

Table S2. *S. thermophilus* CRISPR sequence analysis.

spacer identification (strain reference in Fig. 5, CRISPR locus, and spacer position from the leader end)	spacer sequence	spacer length	subject accession number	subject definition	bit score	% identity	alignment length	in matches	gap opens	query start	subject start	subject end	BLAST hit with <i>S. thermophilus</i> phages	BLAST hit with other viruses	BLAST hit with <i>S. thermophilus</i> plasmids	BLAST hit with other plasmids	BLAST hit with <i>S. thermophilus</i> chromosomal sequence	BLAST hit with other chromosomal sequences	No significant BLAST hit (bit score below 40.1)	
001_1_03	TGTTTGCAGCAAACTCAAGATTCGAATTTG	30	AF115103	<i>Streptococcus thermophilus</i> bacteriophage Sf21, comp	48	96	28	2	0	3	30	3634	38331							
001_1_02	AATGACGAGGAGCTATGGCACAAGTTACA	30			32	100	16	0	0	1	18	910896	910911							
001_1_03	CGATTTGCAACATCGTGGACACTGTIATC	30			32	100	16	0	0	8	23	7418	7433							
001_1_04	ACACTTGGCAGCGCTTATCTCAACAGCGCA	30			30	100	15	0	0	3	17	5650	5664							
001_1_05	CTGTTCCCTTGTCTTTTGTGTATCTTTTC	30			34	100	17	0	0	13	29	104947	104931							
001_1_06	TTCACTTCCGTTTTTGTGGCAATCCT	30			38	96	23	1	0	1	23	2214	2236							
001_1_07	GCTGGCAGGAAAGCAAGCAAGGCTCAACA	30			38	93	27	2	0	4	30	1003	1029							
001_1_08	CATAGATGGAAAACATGAAAACAGATTCAA	30	AF085222	<i>Streptococcus thermophilus</i> bacteriophage DT1, compl	46	100	23	0	0	8	30	24339	24361	1						
001_1_09	ATAATGCCGTTGAATACACGGCAAGGTC	30			28	100	14	0	0	1	14	1148	1135							
001_1_10	GAGCGAGCTCGAAATATCTTAATACAAG	30	U88974	<i>Streptococcus thermophilus</i> temperate bacteriophage C	46	100	23	0	0	4	26	23003	23025	1						
001_1_11	GTTCCGTAGCGTCATGGTGAACGATTTA	30			30	100	15	0	0	10	24	912	898							
001_1_12	GGCGTCCCAATCCCTGATTAATCTAGCTCG	30	AF085222	<i>Streptococcus thermophilus</i> bacteriophage DT1, compl	54	100	27	0	0	1	27	21704	21678	1						
001_1_13	AACACAGCAAGCAAGGATGATGCTGATG	30			34	100	17	0	0	11	27	19872	19888							
001_1_14	CGACACAAAAGCATGCAAGAGTTGCAAG	29	AY196178	<i>Streptococcus thermophilus</i> bacteriophage kappa3 puta	58	100	29	0	0	1	29	1172	1200	1						
001_1_15	ACAATTCCTTCATCCGGTAACTGGTCAAGT	30			34	100	17	0	0	1	17	6135	6151							
001_1_16	AATTAAAGGCATAGAAAGGAGCAACATG	30			30	100	15	0	0	12	26	5814	5800							
001_1_17	CGATTTTAAATCAATTTTCAATCTCAT	30			38	100	19	0	0	3	21	1512	1530							
001_1_18	CGAGTATCAGCAAGCAAGCTGTATTACT	30	AF115103	<i>Streptococcus thermophilus</i> bacteriophage Sf21, comp	52	97	30	1	0	1	30	5038	5038	1						
001_1_19	ATAAAGTATAAATTTTAAATTTTAAAGA	30	AF145054	<i>Streptococcus thermophilus</i> bacteriophage 7201, comp	60	100	30	0	0	1	30	5338	5367	1						
001_1_20	AATAATTTATGGTATAGCTTAATATCAITG	30			32	100	16	0	0	14	29	4529	4514							
001_1_21	TGCATCGAGCAGCTGTCAGTTTACCGTTTC	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	42	93	29	2	0	2	30	16682	16710	1						
001_1_22	TCTATTCGAGTCAACTCAAAATTTATGCT	30	AF115103	<i>Streptococcus thermophilus</i> bacteriophage Sf21, comp	42	96	25	1	0	4	28	20428	20452	1						
001_1_23	AATCGTTCAAATCTGTTTAAAGTACATTT	30			34	100	17	0	0	12	28	386376	386392							
001_1_24	AATCAATACAGCAAGGATTAAGTGGCTTC	30	AF020798	<i>Streptococcus thermophilus</i> bacteriophage lysogeny mc	52	97	30	1	0	1	30	2162	2191	1						
001_1_25	GCTTAGCTGCCAATCCACCAAGCTGGATG	30	AF145054	<i>Streptococcus thermophilus</i> bacteriophage 7201, comp	60	100	30	0	0	1	30	17818	17847	1						
001_1_26	CAACCAACGGTAAACAGCTACTTTTACAAT	30			30	95	19	1	0	6	24	1654290	1654308							
001_1_27	ATACTGAAGGATAGGAGCTGTAAGATCT	30			30	100	15	0	0	10	24	60138	60124							
001_1_28	TAATGCTACATCTCAAAGGATGATCCGACA	30	AF115103	<i>Streptococcus thermophilus</i> bacteriophage Sf21, comp	58	100	29	0	0	2	30	19154	19182	1						
001_1_29	AAGTAGTGTAGCTACATCAATGGTTTAT	30	AJ239049	<i>Streptococcus thermophilus</i> partial repA gene, ORF1 to	60	100	30	0	0	1	30	1735	1764							
001_1_30	ACCTAGAAGCAATGGCGTATATGATTTG	30			30	95	19	1	0	9	27	1847	1865							
001_1_31	AATTTGCCCTTCTTGGCCCTTGGATAG	30			36	95	22	1	0	3	24	38780	38759							
001_1_32	ACCATAGCAATCATTTGGCCCTTGGATG	30	AF115103	<i>Streptococcus thermophilus</i> bacteriophage Sf21, comp	44	93	30	2	0	1	30	9553	9524	1						
001_2_01	GCTTTCTAGCTCGCTTAATACCCCTTCCAGAAA	36			32	100	16	0	0	11	26	1127525	1127540							
001_2_02	TCAAAATATGTTTACCTGTATTTTCAATTA	40			33	93	27	1	0	11	33	15681	15639							
001_2_03	CCACTGCTGTGTACGATCTCCAGCACTCCGCTATGATG	40	AF085222	<i>Streptococcus thermophilus</i> bacteriophage DT1, compl	66	97	37	1	0	1	37	23672	23636	1						
001_3_01	AAATTCCTAAACCGTAAAGAGGAGGAGCA	30	AF145054	<i>Streptococcus thermophilus</i> bacteriophage 7201, comp	60	100	30	0	0	1	30	19620	19649	1						
001_3_02	TACTGCTGTATTAGCTGTGGTTGGTTTGG	30	AF158600	<i>Streptococcus thermophilus</i> bacteriophage Sf11, comp	44	93	30	2	0	1	30	26400	26371	1						
001_3_03	TTCCCTTGTAAACATTTTAAATAATGT	30	AF410153	Swinepox virus isolate 17077-99, complete genome	44	100	22	0	0	9	30	71691	71712							
001_3_04	TATCCAGAGAAATGAAGAAACAATATAGA	30			36	100	18	0	0	10	27	917945	917928							
001_3_05	TATGAATGTCAAATTAACGGTTGCGGTAA	30			34	95	21	1	0	3	23	966	986							
001_3_06	CGATGAAATGATGGCTTCCAGGTAAGGA	30			34	100	17	0	0	9	25	5597395	5597379							
001_3_07	AATGGGAAAGTACGTATATATGATCCAGAG	30	AY196178	<i>Streptococcus thermophilus</i> bacteriophage kappa3 puta	60	100	30	0	0	1	30	229	258	1						
001_3_08	GAAAGCAAGAAAGTGAAGGATGAGCGGC	30	AF115102	<i>Streptococcus thermophilus</i> bacteriophage Sf19, comp	42	93	29	2	0	1	29	10073	10101	1						
001_3_09	AATTTAAACAGATATAGTGAATCGGTATT	30			34	100	17	0	0	1	17	723004	723020							
001_3_10	CTATTACTATCTCCGAAGGATTTGGACA	30	AF115103	<i>Streptococcus thermophilus</i> bacteriophage Sf21, comp	44	96	26	1	0	1	26	24303	24328	1						
002_1_01	TTACGTTTGAAGAAATTCACAACTAATGA	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0	0	1	30	17202	17231	1						
003_1_01	CTCAGCTGTTACTGGTGAACCATGTTCCAA	30	AY196178	<i>Streptococcus thermophilus</i> bacteriophage kappa3 puta	60	100	30	0	0	1	30	885	914	1						
004_1_01	TCCAAGTATTITGAGGAGTATTAAAGACAT	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0	0	1	30	33968	33997	1						
005_1_01	ATTGTCTATTAGCAGCACTGGAAGTATGAT	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0	0	1	30	33044	33073	1						
006_1_01	CTTCAAATGACTGCAAGGCTGCAAAAGTA	30			54	95	21	1	0	1	21	377	357							
007_1_01	AGTTCTTGTCCAGCACTGCAACCCCGC	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0	0	1	30	22075	22044	1						
008_1_01	CGCCTTCTAATTTGSAATTTACCTTCCGAGS	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0	0	1	30	34521	34492	1						
009_1_01	TTATATCGAAGAACGACTGAAAAGCGTTGA	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0	0	1	30	1113	1142	1						
010_1_01	TGAAGTATTAGTCTCAAAGATGATAT	31	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	62	100	31	0	0	1	31	26529	26559	1						
011_1_01	AGTTGATGGCTAATCAACCATGCCATAA	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0	0	1	30	29923	29894	1						
012_1_01	AAATCAACGTACATCCGATATGAGCCAGCA	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0	0	1	30	19188	19159	1						
013_1_02	GACATATCGACGATCGTGATTTCCCAAT	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0	0	1	30	31708	31737	1						
012_1_01	GCAACACTCAAAGTGCAGCAAGCAAGCTT	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0	0	1	30	441	470	1						
013_1_02	CTCAGCTGTTACTGGTGAACCATGTTCCAA	31	AY196178	<i>Streptococcus thermophilus</i> bacteriophage kappa3 puta	50	100	25	0	0	1	25	885	909	1						
014_1_01	TTTTCATCGCAATTTCCATGTTTAAATCT	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0	0	1	30	27032	27003	1						
015_1_01	GAAATATTAGTCTCTCAACAGATGATTT	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	52	97	30	1	0	1	30	26530	26559	1						
016_1_01	ATTGGCATGATTTCAATTTAATTTGGGAT	29	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	58	100	29	0	0	1	29	32136	32164	1						
018_1_01	TACGAAAGCACTGGTTGAAAATTTCAAG	30	AY196178	<i>Streptococcus thermophilus</i> bacteriophage kappa3 puta	60	100	30	0	0	1	30	106	135	1						
019_1_01	AAGCAAGTGTATATTTCTTCTTCTTAT	30	AY699705	<i>Streptococcus thermophilus</i> bacteriophage 2972, comp	60	100	30	0												

spacer identification (strain reference in Fig. 5, CRISPR locus, and spacer position from the leader end)	spacer sequence	spacer length	subject accession number	subject definition	bit score	% identity	alignment length	mismatches	gap opens	query start	query end	subject start	subject end	BLAST hit with S. thermophilus phages	BLAST hit with other viruses	BLAST hit with S. thermophilus plasmids	BLAST hit with other plasmids	BLAST hit with S. thermophilus chromosomal sequence	BLAST hit with other chromosomal sequences	No significant BLAST hit (bit score below 40.1)
