

### Region 1

From	To	Product
60466	61656	putative integrase
62251	62523	putative phage DNA-binding protein
62520	62723	hypothetical protein
62733	63020	putative bacteriophage transcriptional regulator protein
63050	63526	hypothetical protein
63523	63738	conserved hypothetical protein
63735	64385	hypothetical protein
64372	65223	putative primase domain protein
65282	67132	conserved hypothetical protein
67166	67954	hypothetical protein
67990	68991	putative phage portal vertex protein
69087	69434 c	conserved hypothetical protein
69431	69772 c	conserved hypothetical protein
69882	70085 c	hypothetical protein

### Region 4

299949	301127 c	putative phage integrase
301127	301351 c	conserved hypothetical protein
301699	302004 c	conserved hypothetical protein
302179	302604 c	conserved hypothetical protein
302681	302959 c	hypothetical protein
302956	305652 c	putative phage-related protein
306023	306484 c	hypothetical protein
306894	307100 c	conserved hypothetical protein
307169	307486 c	conserved hypothetical protein
307510	307842 c	conserved hypothetical protein
307912	308343	putative phage-related protein
308630	309400	conserved hypothetical protein
309586	310977	conserved hypothetical protein
310974	311966 c	putative phage-related protein
311963	312361 c	putative phage tail protein
312373	315237 c	putative phage tail protein
315263	315379 c	putative phage protein
315388	315714 c	putative phage tail protein
315770	316279 c	putative major tail tube protein
316300	317469 c	putative major tail sheath protein (protein fi)
317485	317835 c	putative baseplate assembly protein W (gpw)

317832 318380 c putative baseplate assembly protein v (gpv)  
 318467 318748 c  
 318758 319990 c putative phage collar protein  
 319995 320546 c putative tail protein I (gpi)  
 320539 321429 c putative baseplate assembly protein J (gpj)  
 321516 321977 c putative tail completion protein S (gps)  
 321974 322459 c putative tail completion protein R (gpr)  
 322456 322980 c conserved hypothetical protein  
 322980 323615 c putative phage lytic enzyme  
 323617 323892 c putative phage protein  
 323885 324238 c putative phage protein  
 324241 324456 c putative tail protein X (gpx)  
 324456 324923 c putative head completion/stabilization protein (gpl)  
 325028 325735 c putative terminase, endonuclease subunit (gpm)  
 325739 326755 c putative capsid proteins precursor (gpn)  
 326789 327652 c presumed capsid scaffolding protein (gpo)  
 327771 329564 putative phage terminase, ATPase subunit (gpp)  
 329564 330574 putative presumed portal vertex protein (gpq)  
 330746 331456 putative site-specific DNA-methyltransferase  
 332227 332523 conserved hypothetical protein  
 332777 333241 hypothetical protein  
 333316 334077 c conserved hypothetical protein  
 334344 334940 c putative DNA recombinase  
 334915 335202 c hypothetical protein

## Region 7

631290 632120 putative transmembrane ABC transporter  
 632110 633504 putative ABC transporter component, polysaccharide related  
 633501 634088 putative chloramphenicol acetyltransferase  
 634123 635145 putative LPS O-antigen biosynthesis protein  
 635293 636603 putative glycosyl transferase  
 636600 638300 putative glycosyltransferase, fusion protein  
 638464 640812 putative transmembrane protein  
 640842 641507 c putative lipase  
 641819 643768 putative transmembrane protein  
 643808 644212 c putative transmembrane GtrA-like cell surface polysaccharide biosynthesis protein  
 644327 644734 c putative transmembrane cell surface polysaccharide biosynthesis protein  
 644731 646038 c putative FMN amine oxidoreductase  
 646068 647012 c putative transmembrane anchor NAD-dependent epimerase/dehydratase/dehydrogenase

647041 647712 c conserved hypothetical protein  
647750 648481 c putative transmembrane anchor short-chain dehydrogenase  
648484 649794 c putative FAD-binding oxidoreductase  
649791 651215 c putative transmembrane UbiA prenyltransferase family protein  
651385 653316 c putative transmembrane protein  
653313 654161 c putative glycosyl transferase  
654172 654531 c putative transmembrane protein  
654528 655358 c putative xylose isomerase  
655355 656137 c conserved hypothetical protein  
656224 657372 c conserved hypothetical protein  
657365 658375 c putative undecaprenyl-phosphate 4-deoxy-4-formamido-l-arabinose transferase  
658467 659435 c putative transmembrane protein  
659540 661255 c putative transmembrane sulfatase protein

