGAAAAAXATTATTATTTATTTTTGTAGAAACGACGTCGTTAGGACAGGT
	10 20 30 40 50 60 70 80
	-----+-----+-----+-----+-----+-----+-----+-----+-----+
tbrA-C1R1	A.....
tbrA-C2R1	T.....
tbrA-C4R1	A.....A.....
tbrA-C8R1	C.G.....
tbrA-C10R1	T.....T.....T.....C..G.....
Majority	GATGGGGGCGTGGGGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGG
	90 100 110 120 130 140 150 160
	-----+-----+-----+-----+-----+-----+-----+-----+
tbrA-C1R1	.....
tbrA-C2R1	.....
tbrA-C4R1	T.....
tbrA-C8R1	T.--.....
tbrA-C10R1	T.--.....A.....
Majority	CTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTAGAGTGCTATGAATGAT
	170 180 190 200 210
	-----+-----+-----+-----+-----+
tbrA-C1R1	G..... 215 bp
tbrA-C2R1	G.....A..... 215 bp
tbrA-C4R1	G..... 215 bp
tbrA-C8R1	A.....G..... 213 bp
tbrA-C10R1	A.....T..... 213 bp

tbrA-C1R1	tbrA-C2R1	tbrA-C4R1	tbrA-C8R1	tbrA-C10R1	
***	99.1	98.1	96.3	94.4	tbrA-C1R1
	***	97.2	95.8	94.4	tbrA-C2R1
		***	96.3	93.5	tbrA-C4R1
			***	95.8	tbrA-C8R1
				***	tbrA-C10R1

Similarity: 93.5-99.1

S. tuberosum ssp. andigena, tbrA2

Majority CCTTTTGTGCGAAATTCGGTCGTGTAAXXXXXXXXXATATAXTTATTTATTTTGTGXAGAAACGXCGTCGTTAGGACXXXX
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
tbrT-C1R1TAGAAAAA....TA.....T.....A.....TAAC
tbrT-C7R1TAGAAAAA....CA.....T.....A.....TAAC
tbrT-C2R1-----.....T.....C.....G.....----
tbrT-C5R1-----.....T.....C.....G.....----

Majority AGGXGATGGGGGCGTTGXAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
tbrT-C1R1 ...T.....GG.....
tbrT-C7R1 ...T.....GG.....
tbrT-C2R1 ...C.....--.....G.....
tbrT-C5R1 ...C.....--.....

Majority CAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----
tbrT-C1R1 219 bp
tbrT-C7R1G..... 219 bp
tbrT-C2R1 205 bp
tbrT-C5R1 205 bp

tbrT-C1R1	tbrT-C7R1	tbrT-C2R1	tbrT-C5R1	
***	99.1	90.9	91.3	tbrT-C1R1
	***	90.4	90.9	tbrT-C7R1
		***	99.5	tbrT-C2R1
			***	tbrT-C5R1

Similarity: 90.4-99.5

S. tuberosum-1, tbr1

Majority CCTTTTGTGCGAAATTCGGTCGTGTAAATATATTTATTTATTTTTCAGAAAACGGCGTCGTTAGGACAGGCGATGGGGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pStB15.1
pStB15.2G.....
pStB15.3

Majority CGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGCTAGGGCGTT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pStB15.1
pStB15.2
pStB15.3

Majority GGGAGGAAGGAGGTGTTTAATAGAAATTTAGAGTGCTATGAATGAT
170 180 190 200
-----+-----+-----+-----+-----
pStB15.1 205 bp
pStB15.2 205 bp
pStB15.3 205 bp

pStB15.1	pStB15.2	pStB15.3	
***	99.5	100.0	pStB15.1
	***	99.5	pStB15.2
		***	pStB15.3

Similarity: 99.5-100.0

S. tuberosum-2, tbr2

ONE CLONE - 216 bp

S. tuberosum-3, tbr3

Majority CCTTTTGTGCGAAATTCGGTCGTGTAAATATATTTATTTATTTTTCAGAAACGGCGTCGTTAGGACAGGCGATGGGGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
pStbr3-B1076_5
pStbr3-B1076_2
pStbr3-B1076_1
pStbr3-B1076_3

Majority CGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGCTAGGGCGTT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
pStbr3-B1076_5
pStbr3-B1076_2
pStbr3-B1076_1
pStbr3-B1076_3C.....

