**Supplementary Figure 2.** Allelic glycosyltransferase Orf19. Alignment of the amino acid sequences of the Orf19 glycosyltransferases from the *C. jejuni* strains. Only variable residues are shown and "." indicates identical amino acid. The Orf19 from *C. jejuni* strain RM3441 HS:56 (Genbank accession number: EU410351) was also included in this analysis.

				38				78
RM3415f RM1861k/GB24k							IFLIAKGNGG	
RM2227k/RM2229k	MNNPLI		I				IVV.E	
LIO87d/RM3418d GB15f								
RM1221f								
RM1508j/RM1163j								
RM1850i/RM3419s							T.E	
RM3437q							T.E	
RM3441?				1	S			
				118				158
SPECIAL CONTRACTORS				1				1
RM3415f RM1861k/GB24k							IIQDLPDNIIA	
RM2227k/RM2229							A	
LI087d/RM3418d								
GB15f								
RM1221f RM1508j/RM1163j								
RM1850i/RM3419s								
RM3437q								
RM3441?								
				198				238
				198				236
RM3415f				QVFRQKAECD			NICEFYFAWQ	
RM1861k/GB24k								
RM2227k/RM2229 LIO87d/RM3418d								
GB15f								
RM1221f								
RM1508j/RM1163j								
RM1850i/RM3419s RM3437q								
RM3441?		100000000000000000000000000000000000000						
						G		.A V I
						G		
				278		G		318
RM3415f	YKLRFTYGIY			278 I			LEPLRYYFDD	318 
RM1861k/GB24k		HEDHDFGTIL	FLSAKKITCV	278       KEELLIYRIR	ANSIIKSEKE	KIIPQSIPFY	LEPLRYYFDD	318   YSKLRAYFKA
RM1861k/GB24k RM2227k/RM2229		HEDHDFGTIL	FLSAKKITCV	278     KEELLIYRIR	ANSIIKSEKE	KIIPQSIPFY	LEPLRYYFDD	318   YSKLRAYFKA
RM1861k/GB24k		HEDHDFGTIL	FLSAKKITCV	278     KEELLIYRIR	ANSIIKSEKE	KIIPQSIPFY	LEPLRYYFDD	318   YSKLRAYFKA
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f		HEDHDFGTIL	FLSAKKITCV	278     KEELLIYRIR	ANSIIKSEKE	KIIPQSIPFY	LEPLRYYFDD	318   YSKLRAYFKA
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j		HEDHDFGTIL	FLSAKKITCV T.	278     KEELLIYRIR	ANSIIKSEKE	KIIPQSIPFYN	LEPLRYYFDDH	318   YSKLRAYFKA
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s		HEDHDFGTIL	FLSAKKITCV	278     KEELLIYRIR	ANSIIKSEKE	KIIPQSIPFY .N. .N.	LEPLRYYFDDH	318   YSKLRAYFKA
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j		HEDHDFGTIL	FLSAKKITCV	278	ANSIIKSEKE	KIIPQSIPFY N. N.	LEPLRYYFDDH	318   YSKLRAYFKA
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q		HEDHDFGTIL	FLSAKKITCV	278     KEELLIYRIR	ANSIIKSEKE	KIIPQSIPFY N. N.	LEPLRYYFDD H	318   YSKLRAYFKA
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q		HEDHDFGTIL	FLSAKKITCV	278     KEELLIYRIR	ANSIIKSEKE	KIIPQSIPFY N. N.	LEPLRYYFDD H	318   YSKLRAYFKA
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q		HEDHDFGTIL	FLSAKKITCV	278   KEELLIYRIR	ANSIIKSEKE	KIIPQSIPFY N. N. N. KNM	LEPLRYYFDD H	318   YSKLRAYFKA
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?	YCMCVIGVNI	HEDHDFGTIL LLFCKESNIL S.	FLSAKKITCVTI	278   KEELLIYRIR   KEELLIYRIR   STAN STAN STAN STAN STAN STAN STAN STAN	ANSIIKSEKE	KIIPQSIPFYNNKNM LFTLVGINLK	LEPLRYYFDDHHHHLFRFKIMLRFF.S.L	318   YSKLRAYFKA
