

1 **Supplementary data**

2 Table S1. Disinfection of *S. Enteritidis* S1400 skin samples by application of different treatments and conditions.

Treatment	T (°C)	Time (min)	Cell reduction ($\log_{10}$ CFU.cm ⁻² (±SD)
Ultrasonic bath*	22	15	2.29 (0.56)
Ultrasonic bath + acetic acid (2%)*	4 / 22	45 / 15	LOD
Acetic acid (2%)*	22	0.5	1.55 (0.35)
	4	45	LOD
Lactic acid (2%)*	22	0.5	1.63 (0.09)
	22	2	LOD
Sodium hypochlorite (2%)*	22	0.5	1.73 (0.12)
Hydrogen peroxide (2%)*	22	0.5	1.53 (0.27)
Ethanol (70%)	22	0.5	2.40 (0.61)
Ethanol (96%)	22	0.5	LOD

3 * Based on Loretz et al (2010) (Loretz et al. 2010); LOD – the value obtained was below the limit of detection; SD - standard deviation
 4 of three independent experiments using 4 skins.

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1 Table S2. Features of *Salmonella* phage PVP-SE2 open reading frames and their homology to other phage proteins.

ORF	Start	End	Length	Strand	AA	Product	Blastp	E-value
1	95	325	231	-	76	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP7]	1,00E-46
2	342	620	279	-	92	hypothetical membrane protein	hypothetical protein [<i>Salmonella</i> phage SS3e]	6,00E-52
3	638	994	357	-	118	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP7]	4,00E-83
4	991	1146	156	-	51	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP7]	8,00E-29
5	1143	1301	159	-	52	hypothetical protein	hypothetical protein LPSE_00027 [<i>Salmonella</i> phage LPSE1]	8,00E-14
6	1298	1483	186	-	61	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage Ent1]	4,00E-33
7	1667	2155	489	-	162	endolysin	endolysin 68 [<i>Salmonella</i> phage phi68]	1,00E-110
8	2136	2423	288	-	95	holin class I	hypothetical protein [<i>Salmonella</i> phage ST4]	3,00E-60
9	2785	3219	435	-	144	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SE2]	1,00E-100
10	3225	3602	378	-	125	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP3]	2,00E-84
11	3605	3808	204	-	67	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP3]	3,00E-42
12	3871	4035	165	-	54	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP3]	2,00E-30
12A	4230	4337	108	-	35	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP3]	1,00E-15
13	4405	4581	177	-	58	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP3]	1,00E-32
14	5476	5646	171	+	56	DNA-binding helix-turn-helix domain	hypothetical protein [<i>Salmonella</i> phage f18SE]	2,00E-33
15	5643	5876	234	+	77	hypothetical protein	putative uvsX-like protein [<i>Salmonella</i> phage Ent1]	1,00E-46
16	5933	8119	2187	+	728	primase/helicase	hypothetical protein [<i>Salmonella</i> phage ST4]	0,00E+00
17	8134	8352	219	-	72	DNA-binding helix-turn-helix domain	transcriptional regulator [<i>Salmonella</i> phage SETP7]	1,00E-45
18	8486	9010	525	+	174	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage fSE1C]	7,00E-114
19	9054	9536	483	+	160	HNH endonuclease	hypothetical protein [<i>Salmonella</i> phage fSE1C]	1,00E-108
20	9589	10839	1251	+	416	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage fSE1C]	0,00E+00