Majority GGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200
-----+-----+-----+-----+-----+-----+-----+-----+
pStbr3-B1076_5 205 bp
pStbr3-B1076_2 205 bp
pStbr3-B1076_1 205 bp
pStbr3-B1076_3 205 bp

tbr3-B1076_5	tbr3-B1076_2	tbr3-B1076_1	tbr3-B1076_3	
***	100.0	100.0	99.5	tbr3-B1076_5
	***	100.0	99.5	tbr3-B1076_2
		***	99.5	tbr3-B1076_1
			***	tbr3-B1076_3

Similarity: 99.5-100

S. tuberosum-4, tbr4

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATAGAAAAAATATTATTATTTATTTTGCAGAAACGACGTCGTTAGGACAGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
pStbr4-B1.1 .T.....T.....C.T...C.A.....
pStbr4-B1.2T.....
pStbr4-B1.4C.....-.....C.....
pStbr4-B1.5G.....

Majority GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pStbr4-B1.1A.....T...A.....
pStbr4-B1.2T.....A.....
pStbr4-B1.4G.....
pStbr4-B1.5

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+
pStbr4-B1.1G.....G..... 213 bp
pStbr4-B1.2 213 bp
pStbr4-B1.4C..C..... 212 bp
pStbr4-B1.5 213 bp

tbr4-B1.1	tbr4-B1.2	tbr4-B1.4	tbr4-B1.5	
***	93.4	92.0	94.4	tbr4-B1.1
	***	95.8	98.1	tbr4-B1.2
		***	96.7	tbr4-B1.4
			***	tbr4-B1.5

Similarity: 92.0-98.1

S. valdiviense, val

Majority CCTTTTTGTCGAAATTCGGCGTAACTTTGATAATATATATATATATATTTTTGCAGAAAGGACATTCGGGCCGAGACGTCGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
val-C2R1
val-C7R1 T.....
val-C11R1

Majority TAGGACAGGTGATGGAGGCGCTTAGGTTGGGCGTGACAGGCGGCGGTGCGTGGAGGCTAGCGCGGCGGGGGACAGGCTAG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
val-C2R1
val-C7R1
val-C11R1G.....

Majority GGC GTTGGGGGGAAGGAGTCGTTTAATAGAATTTAGAGTGGTAGGAATGAC
170 180 190 200 210
-----+-----+-----+-----+-----+
val-C2R1 211 bp
val-C7R1T..... 211 bp
val-C11R1 211 bp

val-C2R1	val-C7R1	val-C11R1	
***	99.1	99.5	val-C2R1
	***	98.6	val-C7R1
		***	val-C11R1

Similarity: 98.6-99.5

S. venturii, vnt

Majority CCTTTTGTGCGAAATTCGGTTCGTGTAATTGAAGAAATAAAATATATTAATATTTATTTTTTGCAGAAAGGGCGTCGTTAG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
vnt-C1R1
vnt-C1R2G.....
vnt-C2R1
vnt-C2R2G.....
vnt-C5R1G.....
vnt-C5R3
vnt-C2R3
vnt-C5R2G.....

Majority GACAGGCGATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGATAGGTTCGGTGGGGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
vnt-C1R1T.....C.....
vnt-C1R2
vnt-C2R1
vnt-C2R2C.....T...
vnt-C5R1
vnt-C5R3
vnt-C2R3T.....T.....
vnt-C5R2C.....

Majority GCAGGCTAGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
170 180 190 200 210 220
-----+-----+-----+-----+-----+
vnt-C1R1 ..G.....G..... 220 bp
vnt-C1R2 220 bp
vnt-C2R1 220 bp
vnt-C2R2 220 bp
vnt-C5R1TC.....A..... 220 bp
vnt-C5R3C..... 220 bp
vnt-C2R3 212 bp
vnt-C5R2 212 bp

vnt-C1R1	vnt-C1R2	vnt-C2R1	vnt-C2R2	vnt-C5R1	vnt-C5R3	vnt-C2R3	vnt-C5R2	
***	97.7	98.2	97.7	96.4	97.7	93.6	94.5	vnt-C1R1
	***	99.5	98.2	97.7	99.1	95.0	95.9	vnt-C1R2
		***	98.6	98.2	99.5	95.5	95.5	vnt-C2R1
			***	96.8	98.2	94.1	95.0	vnt-C2R2
				***	98.6	93.6	93.6	vnt-C5R1
					***	95.0	95.0	vnt-C5R3
						***	98.2	vnt-C2R3
							***	vnt-C5R2

Similarity: 93.6-99.5

S. vernei-1, vrn1

DIRECT SEQUENCING - 202 bp

S. vernei-2, vrn2

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATTGAAAAAATATATTTATTTATTTACTGCXXXXXXXXXXXXXXXXXGGACXGGT
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
vrn2-C1R2G.....C.....AGAAATTCGGTCGTTA...A...
vrn2-C1R3AGAAATTCGGTCGTTA...A...
vrn2-C1R4G...
vrn2-C1R1C.....G...