033_3_01	AACACTTGGTCCATTAAGTCTCCTCAGAG	30			34	100	17	0	0	7	23	652077	652061							
033_3_02	AGATACGTCAGTTGTGTTAGTCTTGCTAC	30	AJ242479	Streptococcus thermophilus res gene, ORF2 and ORF3	60	100	30	0	1	30	4077	4106				1				
033_3_03	ATTCCGGTACCTGAATATACTAGTCTGTA	30			34	100	17	0	0	1	17	1700352	1700336							1
033_3_04	AAACCGTTCGCAATTAACAAGAGTGGCGAA	30			34	100	17	0	0	4	20	1568391	1568375							1
033_3_05	TATTAAGGTCGCAAGAGGCTTCAACCTGA	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	44	93	30	2	1	30	1808	18537		1						
033_3_06	TATCTCTGAAGGTAAAGCTGAAGAAATAA	30			38	100	19	0	0	6	24	41651	41633							1
033_3_07	CAACCCAGACATGAATGCTCACTAGATATG	30			38	100	19	0	0	2	20	21347	21363							1
033_3_08	ACGGTCTGTATGAAAAGACCACTTGGCT	30	AJ242477	Streptococcus thermophilus repA gene for putative sma	52	97	30	1	0	1	30	2464	2493				1			
033_3_09	CATGTAACCTTGAATATCAACGACAGATAG	31			32	100	16	0	0	13	28	101063	101048							1
033_3_10	GAACCTTTCAGCTTAAACAGCGCTTAGAAC	31			34	95	21	1	0	6	28	493627	493607							1
033_3_11	ATGACCTATTCAAGATATGGTCACTAA	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	44	93	30	2	0	1	30	34287	34316							1
033_3_12	TCTTAAAXATTAATTAACGCAAGTACAT	30	AF158601	Streptococcus thermophilus bacteriophage Sfi18 lysin	46	96	27	1	0	4	30	4156	4182							1
033_3_13	TAAACAGCTGACAGCTGTACTATCAGCC	30			36	100	18	0	0	4	21	2021331	2021314							1
033_3_14	GGGTGCTGATATGCTACTCTGGTGCGAC	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	44	93	30	2	0	1	30	34503	34532							1
034_1_01	AGATACTCGCTCATATGCTCAACCGTGGT	29	AF115103	Streptococcus thermophilus bacteriophage Sfi21, comp	46	100	23	0	0	4	26	38729	38707							1
034_1_02	ATGTTTAAAGAGCGCTTCAAGTATGTCAC	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	52	97	30	1	0	1	30	9172	9201							1
034_1_03	ATCAGATAAAAAGGTGGATATGCTACCA	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	52	100	26	0	0	5	30	18734	18759							1
034_1_04	GGCAATATTACCCGTTTGGATGATGATAT	30			34	95	21	1	0	7	27	502533	502553							1
034_1_05	GTGGTCTTCTATTCGTAAGATGACACTAGA	30	AF085222	Streptococcus thermophilus bacteriophage DT1, comple	44	93	30	2	0	1	30	34403	34432							1
034_1_06	ATTAGATGCTATTATCACCAGTGCAAAAT	30			34	100	17	0	0	14	30	339536	339552							1
034_1_07	CAAAAACGCTTGGGTGACTCACTAATGGA	30	AF115102	Streptococcus thermophilus bacteriophage Sfi19, comp	52	97	30	1	0	1	30	6849	6878							1
034_1_08	ATTTTTGACATTTGACTTAAAGATGTGGAG	31	CP000421	Streptococcus thermophilus LMD-9 plasmid 2, complete	54	97	31	0	0	1	31	2535	2565				1			
034_1_09	CGAATCAGTAGTATGATTTGGCCGTTTTA	30	CP000323	Psychrobacter cryohalotolerans K5, complete genome	40	100	20	0	0	11	30	1603941	1603922							1
034_1_10	CACATACGTTACTATCGGGGCGACAACA	30			32	100	16	0	0	1	16	18219	18204							1
034_1_11	CAAGAATGGGCATAAACGACATGACCCA	29	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	58	100	29	0	0	1	29	20961	20989							1
034_1_12	CTGTGCTGTTTCGACCCGCAACGTTATCAA	31	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	60	100	30	0	0	2	31	1343	1372							1
034_1_13	CATTAAATGCAACCCGTTGATGCTGTGACA	30			34	100	17	0	0	1	17	360569	360585							1
034_1_14	ATTAAATTCGCAAAATAGCCAAATTCGC	30	AF085222	Streptococcus thermophilus bacteriophage DT1, comple	60	100	30	0	0	1	30	3037	3068							1
034_1_15	TTACAAGACAAAGAAACAAACCAACCCA	30	CP000350	Leptospira borgpetersenii serovar Hardjo-bovis JB197 c	44	96	26	1	0	5	30	1010698	1010723							1
034_1_16	TGGAACATGAAGATGAATAGAGTGGAA	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	44	93	30	2	0	1	30	34105	34134							1
034_1_17	AAATCTCGTAGTATGACAGTGGATTTTCAA	30	AF115102	Streptococcus thermophilus bacteriophage Sfi19, comp	60	100	30	0	0	1	30	1746	1717							1
034_1_18	TCATAGCGGATTCGCAACCCGCTAAGCC	29	AF115103	Streptococcus thermophilus bacteriophage Sfi21, comp	46	96	27	1	0	3	29	39230	39204							1
034_1_22	AATTGGACGTGTCAAACGCAACAAAGTCA	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	40	100	20	0	0	3	22	804	823							1
035_1_01	CAGCACTAGCCGCAACCGCTTGTATATTA	30	AF115102	Streptococcus thermophilus bacteriophage Sfi19, comp	40	96	24	1	0	1	24	5575	5552							1
035_1_02	TAGAATCAAGGAATCTGGATGAAGAATGA	30			34	100	17	0	0	2	18	348278	348294							1
035_1_03	ATATGAAGGAAATGATGAAGAATGA	30			38	100	19	0	0	10	28	11817	11835							1
035_1_04	TTTTGGGATCAACACGCACTGCTGACTTG	31			38	96	23	1	0	9	31	9890	9912							1
035_1_05	GTGGAGATGCCAATGTTTTCAATCCCTTG	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	60	100	30	0	0	1	30	15761	15732							1
035_1_06	GTATCAAAAGCGCATCATGAACGCGACT	30			36	95	22	1	0	8	29	1793935	1793914							1
035_1_07	AAAAACAATGAAATTCATATACGCGCTT	30			38	100	19	0	0	1	19	3352344	3352326							1
035_1_08	GCTTTTAACTGTTTTAAGAAATACCCCTC	29	AF158600	Streptococcus thermophilus bacteriophage Sfi11, comp	42	93	29	2	0	1	29	28309	28337							1
035_1_09	GTGACGCTGCAATGACTTGCATAGTAAT	30	AY196178	Streptococcus thermophilus bacteriophage kappa3 puta	52	97	30	1	0	1	30	652	623							1
035_1_10	ATACTGGTATATAGTAATCATACTTCATC	30			36	100	18	0	0	8	25	300114	300131							1
035_1_11	TTGGTGTTCATGAGTATGCTGTGCTGCA	30			38	100	19	0	0	5	23	1498	1479							1
035_1_12	CTGATTTGGCTTGTCTTTTGGCTCTTT	30			38	93	27	2	0	4	30	2590	12564							1
035_1_13	GCAGCACTGAGAACTTACGCTCCAGTGG	30			34	100	17	0	0	5	21	439582	439598							1
035_1_14	TGCTACTATGAGGACCGTGTGACTACTT	30			32	100	16	0	0	9	24	1956590	1956575							1
035_1_15	TCTTCTTAACTCTTTTTAAGTCAAGCTT	30			38	100	19	0	0	2	20	812942	812924							1
035_1_16	GTATCCATTAATATAGTACATTTCTATCA	30	AF115103	Streptococcus thermophilus bacteriophage Sfi21, comp	54	100	27	0	0	4	30	22787	22761							1
035_1_17	AGTAGAGAACCCAGCACACTGACTACTAC	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	60	100	30	0	0	1	30	10734	10763							1
035_1_18	CTTCGACGAAAGTTTATAGCAACCTCGC	30	AF115103	Streptococcus thermophilus bacteriophage Sfi21, comp	40	93	28	2	0	1	28	3575	3548							1
035_1_19	TGATAGAGCTAGAATGCTTTTACCGA	30			36	100	18	0	0	10	27	3827804	3827787							1
035_1_25	ATTGATTAATATGCAAGGATGCTTGT	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	60	100	30	0	0	1	30	1810	1781							1
035_1_26	GAGAAGTAGCCATTCGCGCCATTCGCGGG	30			38	100	19	0	0	10	28	1109646	1109664							1
035_3_01	CTGACGCTCTAGTCAGCAGCACTGACGACT	30	CP000420	Streptococcus thermophilus LMD-9 plasmid 1, complete	58	100	29	0	0	2	30	1008	980							1
035_3_02	TTGAGTTGGCTTTTTTAAACAACTC	30	U88974	Streptococcus thermophilus temperate bacteriophage C	42	96	25	1	0	3	27	22283	22307							1
035_3_03	GAATAACGCTAAAGAGCAGTTAAGAAGT	30	AF158600	Streptococcus thermophilus bacteriophage Sfi11, comp	54	100	27	0	0	1	27	27362	27388							1
035_3_04	TGTCGCGCTGCTCTATGACCGCTGAGTCT	30			36	100	18	0	0	3	20	399791	399808							1
035_3_05	GTTGACAGTTAAATATAGCTTACAGGAAA	30			36	100	18	0	0	8	25	993445	993462							1
035_3_06	GCTTCTGAATACAGAAACGCTTGTGACT	30			38	100	19	0	0	11	29	5029419	5029437							1
035_3_07	CCATATGATCAAGATGATGCTGTGCTGCA	30			34	100	17	0	0	4	20	34725	34709							1
035_3_08	ATGGAAGAACCAATTCAGCCGCAAGGCTC	30			36	95	22	1	0	5	28	577404	577425							1
035_3_11	AGTGTTTTCTGAACACCTTCAAGCTCAG	30			36	100	18	0	0	5	22	735	718							1
035_3_12	TTATATTTTTAAGCGCGCTAGTTTGGCT	30			36	100	18	0	0	6	23	3134047	3134030							1
036_1_01	ACTTACAGAGGATATCAACTAGCTTTAG	30			36	100	18	0	0	12	29	4142986	4143003							1
036_1_02	AAAATAGCACCA																			

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044_1_01	CAATAGTACCAGGAGTACCACTTCAATCA	30			36	95	22	1	0	7	28	450270	450249							
045_3_01	CCTTATCCGCAACTCCAGAGGGATCGGTA	31			38	100	19	0	5	23	663	681								1
046_3_01	TGCAATTCCTATTAGTCTTGACGCCCTTT	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	60	100	30	0	1	30	1002	973	1							
048_1_01	TTTAACTTTATCTTTTAAAGATGATT	30			38	96	23	1	0	6	28	1054784	1054806							1
048_3_01	GACCCAGAGTACTTATAAAGCAATCAT	30			34	100	17	0	4	20	255039	255055								1
048_3_02	CGGTTATACCGTAAGCGACAACTTGTTA	30	AY250830	Streptococcus thermophilus plasmid pND103, complete genome	60	100	30	0	1	30	960	931								1
048_3_03	TCTGACGGTTAGATAGTATTTTAACTGGTAA	30	AY699705	Streptococcus thermophilus bacteriophage 2972, complete genome	52	97	30	1	0	1	30	23182	23211	1						1
049_1_01	CCTAAATCATTTTCAACGAGTTGGGATA	30	AF348744	Streptococcus thermophilus bacteriophage DT1.1 host	58	100	29	0	2	30	637	609	1							1
049_1_02	AATAAATGCTATGATACAGGTGACGATA	30	CP000421	Streptococcus thermophilus LMD-9 plasmid 2, complete genome	60	100	30	0	1	30	1700	1671								1
050_1_01	AACATCTTCCACATCTACAAACAGGAAT	30	AF148566	Streptococcus thermophilus bacteriophage J1 putative	60	100	30	0	1	30	709	680	1							1