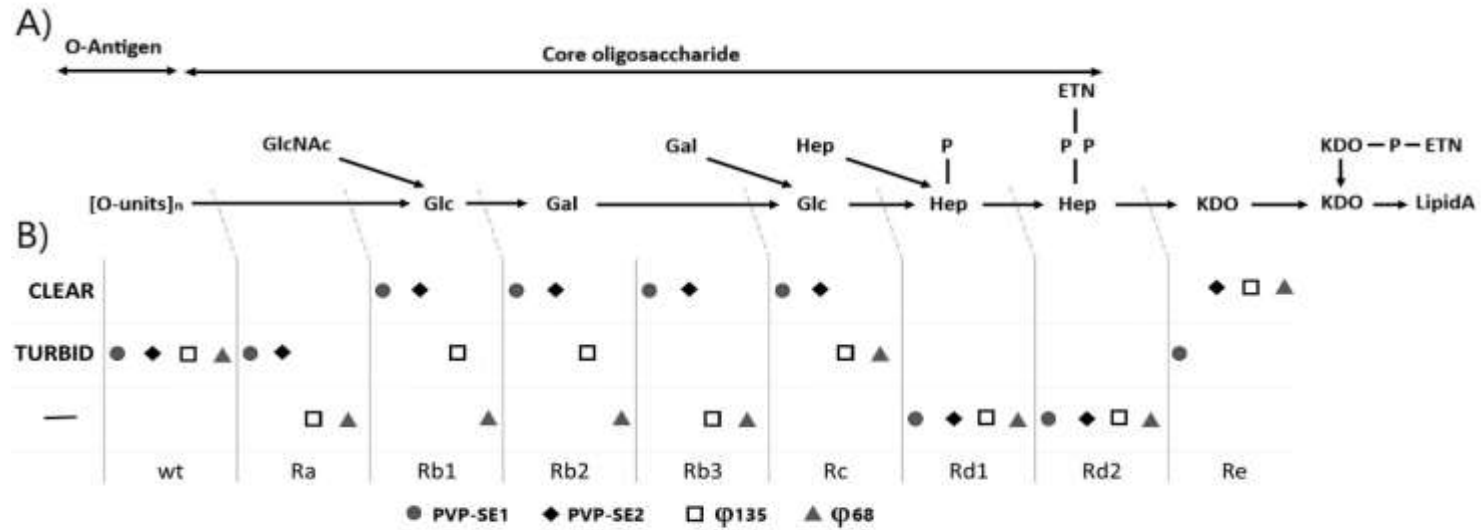
21	10921	11547	627	+	208	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP13]	1,00E-152
22	11605	14703	3099	+	1032	DNA polymerase	DNA polymerase I [<i>Salmonella</i> phage MA12]	0,00E+00
23	14790	15077	288	+	95	restriction endonuclease	putative restriction endonuclease [<i>Salmonella</i> phage LPSE1]	8,00E-62
24	15109	15300	192	+	63	hypothetical protein	hypothetical protein [<i>Escherichia</i> phage K1-dep(4)]	2,00E-37
25	15297	17762	2466	+	821	intein containing helicase	putative intein containing helicase precursor [<i>Salmonella</i> phage vB_SenS-Ent2]	0,00E+00
26	17759	17929	171	+	56	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage Ent1]	5,00E-29
27	18048	20102	2055	-	684	tailspike protein	tailspike protein [<i>Salmonella</i> phage L13]	0,00E+00
28	20115	22673	2559	-	852	tail fiber protein	hypothetical protein [<i>Salmonella</i> phage SE2]	0,00E+00
29	22664	23029	366	-	121	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP3]	4,00E-86
30	23026	23541	516	-	171	hypothetical protein	hypothetical protein BPS11Q3_48 [<i>Salmonella</i> phage BPS11Q3]	5,00E-123
31	23538	24038	501	-	166	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage fSE1C]	2,00E-121
32	24040	26373	2334	-	777	tail tape measure protein	tape measure protein [<i>Salmonella</i> phage wksl3]	0,00E+00
33	26366	26725	360	-	119	hypothetical protein	hypothetical protein LPSE_00065 [<i>Salmonella</i> phage LPSE1]	9,00E-83
34	26731	27204	474	-	157	tail assembly chaperone	hypothetical protein [<i>Salmonella</i> phage SE2]	4,00E-96
35	27317	27496	180	+	59	superinfection immunity protein	hypothetical protein [<i>Salmonella</i> phage MA12]	3,00E-32
36	27559	28689	1131	+	376	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage L13]	0,00E+00
37	28686	28916	231	+	76	hypothetical protein	hypothetical protein SP101_00095 [<i>Salmonella</i> phage FSL SP-101]	2,00E-42
38	28884	29030	147	-	48	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage L13]	7,00E-26
39	29029	29700	672	+	223	DNA-binding protein	DNA-binding protein [<i>Salmonella</i> phage L13]	4,00E-161
40	29729	30898	1170	-	389	major tail protein	putative major tail protein [<i>Salmonella</i> phage vB_SenS-Ent2]	0,00E+00

41	30898	31317	420	-	139	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP7]	1,00E-96
42	31317	31712	396	-	131	tail protein	hypothetical protein [<i>Salmonella</i> phage SETP7]	1,00E-89
43	31709	32068	360	-	119	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP7]	1,00E-78
44	32068	32673	606	-	201	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SETP7]	1,00E-133
45	32676	33185	510	-	169	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage SE2]	5,00E-115
46	33189	33377	189	-	62	hypothetical protein	hypothetical protein [<i>Salmonella</i> phage fSE1C]	4,00E-35
47	33414	33764	351	-	116	Phage neck whiskers	putative major tail subunit [<i>Salmonella</i> phage SETP3]	9,00E-76
48	33778	34062	285	-	94	head protein	head protein [<i>Salmonella</i> phage SETP7]	9,00E-57
49	34123	35172	1050	-	349	coat protein	putative coat protein [<i>Salmonella</i> phage wksl3]	0,00E+00
50	35176	35877	702	-	233	scaffold protein	putative scaffold protein [<i>Salmonella</i> phage SETP3]	3,00E-163
51	35962	36087	126	-	41	i-Spanin	p11.5 [<i>Salmonella</i> phage MB78]	5,00E-21
52	36071	36457	387	-	128	o-Spanin	o-Spanin [<i>Salmonella</i> phage BPS11Q3]	1,00E-81
53	36502	36621	120	-	39	hypothetical protein	hypothetical protein [<i>Xanthomonas</i> phage f29-Xaj]	2,00E-19
54	36776	37234	459	-	152	phage neck whiskers	putative tail protein [<i>Salmonella</i> phage SETP3]	5,00E-100
55	37237	38280	1044	-	347	head morphogenesis protein	head morphogenesis protein [<i>Salmonella</i> phage SETP3]	0,00E+00
56	38457	39107	651	+	216	amidase	hypothetical protein [<i>Salmonella</i> phage MA12]	4,00E-157
57	39137	40606	1470	-	489	portal protein	putative portal protein [<i>Salmonella</i> phage vB_SenS-Ent2]	0,00E+00
58	40619	41890	1272	-	423	terminase, large subunit	hypothetical protein [<i>Salmonella</i> phage ST4]	0,00E+00
59	41880	42386	507	-	168	terminase, small subunit	putative terminase small subunit [<i>Salmonella</i> phage SETP3]	6,00E-130

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3 Figure S1. Plaque characteristic of phages PVP-SE1, PVP-SE2, φ68 and φ135 in *S. Typhimurium* LT2 mutants. A) mutations in the
 4 LPS chain, B) phage plaque turbidity characteristics when plated in the different LT2 mutants.

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