Majority GATGGGGGCGTTGGTGATGGGCGTGACGGGCGGCGTCATGXGTCGGTGCGCGCGGAGGCTAGGACGGTGGGGGGCAGGCT
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
vrn2-C1R2C.....T....A.....A.....
vrn2-C1R3C.....
vrn2-C1R4G.....
vrn2-C1R1G.....G.....

Majority AGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGCGCAATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+
vrn2-C1R2G..... 213 bp
vrn2-C1R3 198 bp
vrn2-C1R4 197 bp
vrn2-C1R1C 197 bp

vrn2-C1R2	vrn2-C1R3	vrn2-C1R4	vrn2-C1R1	
***	90.1	88.7	87.3	vrn2-C1R2
	***	84.5	83.1	vrn2-C1R3
		***	98.6	vrn2-C1R4
			***	vrn2-C1R1

Similarity: 83.1-98.6

S. vernei-3, vrn3

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATTGATTTTAAATATATTTATTTATTACTGCA----TT--ATCAT-AGGACAGG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+-----+
vrn3-C1R5 .T.....GAAA..CGG..G.T.....
vrn3-C1R1G.....AAA-G.....GAAA..CGG..G.T.....
vrn3-C1R2AAA-G.....G.....GAAA..CGG..G.T.....
vrn3-C1R3G.....G.....G..G..CG.....----..--.....-.....
vrn3-C1R4G.....G.....G.....G.....----..--.....-..G.....
vrn3-C1R6G.....G.....G.....G.....----..--.....-.....
vrn3-C1R7G.....G.....G.....G.....----..--.....-.....
vrn3-C1R8G.....G.....G.....G.....----..--.....-.....
vrn3-C1R9C.....G.....G.....G.....----..--.....-.....

Majority TGATGGGGGCGTTGGTGATGGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGCGGAGGCTAGGACGGTGGGGGGCAGGC
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+-----+
vrn3-C1R5
vrn3-C1R1-T.....
vrn3-C1R2T.....
vrn3-C1R3G.TCG.....G.C..G..G.....G.....
vrn3-C1R4T...A.G...C..C...
vrn3-C1R6G.....G.....A.....
vrn3-C1R7A.....
vrn3-C1R8
vrn3-C1R9

Majority TAGGGCGTTGGGAGGAAGGAGGTGTTTGATAGAATTTAGAGCGCAATGAATGAT
170 180 190 200 210
-----+-----+-----+-----+-----+-----+-----+-----+
vrn3-C1R5G..... 214 bp
vrn3-C1R1A..... 189 bp
vrn3-C1R2C..... 189 bp
vrn3-C1R3 G..C...G...C..CG..G...A.....G... 207 bp
vrn3-C1R4 G.T.T....C...C..C..G..G..C..C...C.....G..... 207 bp
vrn3-C1R6C..... 207 bp
vrn3-C1R7 207 bp
vrn3-C1R8 207 bp
vrn3-C1R9C..... 207 bp

vrn3-C1R5	vrn3-C1R1	vrn3-C1R2	vrn3-C1R3	vrn3-C1R4	vrn3-C1R6	vrn3-C1R7	vrn3-C1R8	vrn3-C1R9	
***	84.1	84.1	83.2	86.0	92.5	93.5	94.4	93.5	vrn3-C1R5
	***	97.2	70.1	72.0	79.0	79.4	80.4	79.9	vrn3-C1R1
		***	70.1	72.4	79.0	79.4	80.4	79.4	vrn3-C1R2
			***	83.6	87.9	88.3	88.8	87.9	vrn3-C1R3
				***	89.7	90.7	91.6	90.7	vrn3-C1R4
					***	97.2	98.1	97.2	vrn3-C1R6
						***	99.1	98.1	vrn3-C1R7
							***	99.1	vrn3-C1R8
								***	vrn3-C1R9

Similarity: 70.1-99.1

S. verrucosum, ver

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Majority      CCTTTTGTGCGAAATTGGTCGTGTAATTGAAAAAATATTATTATTTGTTTTTGCATGAACGACGTCGTTAGGACAGGT
                10      20      30      40      50      60      70      80
-----+-----+-----+-----+-----+-----+-----+
ver-C2R1      .....T.....G.....
ver-C2R2      .-.....A.....G.....
ver-C6R1      .....C.....
ver-C6R2      .....C.....
ver-C13R1     .....-.....A.....
ver-C13R2     .....G.....
ver-C13R3     .....T.....G.A.....G.....