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441? RM3415f RM1861k/GB24k RM2227k/RM2229	YCMCVIGVNI	HEDHDFGTIL LLFCKESNIL S. S.	FLSAKKITCVTI DKKTPNKIFL .LQLQ	278   KEELLIYRIR   STATE   STA	ANSIIKSEKE	KIIPQSIPFYNNKNM  LFTLVGINLKL.	LEPLRYYFDDHHHH LFRFKIMLRFF.S.LF.S.L	318   YSKLRAYFKA  398   YFRHPKKIFK .Q.LR .Q.LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441? RM34415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d	YCMCVIGVNI	HEDHDFGTIL  LLFCKESNIL  S S S	FLSAKKITCVTI DKKTPNKIFLLQLQLQ.	278   KEELLIYRIR	ANSIIKSEKE  F.  YPLNYLNIND  K.  K.  K.	KIIPQSIPFY N N KNM LFTLVGINLK L	LEPLRYYFDD H H H LFRFKIMLRF F.S.L F.S.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q LR Q LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441? RM3415f RM1861k/GB24k RM2227k/RM2229	YCMCVIGVNI	HEDHDFGTIL LLFCKESNIL S. S.	FLSAKKITCVTI DKKTPNKIFLLQLQLQ.	278   KEELLIYRIR	ANSIIKSEKE  F.  YPLNYLNIND  K.  K.  K.	KIIPQSIPFY N N KNM LFTLVGINLK L L	LEPLRYYFDD H H H LFRFKIMLRF F.S.L F.S.L F.S.L F	318   YSKLRAYFKA  398   YFRHPKKIFK Q LR Q LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441? RM34415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j	YCMCVIGVNI	HEDHDFGTIL  LLFCKESNIL  S. S.	FLSAKKITCV TI  DKKTPNKIFLLQLQLQLQLQLQI.YLQI.Y.	278   KEELLIYRIR	ANSIIKSEKE  F.  YPLNYLNIND	KIIPQSIPFYNNKNMLL	LEPLRYYFDDHHH LFRFKIMLRFF.S.LF.S.LF.LF.LF.LF.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q.LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441? RM34417 RM34415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s	YCMCVIGVNIM.A.	HEDHDFGTIL  LLFCKESNIL  S S S	FLSAKKITCVTI DKKTPNKIFLLQLQLQLQLQI.Y	278   KEELLIYRIR	ANSIIKSEKE  F.  YPLNYLNIND  K.  K.  K.  K.  IK.	KIIPQSIPFY N. N. KNM.	LEPLRYYFDD H H H LFRFKIMLRF F.S.L F.S.L F.L F.L F.L F.L	318   YSKLRAYFKA
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441? RM34415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q	YCMCVIGVNIM.A.	HEDHDFGTIL LLFCKESNIL S. S.	DKKTPNKIFL LQ	278   KEELLIYRIR   STATE   STA	ANSIIKSEKE  F.  YPLNYLNIND	KIIPQSIPFYN	LEPLRYYFDD  H.  H.  H.  LFRFKIMLRF  F.S.L  F.S.L  F.  F.L  F.L  F.L  F.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q.LR Q.LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441? RM34415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?	YCMCVIGVNIM.A.	HEDHDFGTIL LLFCKESNIL S. S.	DKKTPNKIFL LQ	278   KEELLIYRIR   STATE   STA	ANSIIKSEKE  F.  YPLNYLNIND	KIIPQSIPFYN	LEPLRYYFDD H H H LFRFKIMLRF F.S.L F.S.L F.L F.L F.L F.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q.LR Q.LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?  RM3415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3437q RM3437q RM3441?	YCMCVIGVNIM.AM.AK.	HEDHDFGTIL LLFCKESNIL S. S.	DKKTPNKIFL LQ	278   KEELLIYRIR   STATE   STA	ANSIIKSEKE  F.  YPLNYLNIND	KIIPQSIPFYN	LEPLRYYFDD  H.  H.  H.  LFRFKIMLRF  F.S.L  F.S.L  F.  F.L  F.L  F.L  F.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q.LR Q.LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?  RM3415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3437q RM3437q RM3437q RM3441?  RM3415f RM1861k/GB24k	YCMCVIGVNIM.AK.	HEDHDFGTIL LLFCKESNIL S. S.	DKKTPNKIFL LQ	278   KEELLIYRIR   STATE   STA	ANSIIKSEKE  F.  YPLNYLNIND	KIIPQSIPFYN	LEPLRYYFDD  H.  H.  H.  LFRFKIMLRF  F.S.L  F.S.L  F.  F.L  F.L  F.L  F.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q.LR Q.LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?  