050_1_02	CTTGCAATAGACCCATTAAAGTCAATAT	30			34	100	17	0	14	30	23268	22374								1
051_1_01	CGTGGACGGTGGTGGGGTTTAAAGCCCG	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	50	97	29	1	0	2	30	11149	11177	1						1
051_1_02	AGCCCAAGTCAGACATCCGTCCGAAGC	29	AJ238049	Streptococcus thermophilus partial repA gene, ORF1 to	58	100	29	0	1	29	626	688								1
051_1_03	ATTGGGTTCCGTAAGAACAATAACCA	30			34	100	17	0	5	21	830	814								1
051_1_04	CACAAAATATCCGGTAGTTTTACTACT	30	AF348739	Streptococcus thermophilus bacteriophage DT2 host sp	48	96	28	1	1	28	1223	1250	1							1
051_1_05	TTTGACCGTTTATTAGCGTGGCTAAAGT	29	CP000421	Streptococcus thermophilus LMD-9 plasmid 2, complete genome	58	100	29	0	1	29	2608	2636								1
051_1_06	AATATCTACAGCTACTGAAAGCTACGCT	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	60	100	30	0	1	30	24847	24876	1							1
051_3_01	CATATCACCTCATATTCAGTITTTGATGA	30	AY250830	Streptococcus thermophilus plasmid pND103, complete genome	60	100	30	0	1	30	1219	1190								1
051_3_05	TGATGGACGAGACGGTATCCAGGAAACC	30	AY699705	Streptococcus thermophilus bacteriophage 2972, complete genome	48	96	28	1	1	28	20149	20176	1							1
051_3_06	TTTGGAAAAGGGCTTTTACTAATGATTA	30			38	100	19	0	2	20	183	165								1
051_3_07	ATATCTACGATGGCGAAGATTACAACATAG	31			36	95	22	1	0	4	25	18159	18180							1
051_3_10	TATTGAAACGAGCGTCCCTTTTAAAGCCATC	30			34	100	17	0	12	28	2858828	2858812								1
051_3_12	TGAATCTTCAATTTAACTCAGTTGGTAC	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, complete genome	52	97	30	1	0	1	30	34634	34663	1						1
051_3_13	AATAAATAAGTATACAGGCTCAAGGCA	30	AF115102	Streptococcus thermophilus bacteriophage Sf19, complete genome	46	96	27	1	0	1	27	1793	1819	1						1
052_1_01	TTAGATCTCATGAGTGGCGACAGTGAAGT	30	AY196178	Streptococcus thermophilus bacteriophage kappa3 putative	60	100	30	0	1	30	589	618	1							1
053_1_01	GCATTCATGGTITTTGGTATTTAAAGTAT	30	AF348736	Streptococcus thermophilus bacteriophage MD2 putative	60	100	30	0	1	30	920	891	1							1
054_1_01	GCTAGTGAAGCTACGAGGTTGGTAACTCT	30	AF348736	Streptococcus thermophilus bacteriophage MD2 putative	60	100	30	0	1	30	5562	5591	1							1
054_1_02	TAGTGTAAAGCGCTTAAAGCTACGCGATA	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	60	100	30	0	1	30	13255	13294	1							1
055_1_01	TATTTTATGATCATCTAGTCCGCTAAGCC	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	60	100	30	0	1	30	2603	2574	1							1
056_1_01	TGCTCTTATGCGGATGGACCTGTCTGTA	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, complete genome	40	100	20	0	2	21	9220	9239	1							1
056_1_02	AAGAAGATAAAGAAAAGTAAACACTACT	30			36	100	18	0	1	18	1046249	1046232								1
057_1_01	TAGTAAAGATCTGGGTTGATGTCTCGT	30	AM406671	Lactococcus lactis subsp. cremoris MG1363, complete genome	48	100	24	0	5	28	653138	653161								1
057_1_02	TTCTTTGGTTTATCCAAATGACACCCCT	30	AY250830	Streptococcus thermophilus plasmid pND103, complete genome	60	100	30	0	1	30	3451	3422								1
057_1_03	TCACATCTAGCGATAATCTGTTGCTTC	29			34	100	17	0	9	25	549382	549366								1
057_1_04	ATAGCTTCATTCGCGCTTTTAAATTTGACT	30			38	100	19	0	4	22	2727513	2727495								1
057_1_05	AACAAACAAAGCAATACAAACAGTAAACACC	30			36	92	26	2	3	28	2570839	2570864								1
057_1_06	CTAAACTCGTTTGAAGGTTCAACTCACTCT	30	U88974	Streptococcus thermophilus temperate bacteriophage C	40	93	28	2	1	28	28601	28574	1							1
057_1_07	GAGGTTGAATGATGAGTGACACCTATTTGT	30			32	100	16	0	2	17	14804	14789								1
058_1_01	AAAATTTGGTATGGCATGTTTATGCTGCTC	30	DQ665367	Turnip ringspot virus RNA1 polymerase gene, partial contig	42	100	21	0	1	21	350	370								1
058_1_02	ATGGAGGTGTAAGAAATACAGCCAGGAACT	30	AF177168	Streptococcus thermophilus plasmid pER36, complete genome	60	100	30	0	1	30	2044	2015								1
058_1_03	ACAGTAAGATACAGTATGATGAAITG	29	U88974	Streptococcus thermophilus temperate bacteriophage C	50	97	29	1	0	1	29	15007	15035	1						1
058_1_04	AAGACATATCTTTTAAACATCTGAAGAG	30	AY699705	Streptococcus thermophilus bacteriophage 2972, complete genome	60	100	30	0	1	30	16799	16828	1							1
058_1_05	TAAAGCTACTCGACAGCATGTTAATATC	30	AJ239949	Streptococcus thermophilus partial repA gene, ORF1 to	60	100	30	0	1	30	6243	6272								1
058_1_09	TGATAGATACATGCTGATGATGATAT	30			34	100	16	0	5	20	216	231								1
058_1_10	GAACAAGTAAAGGAGGAGTGAAGAGTCCG	31			34	100	17	0	15	31	1012	1028								1
058_1_11	ACGAGTGGGCTTACAGTACGAGCTGGATA	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, complete genome	60	100	30	0	1	30	38054	38083	1							1
058_1_15	GCCAGCATCGGAAATGGGCTTGTATCCG	30			36	100	18	0	12	29	1211371	1211388								1
058_1_16	TGCAAAAGCGGTTGCTGCTGCTGCTGGC	29	CP000473	Soilbacter ustulatus Ellin6076, complete genome	44	100	22	0	8	29	5218276	5218297								1
058_1_17	AGACATCCGCTTCTTGTTTAAAGCCAT	30			36	100	18	0	2	19	4041727	4041710								1
058_1_18	CTTGAATCTGCTTGAAGTATGATGCTGAT	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	60	100	30	0	1	30	24560	24531	1							1
058_1_19	CGAAGTTCGACAACTGGGAAATGGGATC	30			34	100	17	0	7	23	1909647	1909663								1
058_1_20	TAAAGAACTGCGGAGAACTAAAGCTG	30	AF348736	Streptococcus thermophilus bacteriophage MD2 putative	52	100	26	0	1	26	3621	3646	1							1
058_1_21	CTCACTAGTCCATATAGTGGGTTAGGGAA	29	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	42	93	29	2	1	29	24458	24486	1							1
058_1_22	TGATCTACACCTCAAAACGGTGAATGATC	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	60	100	30	0	1	30	226	255	1							1
058_1_23	GCACAAGTGTATAATTTCCACACAGCC	30			36	100	18	0	12	29	82603	82620								1
058_1_24	GCATACGGTGTAAACAACACCCACCC	29			36	100	18	0	1	18	2314931	2314948								1
059_1_01	GACGTTCAATGAAATTTCTTATCAGACAT	30	AY250830	Streptococcus thermophilus plasmid pND103, complete genome	60	100	30	0	1	30	1462	1433								1
059_1_02	TCTGACGTAAGAAATATCTCAAGGGT	30	AF177167	Streptococcus thermophilus plasmid pER35, complete genome	60	100	30	0	1	30	1175	1204	1							1
059_1_03	GGTGGCATGGAATTCATGACAAAGGAC	30			38	96	23	1	0	8	30	2132677	2132699							1
059_1_09	CAGTTTCAAATGCTCCACACCGATATTA	30	AF115103	Streptococcus thermophilus bacteriophage Sf21, complete genome	46	96	27	1	0	4	30	5508	5482	1						1
059_1_10	GTTCCGTTGACGTTGTTTATCTCAACT	30	AF020798	Streptococcus thermophilus bacteriophage lysogeny mix	52	97	30	1	0	1	30	2045	2016	1						1
059_1_11	ACATGTCATCATCTGATACGAGTCAAG	30			36	90	30	3	1	30	8004	8033								1
059_1_12	GGATTCACATTTATGCCACGGGTTGGTAG	30			38	100	19	0	4	22	3198	3180								1
059_3_02	CTAAGTGTGATGATGCTGACAGTCTACT	30	AF115103	Streptococcus thermophilus bacteriophage Sf21, complete genome	42	96	25	1	0	5	29	14213	14237	1						1
059_3_03	TATACCGCACTTCCATATCTACAAAGTCC	30			38	100	19	0	9	27	8304									

spacer identification (strain reference in Fig. 5, CRISPR locus, and spacer position from the leader end)	spacer sequence	spacer length	subject accession number	subject definition	bit score	% identity	alignment length	mismatches	gap opens	query start	query end	subject start	subject end	BLAST hit with S. thermophilus phages	BLAST hit with other viruses	BLAST hit with S. thermophilus plasmids	BLAST hit with other plasmids	BLAST hit with S. thermophilus chromosomal sequence	BLAST hit with other chromosomal sequences	No significant BLAST hit (bit score below 40.1)	
064_3_03	TGGTTATATAGAAAACCGCACTTGGATA	30	AJ239049	Streptococcus thermophilus partial repA gene, ORF1 to	100	30	0	0	1	30	1757	1786									
064_3_04	CTTGACTGACAAATGAGCAACATAGAGTA	31			36	95	22	1	0	3	24	104202	104181								
064_3_05	AAGTAATTTGTAATGCAATAATACAT	30			38	100	19	0	0	12	30	560595	560577								
064_3_06	AGTCTATGGGTTTAAATTTTGTATAA	29			38	100	19	0	0	5	23	4108876	4108858								
064_3_07	CAAAGCAGAGGCGTTTGGACCAATTTGT	30			36	100	18	0	0	2	19	61765	61782								
064_3_08	AGCTAGTGCCCTGAGCCTTCCCAATAAGGGA	30			38	100	19	0	0	5	23	182717	182699								
064_3_09	GCTAGCACCTTCAATTTCTTGTAAATATGA	30			36	100	18	0	0	6	23	3739	3722								
064_3_10	TAGAGGTAATGATGGTATTCGAGGTAAAG	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	42	100	21	0	0	7	27	29055	29075								
064_3_11	TTTGGGTTGGTAACTCCTGACGCGCAAT	30			32	100	16	0	0	1	16	158156	158171								
064_3_12	TATGGAAGTCCGGGAATGCAACCGCTTGA	30			32	100	16	0	0	6	21	3458176	3458161								
064_3_13	ATTTTATGCGGTTTAACTCCCTTTTAAAGT	30			36	95	22	1	0	7	28	3746	3725								
065_1_01	AACCCGGTGGTTATGGGCTTGAGGAGTGT	30			34	100	17	0	0	7	23	1455213	1455197								
065_1_02	ATATTAATAGCGAATCTACTGCTCAACGCTG	30			34	100	17	0	0	1	17	731224	731240								
065_1_03	TCATCTTCAAGTAAATACCACTGTCAGGG	30			34	100	17	0	0	9	25	259	243								
065_1_04	TTTTGCCAAAGTAAAGGAACTCTACGCTG	29			36	100	18	0	0	8	25	618041	618058								