Majority      GATGGGGGCGTTGAGGATGGGCGTGACGGGCGGCGTCATGCGTCGGTGCGCGTGGAGGCTAGGTCGGTGGGGGGCAGGCT
                90      100     110     120     130     140     150     160
-----+-----+-----+-----+-----+-----+-----+
ver-C2R1      .....C.....
ver-C2R2      .....T.....A.....
ver-C6R1      .....
ver-C6R2      .....G.....
ver-C13R1     .....C.....
ver-C13R2     .....
ver-C13R3     .....C.....A.....

Majority      AGGGCGTTGGGAGGAAGGAGGTGTTTAATAGAATTTAGAGTGCTATGAATGAT
                170     180     190     200     210
-----+-----+-----+-----+-----+
ver-C2R1      .....T.....G..... 213 bp
ver-C2R2      .....C..... 213 bp
ver-C6R1      .....A..... 213 bp
ver-C6R2      ..... 213 bp
ver-C13R1     .....T..... 212 bp
ver-C13R2     .....G.....TT..... 213 bp
ver-C13R3     .....G.....TT..... 213 bp

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ver-C2R1	ver-C2R2	ver-C6R1	ver-C6R2	ver-C13R1	ver-C13R2	ver-C13R3	
***	94.8	96.7	96.7	96.7	96.7	96.2	ver-C2R1
	***	96.2	96.2	95.3	95.3	93.9	ver-C2R2
		***	99.1	97.2	97.2	94.8	ver-C6R1
			***	97.2	97.2	94.8	ver-C6R2
				***	96.2	93.9	ver-C13R1
					***	97.7	ver-C13R2
						***	ver-C13R3

Similarity: 93.9-99.1

S. vespertilio, ves

Majority TTTT TTTT -GCC AAAATTT CGTCGTC TATT CGGCGAATGATTATTTT TTTXGCGGTTGGGTCGTTTGCTTGGGGGGAGA
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
pSves-8 (1)G...-.....G.....A.....A.....T.....
pSves-8 (2)-.....C.....G.....T.....
pSves-10T.A.G.....-.....A.....

Majority CGTCGTTAGGACGGTTGAAGAAGGGCGTCGCGGTAGCAAAAAGGCCTATGGCGGGCGGTGGTGTGCATGGCTAGGGCGAG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pSves-8 (1)T.....T...
pSves-8 (2)A.....
pSves-10

Majority GGGGGAGGAATGAGGTCTAATAGAAATTAAGAGTGCTAGGAATGAT
170 180 190 200
-----+-----+-----+-----+-----
pSves-8 (1) ..C..... 204 bp
pSves-8 (2)T....C... 204 bp
pSves-10A.....G.....A.....A 204 bp

pSves-8 (1)	pSves-8 (2)	pSves-10	
***	93.7	92.2	pSves-8 (1)
	***	93.2	pSves-8 (2)
		***	pSves-10

Similarity: 92.2-93.7

S. villosum, vil

Majority CCTTTTGTCTGAAGTTCGGCATXATTTTCGTCTATTTGATAATATATATTATTATTATTTTGTGXAGAAACGXCATTTCGTGC
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
pSvil-7A.....T.....A.....
pSvil-8G.....C.....G.....
Majority CTAGACGTCGCTAGGACGGGTGACGGAGCGCTGAGGACGGGCGTGACAGGCATGCCGTCGGTTCGGTGGAGGCTAGGGCGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
pSvil-7
pSvil-8
Majority CGTGGXACATGCTATGGCGTTGGGAGGAAGGAXGTGTTTAATAAXAATTTAGAGCGCAATGAATGAX
170 180 190 200 210 220
-----+-----+-----+-----+-----+-----+
pSvil-7A.....G.....G.....C 226 bp
pSvil-8G.....C.....T.....T 226 bp

pSvil-7	pSvil-8	
***	96.9	pSvil-7
	***	pSvil-8

Similarity: 96.9

S. violaceimarmoratum, vio

Majority CCTTTTGTGCGAAATTCGGTCGTGTAATTGAAAAAAAAATATATXTATTTATTTTGCAGAAACGACGTCGTTAGGACAG
10 20 30 40 50 60 70 80
-----+-----+-----+-----+-----+-----+-----+
vio-C1R1C.....C.....C...C.....A.....T..G.....
vio-C1R2A.....
vio-C1R3C.T.....T....G.....
vio-C3R1T.....A.....

