



FIG S1 SEM analyses of *Vibrio salmonicida* LFI1238 biofilms after 3 and 6 days growth. The biofilms were grown in SWT medium at 4°C before being fixated. The pictures to the left show the biofilm at 130 x magnification (bar size 100 mm), and the pictures to the right show the biofilm at 2000 x magnification (bar size 5 mm).

TABLE S1 Plasmid profiles of *Vibrio salmonicida* LFI1238 and the wild type strains included in the study ^a

Name	Localisation	Profile in kDa	Group
NCMB 2262	Type strain	21, 3.4	A
VS26	Seløy	21, 3.4	A
VS295	Trangereid	21, 3.4	A
VS446	Sjøvegen	21, 3.4, 2.8	B
VS224	Kristiansund	21, 3.4, 2.8	B
VS12	Strønstad	61, 21	C
VS201	Aukra	21	D
VS103	Valevåg	21, 5.5, 2.8	
VS370	Krokeldalen	61, 21, 6.7	
VS498	Hammerfest	61, 21, 3.4, 2.8	
LFI1238	Hammerfest	61, 21, 3.4, 2.8	

^a The plasmid profiles of the ten wild type isolates were analyzed by Sørnum and co-workers (Sørnum et al., J. Clin. Microbiol. 26:1679-1683, 1988). One isolate shows the same plasmid profile as LFI1238 (Hjerde et al., BMC Genomics 9:616, 2008), whereas seven isolates have plasmid profiles belonging to the four main groups A to D. The two remaining isolates show plasmid profiles not belonging to either group.

TABLE S2 Complete list of upregulated genes (Log_2 ratios < -1.0 and P-values < 0.05) in the *ΔlitR* mutant compared to wild type LF11238 after growth in suspension.

CDS	Gene product	Log_2 ratio	Adjusted P-value
VSAL_I1325	proton glutamate symport protein	-3.01	2.01E-02
VSAL_I1328	putative membrane associated peptidase	-2.86	3.98E-05
VSAL_II0312	hypothetical protein, putative anti-sigma factor antagonist	-2.66	2.91E-04
VSAL_II0297	putative glycosyl transferase	-2.54	5.73E-04
VSAL_I0550	endA endonuclease I precursor	-2.48	2.86E-04
VSAL_I1342	hypothetical protein	-2.46	3.05E-03
VSAL_II0304	putative glycosyl transferase	-2.13	2.98E-02
VSAL_I1608	galR HTH-type transcriptional regulator GalR	-2.13	2.46E-04
VSAL_II0311	outer membrane protein, OmpA family	-2.05	1.87E-03
VSAL_II0662	putative signaling protein	-1.92	4.29E-04
VSAL_II0296	putative transmembrane glycosyl transferase	-1.82	7.55E-03
VSAL_II0308	putative response regulator	-1.80	5.44E-03
VSAL_II1079	nfsA NADPH-flavin oxidoreductase	-1.73	1.73E-02
VSAL_II0302	putative polysaccharide biosynthesis protein	-1.70	4.27E-03
VSAL_II0298	putative membrane protein	-1.62	3.16E-02
VSAL_II0825	sgcA putative phosphotransferase enzyme II	-1.57	5.53E-02
VSAL_I1344	sdaC serine transporter	-1.52	3.74E-03
VSAL_II0138	hypothetical protein	-1.52	1.79E-03
VSAL_II0609	putative exported protein	-1.41	5.48E-02
VSAL_II0818	hypothetical protein	-1.40	2.64E-03
VSAL_I3166t	tRNA-Ser tRNA-Ser undefined product 2016247:2016331 forward	-1.38	1.98E-02
VSAL_I0696	conserved hypothetical protein	-1.36	1.14E-02
VSAL_I2136	nspC carboxynorspermidine decarboxylase	-1.34	1.45E-02
VSAL_II1088	putative membrane protein	-1.33	4.03E-02
VSAL_I1003	putative HTH-type transcriptional regulator	-1.33	9.93E-04
VSAL_I2294	putative type IV pilus assembly (PilZ) protein	-1.33	9.36E-03
VSAL_I1609	sodium/proton antiporter	-1.30	1.01E-02
VSAL_II0102	msrAB peptide methionine sulfoxide reductase	-1.28	4.77E-03
VSAL_I0144	transposase	-1.27	6.57E-03
VSAL_II0984	putative exported protein	-1.26	8.35E-03
VSAL_II0249	putative exported protein	-1.24	7.24E-03
VSAL_I2330	flgJ peptidoglycan hydrolase FlgJ	-1.23	1.11E-02
VSAL_II0823	PTS system, lactose/cellobiose specific IIB subunit	-1.22	1.76E-04
VSAL_I2747	metB cystathionine gamma-synthase (O-succinylhomoserin (thiol)-lyase)	-1.22	2.27E-02
VSAL_I2138	putative diamminobutyrate--2-oxoglutarate aminotransferase	-1.21	2.27E-02
VSAL_I2328	flgL flagellar hook-associated protein type 3 FlgL	-1.17	2.09E-02
VSAL_II0821	putative exported protein	-1.16	3.09E-02
VSAL_I0606	putative signaling protein	-1.13	3.63E-02
VSAL_I2117	methyl-accepting chemotaxis protein (fragment)	-1.13	2.53E-02
VSAL_I2605	dksA DnaK suppressor protein	-1.11	1.92E-02
VSAL_I2306	fliH polar flagellar assembly protein FliH	-1.11	3.68E-02
VSAL_I1499	putative exported protein	-1.09	2.85E-03
VSAL_I2741	putative cell division protein FtsN	-1.05	2.23E-02
VSAL_I0886	metN D-methionine transport ATP-binding protein MetN	-1.04	2.82E-02
VSAL_II0451	hypothetical protein	-1.04	5.40E-03
VSAL_I0008	putative amino acid ABC transporter. substrate-binding protein	-1.03	2.50E-02
VSAL_I2308	fliF polar flagellar M-ring protein FliF (pseudogene)	-1.03	1.02E-02
VSAL_I1537	membrane protein	-1.00	2.26E-02