066_2_02	GGTCAGATATTTATGTCTGCTGAATGTTGATA	36	AF115103	Streptococcus thermophilus bacteriophage Sf121, comp	64	97	36	1	0	1	36	23781	23746								
066_2_03	CTTCTCTCTATGTAATAATCTTTCATTTCAAG	35			38	100	19	0	0	17	35	3011259	3011241								
066_2_04	GTGACCTGTTTTAGCATTAAACAGCATGTCCAC	37			38	100	19	0	0	10	28	1946566	1946548								
066_2_05	CTTGGTGGTGAGATTTGCGAATTTCCAAAGACT	36			38	100	19	0	0	14	32	720156	720174								
066_2_06	ACCCTACTGGTTGTAGGTTATTTCCATAATCCTA	37			32	100	16	0	0	20	35	607	622								
066_3_01	ATAGATACTGTAAGTCCGGCTAATGGCTCA	30			36	100	18	0	0	13	30	2731961	2731944								
066_3_02	CACATAAATCAACGATGTTTTAAGGCAAGCT	30			34	100	17	0	0	5	21	2701209	2701225								
066_3_03	AAGTTTTAAGTATCCATCTTCGTCGCAACA	30	AJ242479	Streptococcus thermophilus res gene, ORF2 and ORF3	60	100	30	0	0	1	30	3190	3161								
066_3_04	TTGATATTACCTTTTGAAGTGGTATCTCTG	30			34	100	17	0	0	12	28	79	63								
066_3_05	CTAGGCTAGATATATAAGCAAACTATTGT	30	CP000024	Streptococcus thermophilus CNR21066, complete genome	60	100	30	0	0	1	30	731307	731336								
066_3_06	TATGGCATATAATCAGAAATACCCATTACAC	30	DQ512735	Clostridium botulinum neurotoxin type E gene, partial c	40	100	20	0	0	7	26	503	484								
066_3_07	GTTGAGTATTCGTTGTAACATGACAAGT	31			32	100	16	0	0	5	20	1697816	1697801								
066_3_08	ATGAGGTGAAATAAAGACCGCTTGTATCT	30			36	100	18	0	0	5	22	2246714	2246731								
066_3_09	ACACATGCTCTTCTTCAACCAATCGG	30	AF115102	Streptococcus thermophilus bacteriophage Sf19, comp	60	100	30	0	0	1	30	7026	7055								
066_3_10	GGCTAAATCGTTCTACGAGGCTTTTAT	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	42	96	25	1	0	6	30	11229	11205								
066_3_11	GCGTAAAGTCAAGCAACTAATAAGAAAT	30	DQ295022	Streptococcus thermophilus plasmid pSMO-316, comp	60	100	30	0	0	1	30	1157	1186								
066_3_12	AGCCTTTAGCCTAGTTTTTACATGACCGCA	30	AF115103	Streptococcus thermophilus bacteriophage Sf121, comp	56	100	28	0	0	1	28	10766	10739								
066_3_13	CTGAAAGCAGTAAAGCAACTCTACTTGGAACT	30			34	100	17	0	0	2	18	2316197	2316213								
066_3_14	CATTGATGGGAATTAAGTCAGCTTGGTT	30	U88974	Streptococcus thermophilus temperate bacteriophage C	60	100	30	0	0	1	30	23299	23328								
066_3_15	TTGAGAGTAACTGACATGCAATCTCAT	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	62	100	26	0	0	1	26	25529	25554								
066_3_16	CCTAATGCCAATGATTTTGAAGATTA	30	AF085222	Streptococcus thermophilus bacteriophage DT1, comp	62	100	26	0	0	5	30	3791	3816								
066_3_17	AATTACAAAGTCAAGTTGGCTGAAGAAAT	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	52	97	30	1	0	1	30	37869	37898								
068_1_01	AAGAAGCGTTAAATGCTTCAACTGAATAG	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	44	93	30	2	0	1	30	12103	12074								
068_1_02	AATTGCTAAACATCAAAAGACTTAACGGG	30			34	100	17	0	0	7	23	1464939	1464955								
068_1_03	GATGAGATTTGACTGATGATAAAGAGAAA	30	U88974	Streptococcus thermophilus temperate bacteriophage C	52	97	30	1	0	1	30	38326	38355								
068_1_04	GACATCGAAAGCACTTATAAATATTTTA	30	AJ242479	Streptococcus thermophilus res gene, ORF2 and ORF3	60	100	30	0	0	1	30	3196	3225								
068_1_05	TTTGAATTAACAACCTGATTTGATATC	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	60	100	30	0	0	1	30	18677	18706								
068_1_06	TGATAGCGTCAAAGTTTTTCCACTAATAGCG	31			38	100	19	0	0	13	31	1624415	1624397								
068_1_07	ATGAGTTTATGCAAAATGATAGATAGCT	30			42	100	21	0	0	1	21	193973	193975								
068_1_08	AGGTTATGAAAAAGCGCAACATGACTAGT	30	CP000514	Marinobacter aquaeolei V78, complete genome	38	93	27	2	0	4	30	40719	40745								
068_1_09	ATATAAGTCCCTTAAATATCCCACTA	30	U88974	Streptococcus thermophilus temperate bacteriophage C	64	100	27	0	0	1	27	41413	41387								
068_1_10	TTGCTCAAGAGATCTCTGTTGCCAAG	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	40	93	28	2	0	3	30	13171	13144								
068_1_11	TOCCATAGTTTAAATGAGTCGGTTAACTTA	30			34	100	17	0	0	1	17	4432369	4432353								
068_1_12	GTGACTAAAAGTGGCTAAGTTCAATAAGG	30			34	100	17	0	0	13	29	2596399	2596415								
068_1_13	ATATAGTGAATGATTCAGCTGCGGCGTAG	30			36	92	26	2	0	1	26	17531	17506								
068_1_14	AAAAGCAAACTCGGCAATATAAAGGATATA	29			34	100	17	0	0	12	28	1056898	1056914								
068_1_15	TTGCTAATAAATTAATCAATAGGACT	30	AY954970	Staphylococcus phage Twtot, complete genome	40	96	24	1	0	6	29	74620	74597								
068_1_16	TTATGATGAATGACATGGTTGATATAAGTA	30			36	92	26	2	0	1	26	18771	18746								
068_1_17	GAAAATTTCTGTTGTTCTTAATATTAGC	30			34	100	17	0	0	5	21	3926	3910								
068_1_18	TTTCTTAGGAATACCAGGAGTTCAGCTT	30	DQ437519	Streptococcus thermophilus plasmid p291 chaperone	60	100	30	0	0	1	30	200	171								
068_1_19	TGGCAGAGATTACACAGCAACGGAACAGC	30	AM279674	Streptococcus pneumoniae pSpnP1 plasmid	52	97	30	1	0	1	30	483	512								
068_1_20	GGGTATCATGATCTAGTGTAGGACCTGA	30			34	100	17	0	0	9	25	2938153	2938137								
068_1_21	TTTTGAAAATGCAACACGCGTTTGTATAG	30			38	93	27	2	0	1	27	22328	22354								
069_1_01	AGAAGCTTCCCAAACTCTTTAGCATTA	30	AY196178	Streptococcus thermophilus bacteriophage kappa3 puts	42	93	29	2	0	1	29	1124	1096								
069_1_02	TTAAGCTTTATCAAAATGATAGATAGCT	30			38	100	19	0	0	1	19	717024	717006								
069_1_03	CGTGTATGTTTATGAAATTAATAGTA	30	U88974	Streptococcus thermophilus temperate bacteriophage C	52	97	30	1	0	1	30	41197	41226								
069_1_04	GTTCTTCAAGCGTACGACAACTAATACAC	30			32	100	16	0	0	1	17	208623	208638								
069_1_05	CGCCGTAAGTCAAGCAACTTTATGAACCG	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	60	100	30	0	0	1	30	24121	24150								
069_1_06	TTTATTCCTTGGCAATACGTTCCACCTTT	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	52	97	30	1	0	1	30	19866	19837								
069_1_07	AGATTATAAGGAACACCACTCAATATAG	30			36	100	18	0	0												

spacer identification (strain reference in Fig. 5, CRISPR locus, and spacer position from the leader end)	spacer length	subject accession number	subject definition	bit score	% identity	alignment length	mismatches	gap opens	query start	query end	subject start	subject end	BLAST hit with S. thermophilus phages	BLAST hit with other viruses	BLAST hit with S. thermophilus plasmids	BLAST hit with other plasmids	BLAST hit with S. thermophilus chromosomal sequence	BLAST hit with other chromosomal sequences	No significant BLAST hit (bit score below 40.1)
075_1_06	30	AF153414	Lactococcus lactis plasmid pCIS3, complete sequence	60	100	30	0	1	30	3058	3087								
075_1_07	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	48	100	24	0	5	28	29051	29074	1							
075_1_08	30			34	95	21	1	0	3	23	387399	387379							1
075_1_09	29			36	100	18	0	12	29	1058742	1058725								1
075_1_10	30	X64346	Saimirine herpesvirus 2 complete genome	42	100	21	0	3	23	91557	91537		1						1
075_1_11	30			36	100	18	0	12	29	125816	125799								1
075_1_12	30			36	100	18	0	8	25	391103	391120								1
075_1_13	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	56	100	28	0	3	30	35035	35062	1							
075_1_14	30			36	100	18	0	12	29	389470	389453								1
075_1_15	30			60	100	30	0	1	30	2356	2385								1
075_1_16	30	AJ242479	Streptococcus thermophilus res. gene, ORF2 and ORF3	34	92	25	2	0	2	28	4085	4061			1				
075_1_17	30			34	100	17	0	7	23	4219426	4219442								1
075_1_18	30			36	100	18	0	6	23	2203700	2203683								1
075_1_19	30	AF115102	Streptococcus thermophilus bacteriophage Sf19, comp	54	100	27	0	1	27	9300	9326	1							
075_1_20	29			34	100	17	0	4	20	198050	198034								1
075_1_21	31	CP000439	Francisella tularensis subsp. novicida U112, complete g	40	100	20	0	4	23	496930	496911								1
075_1_22	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	44	93	30	2	1	30	27485	27514	1							
075_1_23	30	AF000425	Lactococcus lactis subsp. cremoris SK11, complete gen	44	96	26	1	0	3	28	1669005	1669030							1
075_1_24	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	52	100	26	0	1	26	20678	20653	1							
076_1_05	30			34	100	17	0	2	18	238763	238779								1
076_1_07	30			36	100	18	0	6	23	1634933	1634950								1
076_1_08	30	AF115103	Streptococcus thermophilus bacteriophage Sf21, comp	52	97	30	1	0	1	30	5763	5792	1						
076_1_09	30	AF085222	Streptococcus thermophilus bacteriophage DT1, comp	44	93	30	2	1	30	32610	32639	1							
076_1_16	31			36	100	18	0	9	26	89581	89598								1
076_1_17	30	AF115103	Streptococcus thermophilus bacteriophage Sf21, comp	56	100	28	0	1	28	18834	18861	1							
077_1_01	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	52	97	30	1	0	1	30	4984	5013	1						
077_1_02	30			38	100	19	0	3	21	1385117	1385135								1
077_1_03	30			38	100	19	0	1	19	922	904								1
077_1_04	30			36	100	18	0	10	27	1943380	1943397								1
077_1_05	30			34	95	21	1	0	7	1175	1155								1
077_1_06	30			34	100	17	0	13	29	314810	314826								1