Majority GCGATGGGGGCGTTGAGGAAGGGCGTGACGGGCGTCGGTGCGTGAGGCTAGGTCGGTGGGGGCGAGGCTAGGGCGTTGG
90 100 110 120 130 140 150 160
-----+-----+-----+-----+-----+-----+-----+
vio-C1R1 .T.....T.....AA.....A.....
vio-C1R2
vio-C1R3G.T..GG.....
vio-C3R1

Majority GATGAAGGAGGTGTTTAATAGAAATTTAGAGTGGTATGAATGAT
170 180 190 200
-----+-----+-----+-----+
vio-C1R1C..... 203 bp
vio-C1R2C..... 203 bp
vio-C1R3 203 bp
vio-C3R1 203 bp

vio-C1R1	vio-C1R2	vio-C1R3	vio-C3R1	
***	93.6	91.1	93.1	vio-C1R1
	***	95.6	98.5	vio-C1R2
		***	96.1	vio-C1R3
			***	vio-C3R1

Similarity: 91.1-98.5

S. wendlandii, wen

Majority CCTTTTGTGCGAAATTCGGAATAATTTGT-CTATTCGATGGTA-TTTTTTGGCAGAAATGACATTTGGGCGGAGACGTC
 10 20 30 40 50 60 70 80
 -----+-----+-----+-----+-----+-----+-----+-----+
 pSowen-3.1C.....-.....-.....
 pSowen-3.2C.....C.-.....A.A.G.....C.....
 pSowen-13.1T.T.....-.....A.....T
 pSowen-13.2A.....-.....-.....T.....
 pSowen-13.3G...A.....-.....T.....A.....
 pSowen-14 .T.....C.....-.....-.....A..
 pSowen-18.1 .T.....A.....-.....-.....
 pSowen-18.2A.C.....CA.-T.....G.A.A.G.....T.....CT.....A.....

Majority GTTAGGACAGGCGCTGAGGATGGGCGTGTCTGGGCGTCACCACGTGCCGGTGCX-----
 90 100 110 120 130 140 150 160
 -----+-----+-----+-----+-----+-----+-----+
 pSowen-3.1 A.....A-----
 pSowen-3.2T.A.....C.....A.A...A...C...A...GTGTCTGGGCGTCACCACACTCCGGTGC
 pSowen-13.1T.....A.T-----
 pSowen-13.2T.....AC...A...G-----
 pSowen-13.3TA.....A-----
 pSowen-14T.....T.A...A.G-----
 pSowen-18.1T.....A-----
 pSowen-18.2 A.....A..T.TT.A.....A.....CA.T..-----

Majority -----TGGGGC-TAGGXTGGTGGGGTGCAGG
 170 180 190 200 210 220 230 240
 -----+-----+-----+-----+-----+-----+-----+
 pSowen-3.1 -----C...T.....
 pSowen-3.2 TGTCGGGCGTCACCACGCGCCGGTGCCTGTCGTGCGTCACCATGCGTCAGTGCG.....GA..T.GC.....T.
 pSowen-13.1 -----T.-...G.T.....
 pSowen-13.2 -----GA.T..GC.....T.T....
 pSowen-13.3 -----C...T.....
 pSowen-14 -----G.....
 pSowen-18.1 -----G...C...T.....A
 pSowen-18.2 -----GC--CGGAG-----GG-----GC..T.CC.....

Majority CTAGGGCATTGGGAGGAACGAGGTAAAGG-AATTTAGAGTGATAGGAATGAT
 250 260 270 280 290
 -----+-----+-----+-----+-----+-----+
 pSowen-3.1A...T.. 208bp
 pSowen-3.2C...A..T.....TG.TAG.....T...C...A..... 292bp
 pSowen-13.1 T.....-.....T... 209bp
 pSowen-13.2G.....T.C...T..TAC.....C..... 210bp
 pSowen-13.3-.....AT..... 208bp
 pSowen-14 T.....-..... 208bp
 pSowen-18.1-..... 208bp
 pSowen-18.2 ..T..T.G..CA.....T.....T..TAG....G.....C.C.A.....A 215bp

pSwen-3.1	pSwen-3.2	pSwen-13.1	pSwen-13.2	pSwen-13.3	pSwen-14	pSwen-18.1	pSwen-18.2	
***	59.7	94.2	90.8	96.9	94.9	96.9	79.9	pSwen-3.1
	***	58.4	61.8	59.4	59.4	59.4	61.4	pSwen-3.2
		***	89.4	92.8	95.6	93.9	77.8	pSwen-13.1
			***	89.8	90.4	91.1	81.2	pSwen-13.2
				***	93.5	95.6	78.5	pSwen-13.3
					***	95.2	78.8	pSwen-14
						***	79.5	pSwen-18.1
							***	pSwen-18.2

Similarity: 58.4-96.9

S. wrightii, wri

ONE RIBOTYPE -183 bp