## **Region 12**

1324492 1324737 c conserved hypothetical protein  
1324734 1325993 c putative conjugal transfer protein  
1325996 1326982 c putative conjugal transfer protein  
1326979 1327683 c putative conjugal transfer protein  
1327702 1329000 c putative conjugal transfer protein  
1329012 1329749 c putative conjugal transfer protein  
1329746 1332232 c putative conjugal transfer protein  
1332243 1332515 c putative conjugal transfer protein  
1332512 1332895 c putative conjugal transfer protein  
1332892 1333932 c putative conjugal transfer protein  
1333929 1334375 c conserved hypothetical protein  
1334372 1336372 c putative conjugal transfer protein  
1336606 1336866 c conserved hypothetical protein  
1336911 1337804 c putative LysR family transcriptional regulator  
1337815 1337940 c putative regulator, pseudogene  
1337956 1338126 c putative esterase, pseudogene  
1338123 1338425 c conserved hypothetical protein  
1338412 1339266 c putative NAD(P)H dehydrogenase [quinone]  
1339362 1340264 putative LysR family transcriptional regulator  
1340359 1340619 c conserved hypothetical protein  
1340656 1341549 c putative LysR family transcriptional regulator  
1341582 1342424 c conserved hypothetical protein  
1342421 1342804 c putative 4-carboxymuconolactone decarboxylase  
1342737 1343207 c putative MerR family transcriptional regulator

1343295 1344665 c putative MFS family transmembrane transporter  
1344784 1345635 putative LysR family transcriptional regulator  
1345632 1347596 c conserved hypothetical protein  
1347593 1348030 c conserved hypothetical protein  
1348056 1348631 c putative transmembrane anchor conjugal transfer protein  
1348628 1349152 c conserved hypothetical protein  
1349149 1349412 c putative parB partition protein  
1349409 1350047 c putative ParA/CobQ/CobB/MinD nucleotide binding domain protein  
1350298 1351131 c putative RepA-like replication protein  
1351158 1351448 c conserved hypothetical protein  
1351532 1352335 c conserved hypothetical protein  
1352687 1353037 c conserved hypothetical protein  
1353340 1353636 putative HTH transcriptional regulator  
1353993 1354307 c conserved hypothetical protein  
1354642 1355064 c conserved hypothetical protein  
1355155 1355490 hypothetical protein  
1355532 1356575 putative transposase  
1356572 1357087 conserved hypothetical protein  
1357200 1357388 c conserved hypothetical protein  
1357451 1359481 c putative ParB-like nuclease domain protein  
1359562 1360392 c conserved hypothetical protein  
1360425 1360622 c conserved hypothetical protein  
1361053 1362183 conserved hypothetical protein  
1362149 1363831 putative transmembrane protein  
1363664 1364188 c putative RadC DNA repair protein, pseudogene  
1364225 1365508 c conserved hypothetical protein  
1365534 1365839 c conserved hypothetical protein  
1365820 1366203 c conserved hypothetical protein  
1366343 1367584 c putative prophage integrase

#### **Region 14**

1720129 1720437 hypothetical protein  
1720450 1720872 c hypothetical protein  
1720901 1721134 conserved hypothetical protein  
1721405 1721854 putative modification methylase  
1722115 1722405 conserved hypothetical protein  
1722566 1723417 c putative ISXac3 like transposase protein  
1723435 1723713 c putative ISXac3 like transposase  
1723923 1724387 putative transmembrane protein

## Region 15

1945505 1946305 hypothetical protein  
1946295 1947431 putative phage-related protein  
1947488 1948663 c putative phage integrase protein  
1948606 1948884 c putative phage excisionase  
1949118 1949345 hypothetical protein  
1949409 1949687 hypothetical protein  
1949779 1950516 c hypothetical protein  
1950503 1950811 c hypothetical protein  
1950814 1951029 c conserved hypothetical protein  
1951052 1951777 c conserved hypothetical protein  
1951781 1952488 c conserved hypothetical protein  
1952747 1953649 c putative recombination-associated protein  
1953804 1954067 c hypothetical protein  
1954064 1954582 c hypothetical protein  
1954703 1955122 c putative transcriptional regulatory protein  
1955122 1955622 c hypothetical transmembrane anchored protein  
1955683 1956141 c hypothetical protein  
1956143 1956526 c conserved hypothetical protein  
1956600 1956920 hypothetical protein  
1957137 1957514 c conserved hypothetical protein  
1958018 1958398 c hypothetical protein  
1958628 1959035 hypothetical protein  
1959004 1959528 hypothetical protein  
1959546 1960592 conserved hypothetical protein  
1960585 1961139 conserved hypothetical protein  
1961136 1961675 conserved hypothetical protein  
1961672 1962103 conserved hypothetical proteins  
1962100 1962438 hypothetical protein  
1962435 1963262 conserved hypothetical protein  
1963259 1964230 hypothetical protein  
1964366 1964863 c conserved hypothetical protein  
1964951 1965382 putative transmembrane protein  
1965431 1965763 putative transmembrane protein  
1966393 1966935 putative transmembrane phage lysozyme  
1967303 1967632 hypothetical protein  
1967637 1967933 hypothetical protein  
1967963 1968247 conserved hypothetical protein