077_1_07	30			34	95	21	1	0	6	26	176369	176349							1
077_1_08	30			36	92	26	2	0	3	28	4008	3983							1
077_1_09	30			34	100	17	0	14	30	13201	13217								1
077_1_10	31			38	100	19	0	13	31	1330501	1330483								1
077_1_11	30			34	100	17	0	7	23	929	913								1
077_1_12	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	52	97	30	1	0	1	30	34226	34255	1						
077_1_13	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	60	100	30	0	1	30	25511	25482	1							
077_1_14	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	44	93	30	2	1	30	39014	38985	1							
077_1_15	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	52	100	26	0	1	26	4120	4095	1							
077_1_16	29			36	100	18	0	4	21	329	346								1
077_1_17	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	44	93	30	2	1	30	27106	27135	1							
077_1_26	29			34	100	17	0	9	25	1387176	1387160								1
077_2_02	35			36	100	18	0	6	23	768026	768008								1
077_2_03	38			36	95	22	1	0	22	1351817	1351838								1
078_1_01	30	AF020798	Streptococcus thermophilus bacteriophage lysogeny mc	60	100	30	0	1	30	5606	5577	1							
078_1_02	30	AF085222	Streptococcus thermophilus bacteriophage DT1, comp	46	100	23	0	8	30	20830	20852	1							
078_1_03	30	AF115102	Streptococcus thermophilus bacteriophage Sf19, comp	60	100	30	0	1	30	8318	8347	1							
078_1_04	30			32	100	16	0	13	28	656	671								1
080_1_01	30	AJ242475	Streptococcus thermophilus repA gene for replication p	60	100	30	0	1	30	2257	2228				1				
080_1_02	30			34	100	17	0	8	24	1737565	1737549								1
080_1_03	31			36	100	18	0	2	19	20227	20210								1
080_1_04	30	AF115103	Streptococcus thermophilus bacteriophage Sf21, comp	50	100	25	0	1	25	18834	18858	1							
080_1_05	30			36	90	30	3	0	1	30	1546	1575							1
080_1_06	30	AF115103	Streptococcus thermophilus bacteriophage Sf21, comp	52	97	30	1	0	1	30	2966	2937	1						
080_1_07	30	CP000728	Clostridium botulinum F str. Langeland, complete gene	42	100	21	0	8	28	1525168	1525188								1
080_1_08	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	54	100	27	0	1	27	13430	13456	1							
080_1_09	29			38	100	19	0	3	21	360185	360203								1
080_1_10	30	AJ242479	Streptococcus thermophilus res. gene, ORF2 and ORF3	60	100	30	0	1	30	3324	3295				1				
080_1_11	31	AF085222	Streptococcus thermophilus bacteriophage DT1, comp	62	100	31	0	1	31	6588	6558	1							
080_1_12	30			36	100	18	0	13	30	2504008	2504025								1
080_1_13	30			38	96	23	1	0	1	23	2014	1992							1
080_1_14	29	AF115103	Streptococcus thermophilus bacteriophage Sf21, comp	42	100	21	0	1	21	18613	18593	1							
080_1_15	30			32	95	20	1	0	5	24	2090186	2090167							1
080_1_16	30			36	100	18	0	11	28	735733	735716								1
081_1_01	29	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	54	100	27	0	1	27	31160	31134	1							
081_1_02	30			34	100	17	0	1	17	815377	815393								1
081_1_03	30	AF115103	Streptococcus thermophilus bacteriophage Sf21, comp	44	93	30	2	1	30	36562	36591	1							
081_1_04	30			38	93	27	2	1	27	12216	12190								1
081_1_06	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	48	96	28	1	0	1	28	34234	34207	1						
081_1_07	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	48	96	28	1	0	3	25862	25835	1							
081_1_08	30			34	100	17	0	13	29	249615	249599								1
081_1_09	30	AF348738	Streptococcus thermophilus bacteriophage DT4 host sp	52	100	26	0	5	30	2119	2144	1							
081_1_10	30			36	100	18	0	13	30	738202	738219								1
081_1_11	30			34	100	17	0	8	24	1306									

spacer identification (strain reference in Fig. 5, CRISPR locus, and spacer position from the leader end)	spacer sequence	spacer length	subject accession number	subject definition	bit score	% identity	alignment length	mismatches	gap opens	query start	query end	subject start	subject end	BLAST hit with S. thermophilus phages	BLAST hit with other viruses	BLAST hit with S. thermophilus plasmids	BLAST hit with other plasmids	BLAST hit with S. thermophilus chromosomal sequence	BLAST hit with other chromosomal sequences	No significant BLAST hit (bit score below 40.1)	
088_1_06	TCTCATCTTTGGATTGCTCTCCAAAGT	30			34	100	17	0	0	5	21	701871	701887								
088_1_07	CAGCTTACATTAAGTACAGCTCGACGATCG	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	60	100	30	0	1	30	6293	6322	1								
088_1_08	TCCTACCACACTATTGAAACATGATATCAT	30			34	100	17	0	0	6	22	583409	583425							1	
088_1_09	CTTTCCTTATTAAAGCCCTATATCACCTTTA	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	60	100	30	0	1	30	9670	9641	1								
088_1_10	CGAATCTTAAATCAAGTGGCAAGCGGTATTG	30	AF115102	Streptococcus thermophilus bacteriophage SF19, complete genome	52	97	30	1	0	1	30	5513	5542	1							
088_1_11	AGTAAATAGCCCTCAGATATATAGACCC	30	DQ295022	Streptococcus thermophilus plasmid pSMO-316, complete genome	60	100	30	0	1	30	1592	1563			1						
088_1_23	GAAAGTGTCTTTTGAAGCATGTCAATGATA	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	60	100	30	0	1	30	23603	23574	1								
088_1_24	CAGCGAACCTAGCTAAATCAACAAGTGTCTG	30			36	100	18	0	13	30	151741	151724								1	
088_1_25	AGCTTTGAATATTTACAGCTGTATACCAA	30			34	100	17	0	0	7	23	225801	225785							1	
088_1_26	TCGTCCTATGATTTTACCGATGAAGTACG	30	AJ239049	Streptococcus thermophilus partial repA gene, ORF1 to ORF10	52	100	26	0	1	26	4573	4596				1					
088_1_27	CAACCATACGCAACCACTGCGATGTCTCAT	30			36	100	17	0	3	19	304844	304860								1	
088_1_28	ATTGACTAAACAGCTGTATAGTCTCGG	30			36	90	30	3	0	1	30	37751	37722							1	
088_1_29	ACGTTAGAGTTTATGTAAGCAACTTAT	30			34	100	17	0	14	30	1197113	1197129								1	
088_1_30	TTTTCAATATAGATAAACATAACTGACT	30			36	100	18	0	1	18	776559	776576								1	
088_1_31	TAATTCGACATAAGCACTACTATTATAT	30	AF115103	Streptococcus thermophilus bacteriophage Sf121, complete genome	52	97	30	1	0	1	30	18614	18585	1							
088_1_33	TGGTAACTCTTAGGTAAATCTCAGCTATTG	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	44	96	26	1	0	5	30	15024	14999	1							
088_1_34	ATGATTAGTTAGTTCCTGGGAAATCT	30	CP000393	Trichodesmium erythraeum IMS101, complete genome	42	100	21	0	1	21	3503898	3503878								1	
088_1_35	TCAAGATAAACTACTTAAAGGCTGTGTA	30			38	100	19	0	4	22	3736	3718								1	
088_1_36	AAATGAAGATATTTCCAAACCTCTGCTC	30	AJ242479	Streptococcus thermophilus res gene, ORF2 and ORF3	60	100	30	0	1	30	2260	2231				1					
088_1_37	AGTGAACGAAAGGTTTTCGTATAGATAG	30			36	100	18	0	2	19	711770	711753								1	
088_1_38	AAATTTGATGGTATTAACCTTAAACAGTT	30	AJ239049	Streptococcus thermophilus partial repA gene, ORF1 to ORF10	60	100	30	0	1	30	2066	2037					1				
088_1_39	TTGAATAGTTTAAATGAACCAAGCTATAC	30	U88974	Streptococcus thermophilus temperate bacteriophage C	60	100	30	0	1	30	42508	42537			1						
088_1_40	AAGTAGTACCGCTGGATGGATTAAGAAGC	30			36	100	18	0	1	18	2616976	2616993								1	
088_1_41	GGTATCTCCCAAGTGTTCCTGGGAT	30			38	100	19	0	2	20	1045	1063								1	
088_1_42	AATGTGCTTAACTTCTGATTCGGCGTTC	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	46	100	23	0	1	23	7437	7415	1								
088_1_43	TGCTTCGCTTAAAGTGTGATTCGCAATGC	30	AY699705	Streptococcus thermophilus bacteriophage 2972, complete genome	52	97	30	1	0	1	30	10092	10063	1							
088_3_01	TGTAAAGCAGCTACACCGTGAACCTTACGA	30	AF348736	Streptococcus thermophilus bacteriophage MD2 putative	60	100	30	0	1	30	3966	3995									1
088_3_02	ACGAGCTTTGCTTGAAGCTTTCGCAATA	30			32	100	16	0	1	16	1090	1073								1	
088_3_03	ATTAAAGATAAGAGGAGCAAGCATAAA	30	BA000016	Clostridium perfringens str. 13 DNA, complete genome	40	100	20	0	4	23	1312861	1312680								1	
088_3_04	ATAGTACTGTAAGGCTCTTAATGGCTCA	30			36	95	22	1	0	22	1735036	1735015								1	
088_3_05	TGTAATTAAGAAGAAACAGAAACAAAAT	30	AP009179	Sulfurovum sp. NBC37-1 genomic DNA, complete genome	40	100	20	0	8	27	457898	457879								1	
088_3_06	AGATACATATAGCAGACATACACATAATGAT	31			36	95	22	1	0	22	111805	111784								1	
088_3_07	TTGATCCGGTACTACCTTTCCTGCGT	30			38	90	19	0	2	20	2279284	2279266								1	
088_3_08	TAGAGGTAATGATGGAATTCGAGTAAGGA	30			38	96	23	1	0	5	27	29776	29798							1	
088_3_09	TGAATCTTCAACTTTACTCAGCTGATAC	30			36	90	30	3	0	1	30	867	896							1	
088_3_10	CGAAGCTGTGATGAATGCTACTGACTGTT	30	AF442520	Streptococcus thermophilus bacteriophage k3 putative	54	100	27	0	4	30	1103	1129	1								
088_3_11	GAGCAAAAGGGGGTATTCGGTAAAGT	30	AJ242475	Streptococcus thermophilus repA gene for replication p	48	100	24	0	5	28	2634	2611				1					
088_3_12	CGAATTTCTGCTTATTTTCTGATATCA	30			36	100	18	0	11	28	217	200								1	
088_3_13	TTACACATTTTCAAGTATTTTAAAAATTC	30	AF323669	Bacteriophage bil286, complete genome	50	100	25	0	1	25	35984	36008			1						
088_3_14	GAAACAGAACTTATGAAGTCGAAAACCGA	30			36	100	18	0	2	19	1583354	1583337								1	
