TABLE S2. The primers to amplify 93 probes genes and the function of the translated proteins of genes

Serotype	Probe gene	Function of the translated proteins	Primer	Sequence
3	*cps*3E	polysaccharide biosynthesis	cps3E-1	CCTTTAGTTATCGTTTCAT
			cps3E-2	ATTCCTCGTAGAGTTTTTC
	*cps*3F	filamentation	cps3F-1	TTTCAACTCAAACCACAT
			cps3F-2	TCAATCCTAAAATACTCC
	*cps*3G	aminotransferas	cps3G-1	TACACCAAAAGTGAGCAA
			cps3G-2	CTAGGGAGACATAAGCCA
	*cps*3H	galactose phosphate transferase	cps3H-1	CGGTCATTATTCTGGTC
			cps3H-2	TGATATTCCGCTTCTCT
	*cps*3I	acetyltransferase	cps3I-1	ATTGCTGAAAAAAATGGC
			cps3I-2	GTAACAAGCGTGCTGGGT
	*cps*3J	glycosyl transferase	cps3J-1	ACTGTAATGGTCGTTGC
			cps3J-2	TACTTTCTGCCTTCTCC
	*cps*3K	flippase	cps3K-1	ATGGTTGACTGAAGGAAT
			cps3K-2	AACTAAAGCCCACTAATC
	*cps*3L	polysaccharide biosynthesis	cps3L-1	AATCTTTATAGTGCAGCA
			cps3L-2	TTGAAAATCTCGTTGTAG
	*cps*3M	nucleotidyltransferase	cps3M-1	CGTAGCATGTGATAGAAAA
			cps3M-2	TAAGTAGAAAGCAAGCCTG
	*cps*3N	UDP-glucose 6-dehydrogenase	cps3N-1	TGACAGGAATAAATAGGG
			cps3N-2	ACATCATCCAAGACAGAG
4	*cps*4E	mannosyl-transferase	cps4E-1	ATTTAGAAACTGTTACCG
			cps4E-2	AATTGACAATGTCCGACT
	*cps*4F	sugar transferases	cps4F-1	AGATAGAATCAAGAAGAGGT
			cps4F-2	TCATTACTTTAAAATCAGAA
	*cps*4G	aminotransferase	cps4G-1	ATATTCCATTTTCACCACCA
			cps4G-2	ACTCCACCTCTTCATCACTC
	*cps*4H	glycosyl transferases	cps4H-1	TAAGTGTTTTAATGTCGGTA
			cps4H-2	TTTTCTTGCAGCTTTGTAG
	*cps*4I	glycosyltransferase	cps4I-1	CGAGTTTTCTTCGTTTC
			cps4I-2	TTCCTCATAGTCAGCAATA
	*cps*4J	N-acetyltransferase	cps4J-1	TCTGATTATTATTTAACTCAAC
			cps4J-2	GTCTACTATCACTATTCATTTT
	*cps*4K	polysaccharide polymerase	cps4K-1	GACTATCTGTATACCCAAAC
			cps4K-2	CTCCTTCCAAGTATTCTCTA
	*cps*4L	glycosyl transferases	cps4L-1	TTGTAGTTGTTGATGGAAAAAGT
			cps4L-2	GCCTCATCTCCTTAAAATAAGTG
	*cps*4M	flippase	cps4M-1	CAATAGTGAAGTCTGATAACGA
			cps4M-2	ATATAGAAGCTCCTACAAAAGT
	*cps*4N	UDP-glucose/GDP-ma	cps4N-1	ATATGAAAAGTTGAAAAGCGTC

		nnose dehydrogenases	cps4N-2	AAGGTGGAACCATTCTCTAAAG
5	*cps*5E	pseudogene	cps5E-1	AGAACGCAACAGTAAACGAT
			cps5E-2	TCTGATACCCTGTGTAACGC
	*cps*5F	polysaccharide	cps5F-1	AATCTTAGTAGTAGGTGCTGG
		biosynthesis protein	cps5F-2	TAAATGAATTGACAATGTCCG
	*cps*5G	UDP-glucose lipid	cps5G-1	GACCAAAGACAAAAGAGC