1968244 1968648 conserved hypothetical protein  
1968648 1969196 conserved hypothetical protein  
1969201 1969728 conserved hypothetical protein  
1969933 1971006 putative phage tail fiber protein  
1971470 1972105 putative phage terminase  
1972109 1973662 putative DNA packaging protein gp17 (terminase)  
1973659 1973937 hypothetical protein  
1973939 1974127 hypothetical protein  
1974124 1974597 hypothetical protein  
1974597 1976768 putative phage protein  
1976755 1977750 putative phage related protein  
1977756 1977971 hypothetical protein  
1978049 1979158 putative phage-related protein  
1979230 1979676 hypothetical protein  
1979731 1980294 putative phage-related protein  
1980296 1980976 conserved hypothetical protein  
1980978 1982291 conserved hypothetical protein  
1982497 1983120 conserved hypothetical protein  
1983120 1985021 hypothetical protein  
1985030 1985503 conserved hypothetical protein  
1985520 1985990 conserved hypothetical protein  
1985992 1986729 conserved hypothetical protein  
1986726 1988207 putative phage-related protein  
1988210 1988542 hypothetical protein  
1988556 1990445 conserved hypothetical protein  
1990474 1991988 hypothetical protein  
1991992 1999923 conserved hypothetical protein  
2000022 2000375 conserved hypothetical protein, partial  
2000458 2001390 conserved hypothetical protein  
2001421 2001822 conserved hypothetical protein  
2001926 2002540 conserved hypothetical protein

#### **Region 16**

3089388 3089654 c hypothetical protein  
3089651 3090445 c putative peptidase  
3090702 3092462 putative Hep Hag family adhesin  
3093052 3093834 c conserved hypothetical protein  
3093974 3094429 hypothetical protein

3094419 3097199 c putative conjugal transfer protein TraA  
3097317 3098039 c hypothetical protein  
3098061 3099935 c putative type IV secretory protein conjugation protein TraD  
3099913 3100737 c putative ankyrin repeat protein  
3100776 3101039 c hypothetical protein  
3101231 3101434 c putative transmembrane protein  
3101572 3102096 c hypothetical protein  
3102183 3105164 c conserved hypothetical protein  
3105188 3105520 c putative transmembrane protein  
3105586 3106713 c putative transmembrane protein  
3106710 3107345 c conserved hypothetical exported protein  
3107374 3107775 c hypothetical protein  
3107997 3108554 hypothetical protein  
3108541 3109632 hypothetical protein  
3109638 3110534 conserved hypothetical protein  
3110654 3110800 conserved hypothetical protein  
3110838 3111677 c conserved hypothetical protein  
3111950 3112555 c hypothetical protein  
3112555 3113151 c putative plasmid partitioning like protein  
3113266 3113730 c hypothetical protein  
3114059 3115846 putative type IV pilus protein  
3116009 3116770 c conserved hypothetical protein  
3116767 3117684 c hypothetical protein  
3117773 3118255 c conserved hypothetical protein  
3118477 3119181 c conserved hypothetical protein  
3119229 3119615 hypothetical protein  
3119590 3120078 c hypothetical protein  
3120071 3120601 c conserved hypothetical protein  
3120704 3121537 c hypothetical protein  
3121497 3121979 c putative permease ABC transporter protein  
3122039 3122401 c hypothetical exported protein  
3122585 3123445 c putative transposase  
3123454 3123737 c putative transposase, pseudogene  
3124357 3124710 c hypothetical protein  
3124816 3125547 c hypothetical protein  
3125547 3127070 c putative phage-related integrase

## **Region 20**

3913248 3914057 c putative transmembrane protein

3914061 3917930 c putative autotransporter haemagglutinin-related protein  
3918118 3918825 c putative giant cable pilus chaperone protein  
3918842 3919987 c putative minor pilin and initiator protein  
3919984 3922710 c putative outer membrane usher (colonisation factor antigen I subunit c)  
3922761 3923270 c putative giant cable pilus fimbrial subunit  
3923789 3924877 c putative transmembrane protein  
3925243 3926520 c putative citrate synthase  
3926817 3927059 c putative 50S ribosomal protein L31  
3927148 3928086 c putative nucleoside hydrolase  
3928471 3930582 c putative ATP-dependent DNA helicase  
3930590 3930976 c putative endoribonuclease protein