088_3_15	CAACCCAGACATGAATGCTATTAGATATG	30	AY699705	Streptococcus thermophilus bacteriophage 2972, complete genome	42	100	21	0	2	22	21347	21367	1								
089_1_01	TTTTTAAATCCGCTGATGCTATATAT	30	DQ417610	Streptococcus thermophilus plasmid p139 crRNA region	60	100	30	0	1	30	257	222								1	
089_1_02	AATCCAACTTTTCAATAAATCCCTCCA	30			36	100	18	0	8	25	2417782	2417799								1	
089_1_03	CATGCTTCACTGCTGCTGACATGAT	30			36	90	30	0	1	30	25019	2499								1	
089_1_04	TGGAAGGGGTGTCTAGTGAAGAAATGTCG	30	AJ239049	Streptococcus thermophilus partial repA gene, ORF1 to ORF10	60	100	30	0	1	30	4847	4876								1	
089_1_05	CTCGAAGCGCTTCAATGCCCTATCTTCTTC	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	46	100	23	0	8	30	9013	8991	1								
089_1_06	ATGCTTAAGTATCCACTCGTGAATACAT	29			36	100	18	0	9	26	1855869	1855852								1	
089_1_07	ATTTAATGAATAATTCATCAACCGCAGT	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	60	100	30	0	1	30	31597	31626	1								
089_1_08	TAGAGGTTATATCTGATGGAATCGATG	30			36	100	18	0	13	30	1684364	1684381								1	
089_1_09	TGGCGAATAGAGAGCCAAATGGCAAGCAAG	30			32	100	16	0	15	30	1248870	1248855								1	
089_1_10	AGAGACCAATAAATCTGAGAAAAGCAAG	30			36	95	22	1	0	9	891884	891863								1	
089_1_11	AAATGGCTGTTAATGTTAATGTCGAAAGC	30	AF115103	Streptococcus thermophilus bacteriophage Sf121, complete genome	60	100	30	0	1	30	23786	23815	1								
089_1_12	CAATTTGATCTAAAATCTGTTGACACGTTA	30	AF115103	Streptococcus thermophilus bacteriophage Sf121, complete genome	60	100	30	0	1	30	7239	7268	1								
089_1_13	TCTTCGTTATACACGCTTCTACAGCTTG	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	44	93	30	2	0	1	30	34590	34561	1							
089_1_14	GAATTCCTCAATGAAACCACTTCAAGCAAC	30	AF348744	Streptococcus thermophilus bacteriophage DT1.1 host	48	100	24	0	3	26	791	768	1								
089_1_15	CAAGGCACTCAACCAACCAAAATGACCC	28	CP0000421	Streptococcus thermophilus LMD-9 plasmid 2, complete genome	48	96	28	1	0	1	28	1280	1253							1	
089_1_16	CTAAATCGTAAATGGTAAAGTTCGACGACT	30	AF115103	Streptococcus thermophilus bacteriophage Sf121, complete genome	52	97	30	1	0	1	30	14752	14781	1							
091_1_15	TGCTTGGATGTTGATGCACTGCATATGATA	30			38	93	27	2	4	30	15642	15616								1	
091_1_16	AATGACCGGAATGGCTGATCTGCACAT	30	AF442521	Streptococcus thermophilus bacteriophage k3 putative	60	100	30	0	1	30	634	605	1								
091_1_17	TTTCAATATCTCACTTTTCTGCTGCTATTC	30	AF115103	Streptococcus thermophilus bacteriophage Sf121, complete genome	60	100	30	0	1	30	26836	26865	1								
091_1_18	TGTGCAAAATTTCACTGCTGACAGAC	30	AY699705	Streptococcus thermophilus bacteriophage 2972, complete genome	52	97	30	1	0	1	30	140	111							1	
091_1_19	CACAAATTAATGATGCAATAGCAATGCT	30	U88974	Streptococcus thermophilus temperate bacteriophage C	42	96	25	1	0	6	30	34315	34339							1	
091_1_20	AATTCGTGAATAAATCAAAAGCAAAATA	30	EF507512	Borrelia lonestari clone pBLS1108 putative NhaC gene	44	100	22	0	9	30	536	515								1	
091_1_21	TAACATTTCTGCACTTTCTTCTTGATGC	30			36	100	18	0	10	27	34444	34461								1	
091_1_01	CGAATGCTACCTGAGGATTTTACCTATGGA	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	52	100	26	0	5	30	29394	29419	1								

spacer identification (strain reference in Fig. 5, CRISPR locus, and spacer position from the leader end)	spacer sequence	spacer length	subject accession number	subject definition	bit score	% identity	alignment length	mismatches	gap opens	query start	subject start	subject end	BLAST hit with S. thermophilus phages	BLAST hit with other viruses	BLAST hit with S. thermophilus plasmids	BLAST hit with other plasmids	BLAST hit with S. thermophilus chromosomal sequence	BLAST hit with other chromosomal sequences	No significant BLAST hit (bit score below 40.1)		
101_2_03	TCTTTGTGCCAAAACTCAACAAATTTTCCATTTAA	37	U88974	Streptococcus thermophilus temperate bacteriophage C	74	100	37	0	1	37	2698	2662									
101_2_05	ACCAAAATATCTCACATAAATTCATTAATTTACCTC	37			36	100	18	0	19	36	5289	5272								1	
104_1_01	ACGTCGTCTAACTGGAAAGTACCTGCTAAT	31			34	100	17	0	10	26	2116044	2116028								1	
104_1_02	CTGTTCTCTAATCGAAGGCGCGTGAITGA	30			32	95	20	1	7	26	21008	20989								1	
104_1_03	AAACCTCACTAGTCACTTAGTGGGGTAGG	30	AF085222	Streptococcus thermophilus bacteriophage DT1, comple	60	100	30	0	1	30	24454	24483	1								
104_1_04	TATTAAGTTTAGTCCCGATGCTTCTGCTG	30	AJ239049	Streptococcus thermophilus partial repA gene, ORF1 to	60	100	30	0	1	30	4393	4422								1	
104_1_05	AAACCAATAAACATACCGATTTGCTGCCAAT	30	CP000419	Streptococcus thermophilus LMD-9, complete genome	60	100	30	0	1	30	907457	907486								1	
104_1_06	GCAACGTGTAGCCAGGAAAGCATCAAGAA	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	60	100	30	0	1	30	4914	4943	1							1	
104_1_07	AAGAGCAAAAAATAACTCTAGCTCTGCTCG	30			36	100	18	0	4	21	138684	138701								1	
104_1_08	AAGAACCCTCTAAGTGGACATTTAATGAT	30	CP000713	Psychrobacter sp. PRwf-1, complete genome	40	96	24	1	5	28	2322596	2322573								1	
104_1_09	ATAATGTTTAAACCTCTTGAACCTCTG	29			38	95	23	1	1	22	1069482	1069503								1	
104_1_10	ACGTTGATGAATATTTGTTAAACCTTTA	29	AF115103	Streptococcus thermophilus bacteriophage Sf21, comp	42	93	29	2	0	1	29	20745	20773	1							
104_1_11	CAAGAGTGAACAAAGTACACCGCTGGAAT	30			34	100	17	0	14	30	4670947	4670931								1	
104_1_12	GACAGCAAGTACACAGTGTGATGAATG	30	U88974	Streptococcus thermophilus temperate bacteriophage C	60	100	30	0	1	30	15006	15035								1	
104_1_13	TAAAGAACTCAACGAGATTTTAGCGCAACA	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	60	100	30	0	1	30	2988	3017	1							1	
104_1_14	TAAACCAATAAATACAGTGAAGCAACAAT	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	60	100	26	0	5	30	15555	15580	1							1	
104_1_15	CAGGCGTAAGGTATGCTAATATATAACGAT	29	AY312234	Streptococcus thermophilus plasmid pSMQ308, comple	50	97	29	1	0	1	29	2813	2841								1
104_1_16	GCTATCGAATAAAGCTTACAGCAACTCA	30			36	100	18	0	11	28	26000	25983								1	
104_1_17	GTGGAATATTAAGCCCAAGATTTGTGACGCA	30			34	100	17	0	5	21	10094	10078								1	
104_1_18	TATTGCAATATTGCGTTGGGAAACCTTC	30			34	100	17	0	7	23	501	485								1	
104_1_19	CGTCTGTCTAATCGAAAGTACCGGCTAAT	30			32	100	16	0	11	26	1040221	1040236								1	
104_1_20	AAAGAGATGACCCATCCATTAACAGCT	30			34	92	25	2	5	29	1990486	1990462								1	
104_1_21	GGGAGTGTATTCTTACATCAAAACAATG	30			34	100	17	0	7	23	18807	18823								1	
104_1_22	CATCAAGTTGAAAAGGACTACAAAGCGCC	30			36	100	18	0	8	25	2521302	2521319								1	
104_1_23	CTTAATTTAGAGCGTGGGATCTTGAATAT	30	AY682165	Lactobacillus plantarum bacteriophage LP65, complete	40	100	20	0	2	21	7721	7702								1	
104_1_24	ATATCCGATGGCAGCATCTGAAACTGGCTG	30			34	100	17	0	9	25	300033	300049								1	
105_1_01	ACGTCGTCTAAGTGGAAAGTACCTGTTAAT	31			34	100	17	0	10	28	2116044	2116028								1	
106_1_01	TAAAGCAAGCTCTGCTGCTGCTCTCTA	30	AY312234	Streptococcus thermophilus plasmid pSMQ308, comple	60	100	30	0	1	30	5924	5985								1	
106_1_02	AATAGAAGGCTAAGTATGATGAAGGATA	30			62	100	16	0	10	25	4773	4788								1	
106_1_03	CTATCTACAGTCCACCATGACCTTATCT	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	60	100	30	0	1	30	6494	6465	1							1	
106_1_04	ATAAATGGCTGAGGATGCCCTAAAGGGA	30			60	100	16	0	4	19	1198112	1198127								1	
106_1_05	ATAGCTTCCAAACCTTATCTGGCTCATCT	30			38	100	19	0	1	19	5290	5272								1	
106_1_06	CAGATGTGCTCAAAAATACCAAGATGAT	29	AF115103	Streptococcus thermophilus bacteriophage Sf21, comp	50	97	29	1	0	1	29	610	638	1						1	
106_1_07	CTTAGATGAGGTTTCCCAACGGAAACATG	30			36	90	30	3	0	1	30	2027	2056							1	
106_1_08	TATCCTCTGTTGATAAATGCTTAATCT	30			36	100	18	0	7	24	199910	199927								1	
106_1_09	TTGATAGCAAAACACTTCTGTGAGCAGC	30			36	100	18	0	2	19	5358	5375								1	
106_1_10	TGCTTCTCAAAAGAGCTATGCTTGTTA	30	U88974	Streptococcus thermophilus temperate bacteriophage C	44	93	30	2	0	1	30	19359	19388	1						1	
106_1_11	TGATACTAAAAAGAGCCCTTTGGGTAA	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	52	97	30	1	0	1	30	9192	9221	1						1	
106_1_12	GGGCAATGATCGGTAAAGTTTGGCTGATG	30			34	95	21	1	6	26	14226	14246								1	
107_1_01	GAAATGTGCGGCTAACAAGGCTCTCCTT	30	AJ239049	Streptococcus thermophilus partial repA gene, ORF1 to	60	100	30	0	1	30	4867	4896								1	
107_1_02	TAGAAGGAAATCATCAATGAGTAAAGA	30			38	100	19	0	3	21	4745	4727								1	
107_1_03	ATTTAAGTATATAGTCTGCTGCTGGTT	30			36	100	18	0	2	19	747880	747863								1	
107_1_04	TGCTTATCAGAAAAATTCGCCAAGCTG	30			36	100	18	0	2	19	1197806	1197789								1	
107_1_05	ATGACAAATTTGTAATATGAACTCAAG	30			36	100	18	0	3	28	173222	173209								1	
107_1_06	CCTATATGGTTGTACAGACACTCAATG	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	62	97	30	1	0	30	20067	20095	1							1	
107_1_07	TAAACAGTATATAAGAAATACCAAGG	31	CP000003	Streptococcus pyogenes MGAS10394, complete genom	40	100	20	0	2	21	1113501	1113520								1	