		carrier transferase	cps5G-2	TCAGATTAGTATGAAGCG
	*cps*5H	aminotransferase	cps5H-1	ACAAACAATAAAACCTGATGAA
			cps5H-2	GAGGCAAGATGTAGACAGCAAT
	*cps*5I	glycosyl transferase	cps5I-1	TTTTCGTTGTATTTTCCAAA
			cps5I-2	TCCAAACATTATCCCCTATT
	*cps*5J	acetyltransferase	cps5J-1	TTTTAAGTGAGTTGGTTTC
			cps5J-2	CATCAAGTACATTTGTTTC
	*cps*5K	glycosyl transferase	cps5K-1	ATTTGTCTGTGCTCTGTTGAAG
			cps5K-2	CCATTGATCTGTTATCTCCTCT
	*cps*5L	glycosyl transferase	cps5L-1	GTGGGAGCATTCTTTAT
			cps5L-2	CCTTTTCCTCACATTTG
	*cps*5M	oligosaccharide repeat	cps5M-1	ATTTGGTGACTATTGGTG
		unit polymerase	cps5M-2	TCATTTTTTCATTGGGGG
	*cps*5N	acetyltransferase	cps5N-1	ATGACTAATAATAAGCAACT
			cps5N-2	AAAAGAGATAGAACAGATAA
	*cps*5O	flippase	cps5O-1	GCTATCTGTTATGTGACTGTAT
			cps5O-2	ATCTTCTTAATCTTGTCTTCTA
	*cps*5P	acetyltransferase	cps5P-1	AAGCATTATCGTCTTGAACA
			cps5P-2	CTGAAACCAAAATCTCTCTC
	*cps*5Q	epimerase	cps5Q-1	ATGAAAAAAATCGCCGTC
			cps5Q-2	GGAACCATTCTCTAAAGT
	*cps*5R	dehydrogenase	cps5R-1	ATGAAAAAAATCGCCGTC
			cps5R-2	GGAACCATTCTCTAAAGT
8	*cps*8E	galactosyl transferase	cps8E-1	GCCGTATTTTTTGCTGTATT
			cps8E-2	CCTTTTTTGACTCGGTGTAT
	*cps*8F	UDP-galactopyranose	cps8F-1	ATCTGTTCGGAGCGGTCT
		mutase	cps8F-2	GGCTTGTTCTTCCAAGTT
	*cps*8G	UDP-N-acetyl-D-man	cps8G-1	ATGATTGATGAGTTCTTT
		nosamine transferase	cps8G-2	CTTTTGTTGTTCTGCGAG
	*cps*8H	phosphotransferase	cps8H-1	GGTGCTTCAGTTGTTCTA
			cps8H-2	TTTCTTCTCTTTCTTTGC
	*cps*8I	rhamnosyl transferase	cps8I-1	AAACGCTGTTAGATGCTG
			cps8I-2	TGATGCGATTTTTTATTC
	*cps*8J	polysaccharide	cps8J-1	GCGAGCGGTAATAATGTTGG
		polymerase	cps8J-2	TACTCCGTTCTCTTGGAATG
	*cps*8K	UDP-N-acetylglucosa	cps8K-1	ATCTGTTGTAATGGTCGC
		mine 2-epimerase	cps8K-2	CTATTCCTCTTGGTGTGA
	*cps*8L	polysaccharide	cps8L-1	ATAAAGAAATGTGGCAAC

		biosynthesis protein	cps8L-2	CATCATCAGAAAGTAGGA
	*cps*8M	flippase	cps8M-1	TTCATTTTGGATGGTGTG
			cps8M-2	CGTTCTCAGAAGATTCTT
	*cps*8N	UDP-galactopyranose	cps8N-1	ACCGCTATACAAACACACC
		mutase	cps8N-2	ACTTCATTTCTCGCACACT
10	*cps*10E	polysaccharide	cps10E-1	GGCTGTTTTTGGATGTTAT
		biosynthesis	cps10E-2	TGTCCGACTGCTTATTTGT
	*cps*10F	glycosyl-1-phosphate-t	cps10F-1	TATGCCGACTCATCTTTT
		ransferase	cps10F-2	CCTTTTTTATGTTCCCTG
	*cps*10G	UDP-glucose	cps10G-1	AGTATTGATAACTGGTGCT