TABLE S3 Complete list of downregulated genes (Log_2 ratio > 1.0 and P-values < 0.05) in the *ΔlitR* mutant compared to wild type LF11238 after growth in suspension.

CDS	Gene product	Log_2 ratio	Adjusted P-value
VSAL_I2619	litR HTH-type luminescence regulator LitR	5.11	4.17E-09
VSAL_II0322	putative membrane protein	3.48	2.21E-02
VSAL_II0328	spoIIAA putative anti-sigma F factor antagonist	2.97	5.32E-03
VSAL_II0323	putative lipoprotein	2.80	2.74E-02
VSAL_II0324	putative lipoprotein	2.77	7.67E-03
VSAL_I1197	gadA2 glutamate decarboxylase beta	2.71	4.04E-04
VSAL_I2057	aapJ general L-amino acid-binding periplasmic protein precursor	2.54	4.39E-03
VSAL_II0326	hypothetical protein	2.50	1.08E-02
VSAL_II0321	putative glycosyl transferase	2.42	7.28E-03
VSAL_I4020s	VSsrna21 VSsrna21 undefined product 246429:246594 reverse	2.35	1.71E-02
VSAL_II0319	rpoS RNA polymerase sigma factor	2.27	5.34E-03
VSAL_II0066	membrane protein	2.22	3.79E-02
VSAL_I1198	probable membrane permease	2.16	5.50E-03
VSAL_II0327	putative nucleotidyl transferase	2.13	5.39E-02
VSAL_II0054	hypothetical protein	2.12	1.73E-03
VSAL_I1290	outer membrane protein. OmpA family (pseudogene)	2.00	2.38E-02
VSAL_I2208	prkA putative PrkA serine protein kinase	1.96	2.76E-03
VSAL_I1394	hypothetical protein	1.92	5.87E-03
VSAL_II0332	putative hemolysin-type calcium-binding protein (fragment)	1.88	3.11E-02
VSAL_I0395	hypothetical protein, putative phage gene (fragment)	1.84	2.11E-02
VSAL_I2207	conserved hypothetical protein	1.79	1.30E-02
VSAL_I1395	membrane protein	1.67	1.66E-02
VSAL_p840_56	hypothetical protein	1.64	1.60E-03
VSAL_I0755	membrane protein	1.57	1.35E-03
VSAL_I1456	rimL ribosomal-protein-serine acetyltransferase	1.43	1.44E-02
VSAL_I1590	qnr quinolone resistance determinant QnrC	1.30	3.19E-03
VSAL_II0059	putative type I toxin secretion system. membrane transport protein	1.29	4.94E-02
VSAL_II0238	glgC glucose-1-phosphate adenylyltransferase	1.28	6.76E-03
VSAL_I2438	aceA isocitrate lyase	1.26	3.77E-03
VSAL_II0444	binding-protein-dependent transport system inner membrane component	1.25	3.47E-02
VSAL_I1484	short chain dehydrogenase	1.21	5.94E-03
VSAL_II0480	pspF psp operon transcriptional activator PspF	1.16	2.51E-02
VSAL_II0040	glgB 1.,4-alpha-glucan branching enzyme (fragment)	1.15	2.37E-02
VSAL_I0588	ompD major outer membrane protein OmpU	1.13	2.60E-02
VSAL_I1177	clpB chaperone ClpB-1	1.12	4.59E-02
VSAL_II0020	hemolysin-type calcium-binding protein	1.09	2.03E-02
VSAL_I2736	hypothetical protein	1.07	2.96E-02
VSAL_I2879	pssA CDP-diacylglycerol--serine O-phosphatidyltransferase	1.05	8.39E-03
VSAL_I2214	clpA ATP-dependent Clp protease ATP-binding subunit ClpA	1.01	2.19E-02