107_1_08	TTATGAAGGAAATATAAATGATTAAGG	31			36	95	22	1	0	2	1029483	1029504								1	
107_1_09	CAAGAGTCTATTGAGCATTACAGAGCTGATA	31			34	100	17	0	11	27	899	905								1	
107_1_10	CATAGCTCTTATTTTGAATAAAGGGTGA	30	CP000487	Campylobacter fetus subsp. fetus 82-40, complete genom	42	100	21	0	6	26	1589617	1589597								1	
107_1_11	GATTAATTCGCTGATGATCGGCTGAGCT	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	52	97	30	1	0	1	30	10166	10137	1						1	
107_1_12	GACAATTTAGTACAGTATTTGGCTGCT	30			36	92	26	2	0	1	26	6412	6387							1	
107_1_13	AGAAATCATGATAAGTGGCTGAAACTGT	30			38	100	19	0	2	20	2484247	2484229								1	
107_1_14	AGTCACTACTATGTTAAATTAAGACGCA	30			34	100	17	0	7	23	3666882	3666866								1	
107_1_15	GACTTGAACCTGAATTAATCAAGGTAGCCA	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	64	100	27	0	4	30	6633	6607	1							1	
107_1_16	TGACTCTATTGATGCTTCATCTTTATTA	31			36	100	18	0	5	22	1632806	1632789								1	
107_1_17	CTTTCAAGATACTCAACCATGATGATGCA	30			34	100	17	0	12	28	1106361	1106377								1	
107_1_18	AAAGGTGCGTATGAACTCATCCAGCGGG	30			34	100	17	0	12	28	808	792								1	
107_1_19	CTATGCTTACTGTTCTTCCAAACCCACC	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	60	100	30	0	1	30	25325	25296	1							1	
107_1_20	TTTGTTCGCTTCACTTAGTTTACTAGG	30	AF348736	Streptococcus thermophilus bacteriophage MD2 putativ	52	100	26	0	1	26	6041	6016								1	
107_1_21	AATACGGAACCTCCCTTCCGCTCACTAGC	30			36	100	18	0	1	23	1643259	1643276								1	
107_1_22	CAAGATTTATTAATTAAGATGCTTCTG	30	AF348738	Streptococcus thermophilus bacteriophage DT4 host sp	40	93	28	2	0	1	28	2435	2462	1						1	
108_1_01	AATCTGTGTGGAAGTAAAGATTGAAGAT	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	60	100	30	0	1	30	14782	14753	1							1	
108_1_02	ATATGTTTGAAGTATACCCATTAATTTG	30			38	96	23	1	0	8	807	889								1	
108_1_03	TCCACATGATAAAGGCAAGCCAGCAAGCT	29			34	100	17	0	8	24	1696143	1696159								1	
108_1_04	GAAGCAAAAATTTGCAACTGAGCTTCTTC	30			36	100	18	0	5	22	2662653	2662670								1	
108_1_05	ATTAATTTAAGTTGAAATGTTGCTTTTC	30			36	100	18	0	5	22	3270685	3270702								1	
108_1_06	GCAGACATTTGGCTCAAAAGTATGATGAA	30	AF115102	Streptococcus therm																	

spacer identification (strain reference in Fig. 5, CRISPR locus, and spacer position from the leader end)	spacer sequence	spacer length	subject accession number	subject definition	bit score	% identity	alignment length	mismatches	gaps	query start	query end	subject start	subject end	BLAST hit with S. thermophilus phages	BLAST hit with other viruses	BLAST hit with S. thermophilus plasmids	BLAST hit with other plasmids	BLAST hit with S. thermophilus chromosomal sequence	BLAST hit with other chromosomal sequences	No significant BLAST hit (bit score below 40.1)
112_1_02	ACGACATTCCAGATGGAGCTGACCAAGATT	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	56	100	28	0	1	28	22557	22584								
112_1_03	TTCTCAGCCAGTATGCTAATTTGGTATGT	30			34	100	17	0	12	28	1466830	1466814								
112_1_04	GAGAAATCACGAAATATAAAAGACTTTT	30			34	100	17	0	9	25	450532	450516								
112_1_05	AGATAGCCACCAAGCGTTTCAGTATGCTA	30	AF115102	Streptococcus thermophilus bacteriophage Sf19, complete genome	60	100	30	0	1	30	15099	15070								
112_1_06	TACTTGAACACCCCTCAATCCCTTTGATGA	30			38	93	27	2	0	4	30	15272	15246							
112_1_07	TTTTAGCTTCAGTCTGTTTCAATGTATAT	30			32	100	16	0	7	22	1977	1962								
112_1_08	AAGTCTATACCCATAATATAGCTGAACCCG	30	DQ295022	Streptococcus thermophilus plasmid pSMQ-316, complete genome	50	100	25	0	6	30	3483	3507								
112_1_09	ACATGCTGTATGTTTGGTATTTAGTAAACA	30			38	100	19	0	12	30	132341	132323								
112_1_10	GAGTTGGTGACCATTGACCCACTTATTT	30			34	100	17	0	1	17	3453040	3453056								
113_1_01	TTGAAAATGAAAAATACCCCTGGAACCGA	30			38	100	19	0	1	19	61231	61249								
113_1_02	GTGTCACCGCTTTGCTATTTATTCGGGA	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	44	100	22	0	1	22	11958	11937								
113_1_03	CITTTTTCGGCTTTGACCACTCGGAAC	30			34	100	17	0	9	25	376629	376613								
114_1_01	ACGTAAGGATTTTTTTTATTTCTTGTTA	30	CP000421	Streptococcus thermophilus LMD-9 plasmid 2, complete genome	46	97	31	0	1	30	2147	2177								
114_1_02	GTGAAAATTTTCAACCCCTACATATACAA	30	CP000421	Streptococcus thermophilus LMD-9 plasmid 2, complete genome	52	97	30	1	0	1	915	886								
114_1_03	CCTCTGTAATGACTTAAACGGCTCGTTTT	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	40	93	28	2	1	28	12444	12417								
114_1_04	AAATCAAAGTTTGGGTTGTGCTACGCTG	30	CP000675	Legionella pneumophila str. Corby, complete genome	40	100	20	0	1	20	2666702	2666683								
114_1_05	ATATGTACATACCTAAGAAACACCGGGCA	30			34	100	17	0	12	28	345180	345164								
114_1_06	CGTTGTCAAATATGTGATTCATTTGATTT	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	42	93	29	2	0	2	31294	31266								
114_1_07	CCATAGCTGAATGTGTTTGTGACTGCTT	30	AJ239049	Streptococcus thermophilus partial repA gene, ORF1 to ORF10	60	100	30	0	1	30	5473	5444								
114_1_08	CCTAGGTTTGGCTTTAAGTATAACAAGCT	30			36	95	22	1	0	5	26	1483900	1483921							
114_1_09	AAATGACGCTCAAGGACGCTTGAAGCAT	30			36	92	26	2	0	5	30	3220	3245							
114_1_10	TTTTTAAAGCTGTAGCGCTTTAGCTTTG	30			34	100	17	0	12	28	1710922	1710938								
114_1_11	TTGGCTTCGTAATAATTTTAAACGCGAT	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, complete genome	52	97	30	1	0	1	30	28172	28143							
114_1_12	GTGTGAATCAATACGCTGAACACACTCC	30			32	95	20	1	0	6	25	5060524	5060543							
114_1_13	CGTATCAGTTGAAAGTTTCAACGTGTAAG	30	U88974	Streptococcus thermophilus temperate bacteriophage C	60	100	30	0	1	30	31597	31568								
114_1_14	TAAACTATGTTGGCTATCTGCTCGAGGAA	30			38	100	19	0	1	19	1434	1452								
114_1_15	TAGACCACTAGCGAGTTTGTCTTTTGG	30	CP000421	Streptococcus thermophilus LMD-9 plasmid 2, complete genome	60	100	30	0	1	30	2994	2985								
114_1_16	ACATCGCACTTCTGGGTTTTCACCGCTG	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	52	100	26	0	5	30	2966	2941								
114_1_17	AGTATGGCTATTGGCTGATACCTACCCAC	30	CP000419	Streptococcus thermophilus LMD-9, complete genome	60	100	30	0	1	30	1570034	1570063								
114_1_18	CGCTTTCAGCTGGCTGGTACATCTACGC	30	AY699705	Streptococcus thermophilus bacteriophage 2972, complete genome	60	100	30	0	1	30	22759	22788								
114_1_19	GAGTACATGGAGTTTCTGCTAGATACATA	30			34	100	17	0	7	23	79	63								
114_1_20	TAAATGTAATATAAAGTTATGTCTA	29	AY699705	Streptococcus thermophilus bacteriophage 2972, complete genome	54	100	27	0	3	29	33025	33051								
114_1_21	AACGTTATGACATTTAGGAGCTTCCAAAT	30	CP000421	Streptococcus thermophilus LMD-9 plasmid 2, complete genome	44	93	30	2	1	0	810	781								
114_1_22	ACACAGCAAGCAAAAGGATGACACTTT	29			32	100	16	0	6	21	5215550	5215535								
114_1_23	CAACCAAACTTACGCTACAGTACATCTG	30			36	100	18	0	10	27	2462817	2462834								
114_1_24	ACACGCGCTTACCTCGTATATCAAAATCA	29			32	100	16	0	2	17	33096	33111								
114_1_25	TGCCCGAACTAGGATACACACAGCAT	30	AY312334	Streptococcus thermophilus plasmid pSMQ308, complete genome	52	97	30	1	0	1	30	7613	7642							
114_1_26	CTCAAGCTTCTCATCTGTGATAGTGGTTT	31			36	100	18	0	10	27	1153187	1153204								
114_1_27	ATCACTTTTATAGTATCTCAAACGCTGG	30			34	100	17	0	9	25	1159329	1159345								
114_1_28	GAACAGCTCAGACAGCTAATTCGCCAAT	30			34	100	17	0	13	29	3909	3925								
114_1_29	ATATTTGAAAGATACAAGGACACTTACAC	30			36	100	18	0	2	19	130428	130411								
114_1_30	CGCGATGAAACACAACCTCAATTTGATTC	30			36	100	18	0	11	28	504213	504196								
115_1_01	TACTGAGTTAGCTGTGGAAGCTCATTTTC	30			34	100	17	0	3	19	26820	26804								
115_1_02	CTTTCGCTGAAAGCTTCTGCTGCTGCTG	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	52	100	17	0	4	26	1128298	1128304								
115_1_03	CTGCAATTTGTAACGACTTCTTGGCTGT	30			34	100	17	0	5	25	15627	15603								
115_1_04	ATAACTCGAATGCTAAGCTTCAACGAAGCT	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	60	100	30	0	1	30	20206	20235								
115_1_05	AATTTGCTCAGCACTTCAACCAACCGCCAG	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	50	100	25	0	6	30	28491	28515								
115_1_06	ATAAAATTTGCGCAGCTTTGGGCACTAGAT	30			34	100	17	0	4	20	1753534	1753550								
115_1_07	ATGCTCTGAGGCTGTAGTAATTAAGTTGT	30			34	100	17	0	2	18	174298	174282								
115_1_08	CITTTAAGAGTTGATTAAGTGGCTTACTGT	30			36	100	18	0	4	21	137362	137379								
115_1_09	AAATGGGTTATGCTGTTCAAATGCGTCCC	30			38	100	19	0	12	30	1467704	1467686								
115_1_10	AAACTGAAACAAACACAGCAATCAACAA	30			38	96	23	1	0	1	23	7114	7136							
115_1_11	GCCCAAAATGCTAGACGTTTGAATGACGGC	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	60	100	30	0	1	30	17895	17924								
115_1_12	ATGAAAGACGTTGACTTCACTACCGTATGCT	30			34	100	17	0	6	22	1277449	1277465								