		4-epimerase	cps10G-2	TATATTCGCTGTTCTGAGG
	*cps*10H	glycosyltransferase	cps10H-1	ATTATTTTTCTCACCTGCT
			cps10H-2	TTTCAACGTCAAACCTATC
	*cps*10I	O-acetyl transferase	cps10I-1	CGTTTAAGATGTTTGGCAC
			cps10I-2	TCACTGAATAGTCGGGGTA
	*cps*10J	glycosyl transferase	cps10J-1	ACTAATCAATCAAGAAAATG
			cps10J-2	ATGAAAAAATAGAAGAAACC
	*cps*10K	glycosyl transferase	cps10K-1	ATGGATGGACAAATGAAGAA
			cps10K-2	CCAAACTAGCAAAAAGAGAA
	*cps*10L	glycosyl transferase	cps10L-1	ATCTTTATTTGCTGGTCA
			cps10L-2	CCGTATTTATTCTTTTCA
	*cps*10M	oligosaccharide repeat	cps10M-1	CAATACTATCACTACCACGG
		unit polymerase	cps10M-2	ATTCCAACACTAATCAAAAC
	*cps*10N	NAD-dependent	cps10N-1	CGAGGTTGTCAGGTTGTT
		epimerase/dehydratase	cps10N-2	TGAAAGGGATTCTGGTTG
	*cps*10O	acetyltransferase	cps10O-1	TATGGTTGTTTTACAGAAGG
			cps10O-2	TGAAGATAATTGATCAGGTT
	*cps*10P	flippase	cps10P-1	CGATTACTTAGTCCATACGA
			cps10P-2	AATAAAAACAAAACTGCTGC
	*cps*10Q	glycerophosphotransfe	cps10Q-1	CATCAAGAAAAACAAGAAT
		rase	cps10Q-2	CAATGAACGAACTACAATA
	*cps*10R	cytidylyltransferase	cps10R-1	ACTTTTGATTTACTCCACT
			cps10R-2	AATTACTTCTACACCTTCT
19	*cps*19E	polysaccharide	cps19E-1	GGCTGTTTTTGGATGTTAT
		biosynthesis	cps19E-2	GTAGAGTTTCTCGCCTGGT
	*cps*19F	filamentation	cps19F-1	TTTCAACTCAAACCACAT
			cps19F-2	TCAACCCTAAAATACTCC
	*cps*19G	sugar transferases	cps19G-1	GTCAAGAAAGAGTTACAAGA
			cps19G-2	AATCAGAAATAATTCCAAAG
	*cps*19H	aminotransferase	cps19H-1	CCAAGCTGAAATTGATGAA
			cps19H-2	TGTAGGCTGTGAGAAGAGG
	*cps*19I	acetyltransferase	cps19I-1	TTGGTTTTTTAGCGTATTCT
			cps19I-2	CATTCATTTTGCGACCTTCT
	*cps*19J	sugar transferases	cps19J-1	ATGAAATACATGGGGCGG

			cps19J-2	AACAAGCAAAGGAAGGGC
	*cps*19K	sugar transferases	cps19K-1	GACAAGAAATCAATCAAATG
			cps19K-2	CTGGTCTACAAACTACAGGC
	*cps*19L	polysaccharide	cps19L-1	TCGAAGCATGAAAAAAAA
		biosynthesis	cps19L-2	TCCATAACCAAACAAAGG
	*cps*19M	acetyltransferase	cps19M-1	GTGGTATTTTCTTGCGATT
			cps19M-2	ATGAGGTGGAACATTTTTA
	*cps*19N	flippase Wzx	cps19N-1	CACAAACAAGTAGGAAATGC
			cps19N-2	TAAAACCAAACCAAAGAATC
	*cps*19O	sugar transferases	cps19O-1	ATTAAACCAAATAGACAACAC
			cps19O-2	ATATCCAATCTCCTAACAAAG
	*cps*19P	acetyltransferase	cps19P-1	TGAAAAATATATCCACGCA
			cps19P-2	TCAAAAAATAAACCATCCC