TABLE S4 Complete list of upregulated genes (Log_2 ratios < -1.0 and P-values < 0.05) in the *ΔlitR* mutant compared to wild type LF11238 grown as biofilms.

CDS	Gene product	Log2 ratio	Adjusted P-value
VSAL_II0297	putative glycosyl transferase	-5.17	7.86E-04
VSAL_II0249	putative exported protein	-4.93	4.28E-03
VSAL_II1000	hypothetical protein (pseudogene)	-4.79	1.38E-06
VSAL_II1001	putative lipoprotein	-4.45	3.28E-03
VSAL_II0313	putative exported protein	-4.38	5.87E-03
VSAL_II0312	hypothetical protein, putative anti-sigma factor antagonist	-4.34	5.76E-04
VSAL_II0311	outer membrane protein, OmpA family	-4.15	1.88E-06
VSAL_II0314	putative lipoprotein	-3.85	2.17E-04
VSAL_II0300	hypothetical protein	-3.73	7.80E-03
VSAL_II0304	putative glycosyl transferase	-3.69	1.75E-05
VSAL_II0310	polysaccharide biosynthesis/export protein	-3.64	3.34E-05
VSAL_II0299	putative glycosyl transferases	-3.37	1.87E-03
VSAL_II0250	putative lipoprotein	-3.35	3.34E-02
VSAL_I3165s	VSsrna114 small RNA Qrr	-3.28	5.90E-03
VSAL_I1508	OMT5 putative methyltransferase	-3.26	2.78E-04
VSAL_I2667	degQ exported serine protease	-2.95	3.56E-04
VSAL_II0298	putative membrane protein	-2.88	4.90E-03
VSAL_II0302	putative polysaccharide biosynthesis protein	-2.62	6.10E-04
VSAL_II0303	putative glycosyl transferase	-2.46	3.57E-03
VSAL_II0296	putative transmembrane glycosyl transferase	-2.45	9.51E-03
VSAL_I1328	putative membrane associated peptidase	-2.23	1.69E-02
VSAL_I2864	csgA curlin associated precursor, CsgA like	-2.02	4.49E-04
VSAL_I3195t	tRNA-Met tRNA-Met undefined product 2893938:2894010 forward	-2.02	5.99E-04
VSAL_I3118t	tRNA tRNA transfer RNA-Asn 561331:561403 reverse	-1.88	1.36E-02
VSAL_I2530	rseA sigma-E factor negative regulatory protein	-1.84	7.33E-04
VSAL_I0859	hypothetical protein	-1.75	1.68E-02
VSAL_I1608	galR HTH-type transcriptional regulator GalR	-1.72	3.92E-03
VSAL_I2064	conserved hypothetical protein	-1.71	4.06E-04
VSAL_II0309	putative capsular polysaccharide synthesis protein	-1.71	2.78E-04
VSAL_I1325	proton glutamate symport protein	-1.68	5.10E-02
VSAL_I2857	csgE assembly/transport component in curli production, CsgE precursor	-1.61	5.51E-02
VSAL_II0308	putative response regulator	-1.57	4.42E-02
VSAL_II0102	mrsAB peptide methionine sulfoxide reductase	-1.53	3.44E-03
VSAL_I2992	MFS transporter	-1.52	6.70E-03
VSAL_I4092s	VSsrna93 VSsrna93 undefined product 1673822:1674022 reverse	-1.47	6.08E-03
VSAL_II0437	hypothetical protein	-1.43	5.20E-02
VSAL_I2564	putative lipoprotein	-1.42	3.54E-02
VSAL_I2549	hypothetical protein	-1.33	1.27E-03
VSAL_I3177t	tRNA-Arg tRNA-Arg undefined product 2350401:2350474 forward	-1.33	5.33E-02
VSAL_I0501	yrbK putative membrane protein	-1.31	2.65E-03
VSAL_I2172	hypothetical protein	-1.29	4.19E-02
VSAL_II0079	zinc carboxypeptidase	-1.25	5.80E-03
VSAL_I2495	hypothetical protein	-1.25	8.61E-03
VSAL_I0722	fdx 2Fe-2S ferredoxin	-1.23	2.53E-03
VSAL_I3117t	tRNA-Leu tRNA-Leu undefined product 560225:560306 forward	-1.23	1.47E-02
VSAL_I2111	membrane protein	-1.21	4.80E-02
VSAL_II0587	outer membrane protein, OmpA family	-1.19	1.34E-02
VSAL_I0737	guaB inosine-5'-monophosphate dehydrogenase	-1.19	7.09E-03
VSAL_I2832	putative exonuclease	-1.18	3.18E-02