115_1_13	GCTTTGCGAATGCTCTCAGTGGCGAATTT	31	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	40	93	28	2	4	31	3974	4001								
115_1_14	TATTTATGCAAAATGGTATCCATATTTTA	30			38	100	19	0	11	29	2342469	2342451								
115_1_15	CCTCAAAGCTTAAAATGGGCTGAAGTAGA	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	48	96	28	1	0	3	19256	19229								
115_1_16	TATTTAGCACTACGGTATCAGGTTATCTC	30	AY699705	Streptococcus thermophilus bacteriophage 2972, complete genome	60	100	30	0	1	30	8162	8133								
115_1_17	AAGGGTTAAGCTCTCATAGAGTGGAAAA	30			34	100	17	0	6	22	21439	21455								
115_1_18	GCAATTTATCGCTTGAAGTACTACAGTTT	30			34	100	17	0	3	19	5567	5551								
115_1_19	TGCTACGCTCTGGAAGCTTCTGCTATGAC	30	AF085222	Streptococcus thermophilus bacteriophage DT1, complete genome	38	100	19	0	1	19	1749958	1749941								
115_1_20	CTTAGCTTTGAAATGGCAGCTAGTGAACGA	31			34	100	17	0	5	21	1294441	1294457								
115_1_21	GGTGGGTGACGCTCAACAGCACTGAA	30			34	100	17	0	14	30	1317267	1317283								
115_1_22	GATGGCGCTACACATACACTACGCTACGCT	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	56	100	28	0	3	30	31442	31469								
115_1_23	TATTCGAGAAGTGAAGAACCAATCATCGA	30			34	100	17	0	4	20	476566	476582								
115_1_24	TACTTTCGAGCGTGAAGAAGCTACTACTA	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	40	93	28	2	3	30	12870	12897								
116_1_01	GTGTTTCATGAGCTTTTATATCAACGCTG	30	AF145054	Streptococcus thermophilus bacteriophage 7201, complete genome	34	100	17													



spacer identification (strain reference in Fig. 5, CRISPR focus, and spacer position from the leader etc)	spacer sequence	spacer length	subject accession number	subject definition	bit score	% identity	alignment length	mismatches	gap opens	query start	query end	subject start	subject end	BLAST hit with S. thermophilus phages	BLAST hit with other viruses	BLAST hit with S. thermophilus plasmids	BLAST hit with other plasmids	BLAST hit with S. thermophilus chromosomal sequence	BLAST hit with other chromosomal sequences	No significant BLAST hit (bit score below 40.1)
118_1_10	TAAGGGAGACAGGACAAAGCAAAACAC	30			36	100	18	0	0	6	23	1162	1145							1
118_1_11	TTTTGAAACTAAAGCCAAACAGTACTGAC	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	60	100	30	0	0	1	30	4455	4484	1						
118_1_12	TATTTTCAATCGTCCGGTATCTGCTAGA	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	60	100	30	0	0	1	30	28478	28449	1						
118_1_13	GGGAGAAAATTTGGCAAAATGATGGAACAT	30			36	100	18	0	0	11	28	3766588	3766571							1
118_1_14	TCATTCCGAGGTAAACGATGGTAAACAAGGAC	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	60	100	30	0	0	1	30	19908	19937	1						
118_1_15	CAACACCGTAGAACATTAACAAGTACGTG	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	48	100	24	0	0	7	30	9090	9113	1						
119_1_01	TAAATTTAATATATCCCATCGACTG	30			38	100	19	0	0	1	19	4818930	4818948							1
119_1_02	GGATAAGGGCAGACAAAGCAACTTAAGCA	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	44	96	26	1	0	5	30	20175	20200	1						
119_1_03	GGGACCATGTAAACCCGGTAAAGATAGCG	29			34	100	17	0	0	10	26	37	53							1
119_1_05	CGCTATGAATGCTGATTAAGACCTTTTAA	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	48	96	28	1	0	3	30	7338	7365	1						
119_1_06	GACTTAGGCCCTACCCCTTAAATAAGCA	30			38	100	19	0	0	6	24	1834897	1834879							1
119_1_07	ATCATATAAGGAAAGACAGAAATATTCTA	30			38	100	19	0	0	9	27	1698087	1698105							1
119_1_08	AACTATGGTAGAATATTGACGCCCTCACCG	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	42	93	29	2	0	2	30	22950	22978	1						
119_1_09	ACGTGCTTATATGCTAGAAATCGAAACCG	31			38	100	19	0	0	13	31	25491	25473							1
119_1_10	CCCTACGAAATTTTAAACGACCCCGCCG	31			34	100	17	0	0	5	21	90329	90313							1
119_1_11	TACTTACCATGGAAACGATTAATGACGAC	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	44	96	26	1	0	1	26	25069	25094	1						
119_1_12	GGGAGTATAAATACGAAAAGGTAGATAT	30			34	100	17	0	0	4	20	97088	97072							1
119_1_13	TATGTCACCACGTTGCAACCATACCCACT	30			34	100	17	0	0	13	29	206508	206492							1
120_1_01	GAATAGCGAAGCAGCTCAACATCTTGGGA	30			32	100	16	0	0	13	28	43368	43353							1
120_1_02	TCATATTGCTTATGCTAACCTCTCGGATG	30	AF348739	Streptococcus thermophilus bacteriophage DT2 host sp	46	100	23	0	0	8	30	1669	1691	1						
120_1_03	ATGCTACTAACAATACAGATCAATTTAAA	30			34	100	17	0	0	14	30	3789820	3789836							1
120_1_04	TGCCCACTCGTTAATCTTGGCAACTAGTGC	30	AF085222	Streptococcus thermophilus bacteriophage DT1, comple	58	100	29	0	0	2	30	32161	32133	1						
120_1_05	TACCATCTAGGATAGGTACTGGTCACTGCC	30	AF085222	Streptococcus thermophilus bacteriophage DT1, comple	54	100	27	0	0	1	27	4427	4401	1						
120_1_06	CTAAGTAAATAGCAGTAGCGGAAGGAATG	30			36	100	18	0	0	11	28	8128	8145							1
120_1_07	CTTAGAATAGAGTAGAGTTTGAAGCGCGT	30			36	100	18	0	0	7	24	3984511	3984528							1
120_1_08	TATATGCAAACTTACCTAAAGAGCTG	29	AF085222	Streptococcus thermophilus bacteriophage DT1, comple	58	100	29	0	0	1	29	7385	7413	1						
120_1_09	AGTCACCTCAAAGCTTAAATGGCGTAA	30	AF085222	Streptococcus thermophilus bacteriophage DT1, comple	40	93	28	2	0	3	30	19261	19234	1						
120_1_10	GSTACTACACCTCAAAGCTTAAAGGATGG	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	60	100	30	0	0	1	30	227	256	1						
120_1_12	GGCTTAACCTGGTTACCAATGATCAITGT	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	40	93	28	2	0	3	30	1663	1636	1						
121_1_01	CATTTGAACAGCGAACAAGACCAATA	29			36	95	22	1	0	2	23	564151	564130							1
121_1_02	CGTTCCTGGGCTTATAAGATTAGCTATGT	30			34	100	17	0	0	12	28	1197556	1197540							1
121_1_03	ACCTATTGAGACTGTAATAATCCATAAGCG	30			34	100	17	0	0	10	26	118	134							1
121_1_04	ATCAACGTTTGGCAGGTCAATTCCTCAGT	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	52	97	30	1	0	1	30	28948	28919	1						
121_1_05	ATGTTGCGATAACCTACAGTTACTAAGTAA	30	AF158601	Streptococcus thermophilus bacteriophage SFI18 lysin,	60	100	30	0	0	1	30	12102	12073	1						
121_1_06	AGACAATCAGCTTATGATGGTTTCTTTGG	30	AF085222	Streptococcus thermophilus bacteriophage DT1, comple	46	96	27	1	0	1	27	2546	2572	1						
121_1_07	AGACGACTTGAACGTTGGATATCCACT	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	60	100	30	0	0	1	30	11792	11763	1						
121_1_09	TTAGATACCAATTAATCAATACGAGAGGAT	30			34	100	17	0	0	14	30	91393	91409							1
121_1_10	TTGCCATAATACCTCAAGCCCTCAACTA	30			36	100	18	0	0	1	18	677111	677128							1
122_1_01	AAGTCTAGAGTATGTTTGAAGAAAGCA	29			34	100	17	0	0	13	29	762420	762436							1
122_1_02	TCCAGTCTACAGTGTATGTTTCATCACC	30	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	40	93	28	2	0	2	29	26642	26615	1						
122_1_03	GCCTTGTITTTGGCTGAATACGACCGGCTT	30			36	100	18	0	0	5	22	1490556	1490539							1
122_1_04	CAGCTTGAATCTGACAGAAAGTCAAAAT	30			36	100	18	0	0	7	24	5462	5445							1
122_1_05	TATCGTAAATGATCAATGAAGATTGSAAC	30	AF145054	Streptococcus thermophilus bacteriophage 7201, comp	48	96	27	1	0	1	27	34441	34467	1						
122_1_06	TAAAGAACTAACCAAGCTTTAAGCCAAAG	30			34	90	29	3	0	1	29	2988	3016							1
122_1_07	TACCGAGAGATGCTGCTTATGCCATGCTC	30	AF115103	Streptococcus thermophilus bacteriophage Sf121, comp	52	97	30	1	0	1	30	21079	21050	1						
123_1_01	AGATGCTTGTGCGCTTGAACAACAGC	29			34	100	17	0	0	9	25	4781959	4781975							1
123_1_02	TTTGATGCGCTTGTGAGGAACTGATAT	30			36	100	18	0	0	1	18	3148	3165							1
123_1_04	AAAGACAGGCCCAAGGATTAAGTACGAA	30	AJ242479	Streptococcus thermophilus res gene, ORF2 and ORF3	48	96	28	1	0	1	28	1240	1267			1				
123_1_05	CTACATTTGATCATGTTTTCTCCTGT	30			36	100	18	0	0	13	30	1881394	1881411							1
123_1_06	TAGAAGCTCTGGAATACAAAGCAATCT	30	DQ437519	Streptococcus thermophilus plasmid p2991 chaperone	60	100	30	0	0	1	30	613	584			1				
123_1_07	CGAAGCTTGGCAGAAATCCGCTGGCGT	30			34	95	21	1	0	10	30	3298899	3298919							1
124_1_01	TGATTAGCAAAATTAACAAGGATATTGG	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	48	96	28	1	0	1	28	3286	3313	1						
124_1_02	AAATAAGAGTCTTACGACCAACCCGACAT	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	52	97	30	1	0	1	30	4828	4799	1						
124_1_03	AAATGATGATTAATGCTTGAAGATAGCAGT	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	60	100	30	0	0	1	30	13593	13564	1						
124_1_04	TCGTAACGTCGATACAGAAACAGCTGCTT	30	AY699705	Streptococcus thermophilus bacteriophage 2972, comp	50	97	29	1	0	1	29	1658	1686	1						
124_1_05	CGAAGTGGCAGAGCAGGCTTACACCAAA	30			34	100	17	0	0	14	30	15019	15035							1
124_1_06	GACTTGATTAAGCTCTATACCAAGCGACATG	31	AF158600	Streptococcus thermophilus bacteriophage Sf11, comp	58	100	29	0	0	1	29	1521	1549	1						
124_1_07	AAGAAGTCAAGAACCTATCCGCTGGTCGG	31	AF085222	Streptococcus thermophilus bacteriophage DT1, comple	42	96	25	1	0	6	30	23774	23798	1						
124_1_08	AGGGCTAATCGTTGATATCACCGGAAC	31			36	100	18	0	0	14	31	2502269	2502252							1