	*cps*19Q	epimerase	cps19Q-1	GCAGAAGAGAAGCGGAAG
			cps19Q-2	TGAGTGTGGTAGAGGGGC
	*cps*19R	dehydrogenasese	cps19R-1	CTATCTACCGTCAATTCCTC
			cps19R-2	ATAATCACTTTTGCCCCTTT
23	*cps*23E	mannosyl-transferase	cps23E-1	GGCTGTTTTTGGATGTTATTA
			cps23E-2	CCGATTTCTTCCTCTGTATGT
	*cps*23F	sugar transferases	cps23F-1	GAAGAATGAAGCAACCAG
			cps23F-2	TAAAAGTAACGTCGCAAA
	*cps*23G	glycosy ltransferase	cps23G-1	ATTCCATTTTCACCACCAGA
			cps23G-2	TCCAAAGTAAAGCCTTCCAG
	*cps*23H	glycosyl transferases	cps23H-1	TCAATCAACCGATAATACAAAG
			cps23H-2	CAAGCTAAAACATGAAACACAC
	*cps*23I	glycosyl transferase	cps23I-1	GTATCAGTAATAATGTCTTGGC
			cps23I-2	ACTCCACAGTTCTACATCTCTT
	*cps*23J	O-antigen polymerase	cps23J-1	GCTATCAGGAATACACAAAG
			cps23J-2	AGTGGAATAACAACAAAAAT
	*cps*23K	polysaccharide	cps23K-1	GGTATCTCGTATTGATTTGAC
		pyruvyl transferase	cps23K-2	GACCCTGATTACTCTGTTTTT
	*cps*23L	acetylglucosaminyltra	cps23L-1	GAAAGAAGCAATAGAAAGCAT
		nsferase	cps23L-2	TCTCTGAAAAATAACAACCTG
	*cps*23M	flippase Wzx	cps23M-1	GCTTGGTCTGAATAACTACGGT
			cps23M-2	CAAGGAAACATTGTGAAACTCT
	*cps*23N	UDP-glucose/GDP-ma	cps23N-1	GTCGGTCTATCTATCGCTGT
		nnose dehydrogenases	cps23N-2	AATAATCACTTTTGCCCCTT
25	*cps*25E	glucosephosphotransfe	cps25E-1	GGCATCTTATCTATTTTCG
		rase WchA	cps25E-2	CAACTTTCACTGTCTTCAA
	*cps*25F	beta-1,4-galactosyltran	cps25F-1	TTGTTTAGTAGGCTCTTCTG
		sferase	cps25F-2	TTCTATGTACACTGTTTTTG
	*cps*25G	ss-1,4-galactosyltransf	cps25G-1	GATTTTTGTGACTGTGGG
		erase	cps25G-2	TTCGGTAACTTCTCGTGT
	*cps*25H	putative	cps25H-1	GGTCCTGTCTCCTAAAAAA

	phosphotransferase	cps25H-2	CCCAACTGAATAAATCCCA
*cps*25I	sugar transferases	cps25I-1	CTAACTGAGAGAATAGGTGG
		cps25I-2	TCGTTTTTTGAATAGAGAAT
*cps*25J	Beta-1,3-glucosyltrans	cps25J-1	GGATAAGATAAGTGTCATTG
	ferase	cps25J-2	ACAGTTTGTAAAGTTTCATT
*cps*25K	acetyltransferase	cps25K-1	CCTCGATTTCTAATCCTCT
		cps25K-2	CTGGTACATCTTTCGTCAC
*cps*25L	acetyltransferase	cps25L-1	TACTGGAAATTTATTATGCT
		cps25L-2	ACTCTTCGTTACAACTGCTC
*cps*25M	oligosaccharide repeat	cps25M-1	TTAGTTTCCCTTTTTTGGT
	unit polymerase	cps25M-2	AGGTTAATGCATTATCCGT
*cps*25N	glycerophosphotransfe	cps25N-1	GATGCGGTTTATGTTATTGAT
	rase	cps25N-2	TTGTGTATATTTCTCCTCGGT
*cps*25O	flippase	cps25O-1	TCAGAGAAAATAGAGAAAAA
		cps25O-2	TAGCCTACTGTAGAGAGAAC