VSAL_I0643	gshA glutamate--cysteine ligase	-1.17	1.74E-02
VSAL_I1786	putative iron-regulated protein	-1.15	4.50E-02
VSAL_I3157t	tRNA-Ser tRNA-Ser undefined product 1120410:1120497 reverse	-1.14	4.97E-03
VSAL_I2349	putative exported protein	-1.12	4.52E-02
VSAL_II0614	cold shock-like protein	-1.12	3.08E-02
VSAL_I3161t	tRNA-Val tRNA-Val undefined product 1804642:1804714 reverse	-1.10	2.74E-02
VSAL_I1939	ppiB peptidyl-prolyl cis-trans isomerase B	-1.09	4.73E-02
VSAL_I0563	dsbC thiol/disulfide interchange protein DsbC precursor	-1.08	1.11E-03
VSAL_I0101	putative membrane protein	-1.06	3.61E-02
VSAL_I2031	hexR HTH-type transcriptional regulator HexR	-1.05	2.53E-02
VSAL_II0466	putative membrane protein (fragment)	-1.02	2.60E-02
VSAL_I1554	putative exported protein	-1.02	1.51E-02
VSAL_I1321	hypothetical protein	-1.01	6.75E-03
VSAL_II0301	O-antigen polymerase	-1.01	5.30E-02
VSAL_I1842	lolA outer-membrane lipoprotein carrier protein precursor	-0.98	5.16E-02

TABLE S5 Complete list of downregulated genes (Log_2 ratio > 1.0 and P-values < 0.05) in the *ΔlitR* mutant compared to the wild type LFI1238 grown as biofilms.