RM3415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3437q RM3437q RM3441?	YCMCVIGVNIM.AM.AK.	HEDHDFGTIL LLFCKESNIL S. S.	DKKTPNKIFL LQ	278   KEELLIYRIR   STATE   STA	ANSIIKSEKE  F.  YPLNYLNINDKKKKK.	KIIPQSIPFYN	LEPLRYYFDD  H.  H.  H.  LFRFKIMLRF  F.S.L  F.S.L  F.  F.L  F.L  F.L  F.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q.LR Q.LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?  RM3415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1521f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3437q RM3437q RM3441?  RM3415f RM1861k/GB24k RM2227k/RM3419s RM3437q RM3441?	YCMCVIGVNIM.AM.AK.	HEDHDFGTIL LLFCKESNIL S. S.	DKKTPNKIFL LQ	278   KEELLIYRIR   STATE   STA	ANSIIKSEKE  F.  YPLNYLNINDKKKKK.	KIIPQSIPFYN	LEPLRYYFDD  H.  H.  H.  LFRFKIMLRF  F.S.L  F.S.L  F.  F.L  F.L  F.L  F.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q.LR Q.LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?  RM3415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3417;  RM3415f RM1861k/GB24k RM2227k/RM2229k LIO87d/RM3419s RM3437q RM3415f RM1861k/GB24k RM2227k/RM3418d GB15f RM1861k/GB24k RM2227k/RM2229k LIO87d/RM3418d GB15f RM1221f	YCMCVIGVNIM.AM.AKK.	HEDHDFGTIL LLFCKESNIL S. S.	DKKTPNKIFL LQ	278   KEELLIYRIR   STATE   STA	ANSIIKSEKE  F.  YPLNYLNINDKKKKK.	KIIPQSIPFYN	LEPLRYYFDD  H.  H.  H.  LFRFKIMLRF  F.S.L  F.S.L  F.  F.L  F.L  F.L  F.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q.LR Q.LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?  RM3415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?  RM3415f RM161k/GB24k RM2227k/RM2229k LIO87d/RM3418d GB15f RM1850i/RM3419s RM3437q RM3441?  RM3415f RM1861k/GB24k RM2227k/RM2229k LIO87d/RM3418d GB15f RM1861k/GB24k RM2227k/RM2229k LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j	YCMCVIGVNIM.AM.AK. KNNAK.	HEDHDFGTIL LLFCKESNIL S. S.	DKKTPNKIFL LQ	278   KEELLIYRIR   STATE   STA	ANSIIKSEKE  F.  YPLNYLNINDKKKKK.	KIIPQSIPFYN	LEPLRYYFDD  H.  H.  H.  LFRFKIMLRF  F.S.L  F.S.L  F.  F.L  F.L  F.L  F.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q.LR Q.LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?  RM3415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3417;  RM3415f RM1861k/GB24k RM2227k/RM2229k LIO87d/RM3419s RM3437q RM3415f RM1861k/GB24k RM2227k/RM3418d GB15f RM1861k/GB24k RM2227k/RM2229k LIO87d/RM3418d GB15f RM1221f	YCMCVIGVNIM.AM.AKK.	HEDHDFGTIL LLFCKESNIL S. S.	DKKTPNKIFL LQ	278   KEELLIYRIR   STATE   STA	ANSIIKSEKE  F.  YPLNYLNINDKKKKK.	KIIPQSIPFYN	LEPLRYYFDD  H.  H.  H.  LFRFKIMLRF  F.S.L  F.S.L  F.  F.L  F.L  F.L  F.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q.LR Q.LR
RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?  RM34415f RM1861k/GB24k RM2227k/RM2229 LIO87d/RM3418d GB15f RM1221f RM1508j/RM1163j RM1850i/RM3419s RM3437q RM3441?  RM3415f RM1621k/GB24k RM2227k/RM2229k LIO87d/RM3419s RM3437q RM3441?	YCMCVIGVNIM.AM.AK.	HEDHDFGTIL LLFCKESNIL S. S.	DKKTPNKIFL LQ	278   KEELLIYRIR   STATE   STA	ANSIIKSEKE  F.  YPLNYLNINDKKKKK.	KIIPQSIPFYN	LEPLRYYFDD  H.  H.  H.  LFRFKIMLRF  F.S.L  F.S.L  F.  F.L  F.L  F.L  F.L	318   YSKLRAYFKA  398   YFRHPKKIFK Q.LR Q.LR