CDS	Gene product	Log2 ratio	Adjusted P-value
VSAL_I2619	litR HTH-type luminescence regulator LitR	4.33	9.46E-05
VSAL_I1132	putative outer membrane protein	2.25	4.20E-04
VSAL_p54_03	putative replication initiation protein	2.10	3.15E-02
VSAL_I1456	rimL ribosomal-protein-serine acetyltransferase	2.10	1.88E-02
VSAL_I0018	groS 10 kDa chaperonin 1	2.07	4.73E-02
VSAL_II0323	putative lipoprotein	2.05	3.81E-03
VSAL_I2739	hslU ATP-dependent hsl protease ATP-binding subunit HslU	1.86	9.66E-03
VSAL_II0054	hypothetical protein	1.84	2.15E-02
VSAL_I0588	ompD major outer membrane protein OmpU	1.82	3.82E-03
VSAL_I2471	dnaK chaperone protein DnaK (heat shock protein 70)	1.68	9.15E-03
VSAL_I0017	groEL 60 kDa chaperonin 1	1.67	4.00E-02
VSAL_I2310	ntrC sigma-54 dependent response regulator	1.63	4.76E-02
VSAL_I3061	atpA ATP synthase alpha subunit	1.55	2.48E-03
VSAL_II0332	putative hemolysin-type calcium-binding protein (fragment)	1.55	3.41E-03
VSAL_II0327	putative nucleotidyl transferase	1.48	1.13E-02
VSAL_II0010	conserved hypothetical protein	1.45	1.69E-02
VSAL_I0556	pgk phosphoglycerate kinase	1.44	1.59E-02
VSAL_I0122	prlC oligopeptidase A	1.42	7.13E-03
VSAL_I0565	prfB peptide chain release factor 2 (RF-2) (pseudogene)	1.41	8.83E-03
VSAL_I2292	flhF flagellar biosynthesis protein FlhF	1.39	3.97E-03
VSAL_I2641	ftsA cell division protein FtsA	1.37	2.84E-02
VSAL_II0320	putative membrane associated signaling protein	1.36	2.07E-02
VSAL_p840_23	pilT transglycosylase PilT	1.35	5.07E-02
VSAL_I0087	ilvC ketol-acid reductoisomerase	1.34	7.27E-03
VSAL_II0319	rpoS RNA polymerase sigma factor	1.34	1.34E-02
VSAL_I0814	htpG chaperone protein HtpG (heat shock protein HtpG)	1.34	1.31E-02
VSAL_I0620	deoA thymidine phosphorylase	1.33	1.95E-02
VSAL_I3060	atpG ATP synthase gamma subunit	1.33	1.25E-02
VSAL_I0311	rpsG 30S ribosomal protein S7	1.33	3.26E-02
VSAL_I0447	uvrA UvrABC system protein A	1.33	1.47E-04
VSAL_I0634	recA protein RecA (recombinase A)	1.32	2.43E-04
VSAL_I3063	atpF ATP synthase B chain	1.31	1.47E-02
VSAL_II0497	conserved hypothetical protein	1.29	1.15E-03
VSAL_I2057	aapJ general L-amino acid-binding periplasmic protein precursor	1.29	1.90E-03
VSAL_II0056	putative type I secretion protein, HlyD family	1.28	4.18E-02
VSAL_II0504	signal transduction protein, histidine kinase	1.25	4.19E-03
VSAL_I2595	acnB aconitate hydratase 2 (citrate hydro-lyase 2)	1.24	7.04E-03
VSAL_I0519	pyrB aspartate carbamoyltransferase catalytic subunit	1.23	9.98E-03
VSAL_I0664	rluD ribosomal large subunit pseudouridine synthase D	1.22	2.85E-02
VSAL_I2214	clpA ATP-dependent Clp protease ATP-binding subunit ClpA	1.19	1.88E-03
VSAL_I3058	atpC ATP synthase epsilon subunit	1.18	1.09E-02
VSAL_I3062	atpH ATP synthase delta subunit	1.17	2.21E-02
VSAL_I0817	tig trigger factor (TF)	1.15	1.02E-02
VSAL_p840_19	putative exported protein	1.11	1.25E-03
VSAL_I1238	exported serine protease (pseudogene)	1.11	3.25E-02
VSAL_II0328	spoIIAA putative anti-sigma F factor antagonist	1.10	2.74E-02
VSAL_I2867	rpL 50S ribosomal subunit protein L7/L12	1.09	1.92E-02
VSAL_I0310	rpsL 30S ribosomal protein S12	1.07	3.55E-02
VSAL_I2927	hslO 33 kDa chaperonin (heat shock protein 33)	1.06	1.80E-02

VSAL_II0238	glgC glucose-1-phosphate adenylyltransferase	1.06	3.05E-02
VSAL_I2302	fliL polar flagellar protein FliL	1.06	2.94E-02
VSAL_II0280	integral membrane protein	1.04	2.95E-02
VSAL_I2427	rpsB 30S ribosomal protein S2	1.03	8.80E-03
VSAL_I2426	tsf elongation factor TS	1.03	3.96E-02
VSAL_I2697	rpoD RNA polymerase sigma factor RpoD (sigma-70)	1.02	2.73E-02
VSAL_I3010	neuD putative capsular polysaccharide biosynthesis protein NeuD	1.01	1.94E-02
VSAL_I0377	leuA 2-isopropylmalate synthase	1.00	6.58E-03
VSAL_I0191	rpmB 50S ribosomal protein L28	1.00	2.05E-02
VSAL_II0329	putative response regulator	0.99	3.06E-02
