Supplementary material

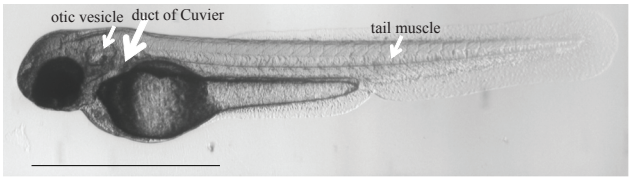

FIG S1 Zebrafish embryo 48-52 hours post fertilization.Otic vesicle, duct of Cuvier and tail muscle is marked with arrows. Scale bar: 1 mm.

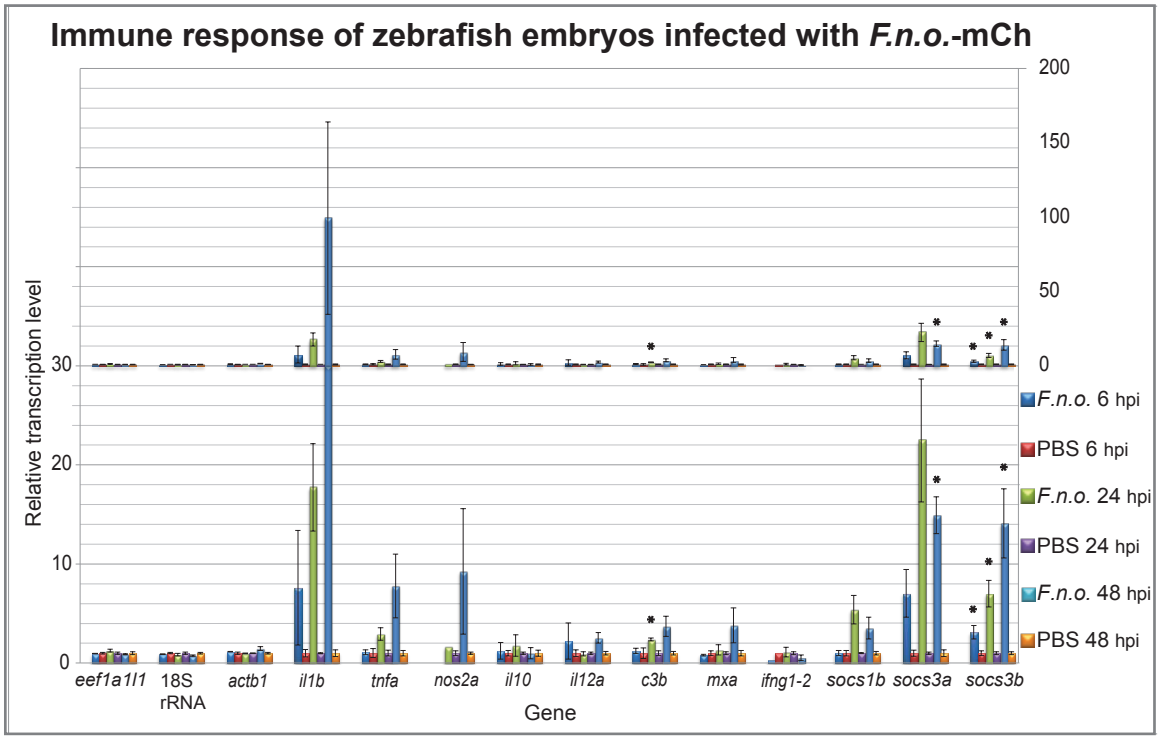

FIG S2 Immune response of zebrafish embryos infected with *F.n.o.*-mCh at different time points. Asterisks indicate statistically significant difference with $p < 0.05$.

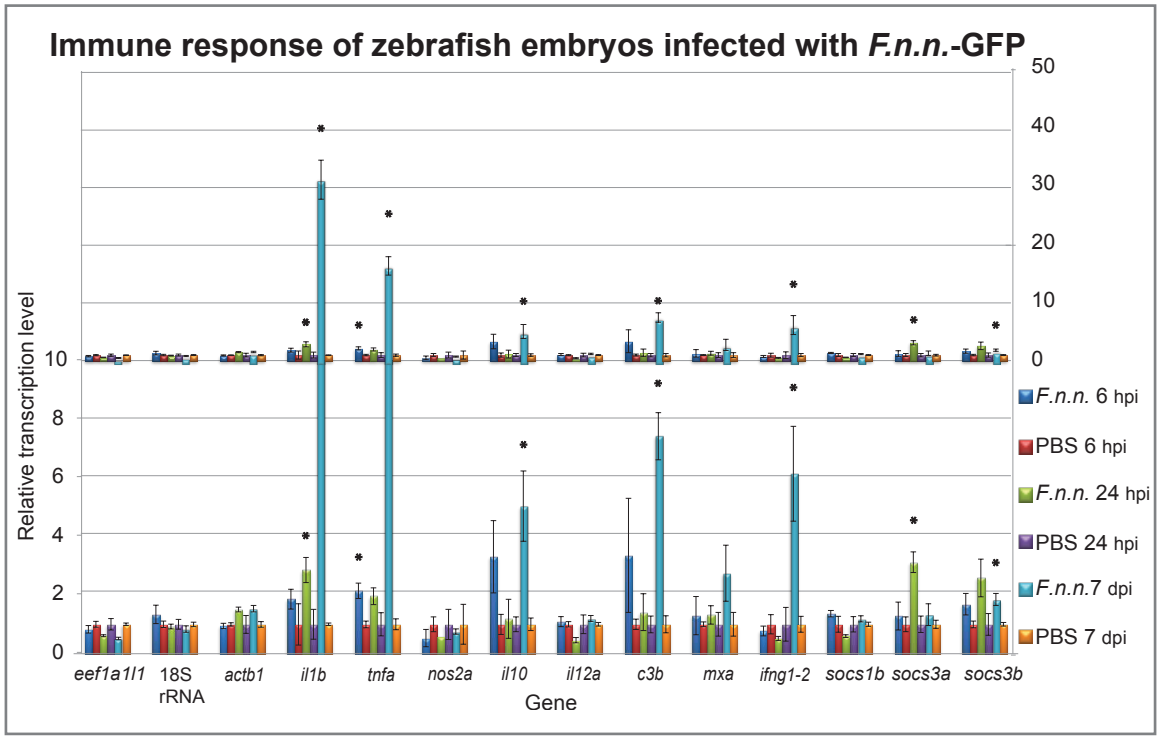

FIG S3 Immune response of zebrafish embryos infected with *F.n.n.*-GFP at different time points. Asterisks indicate statistically significant difference with $p < 0.05$.

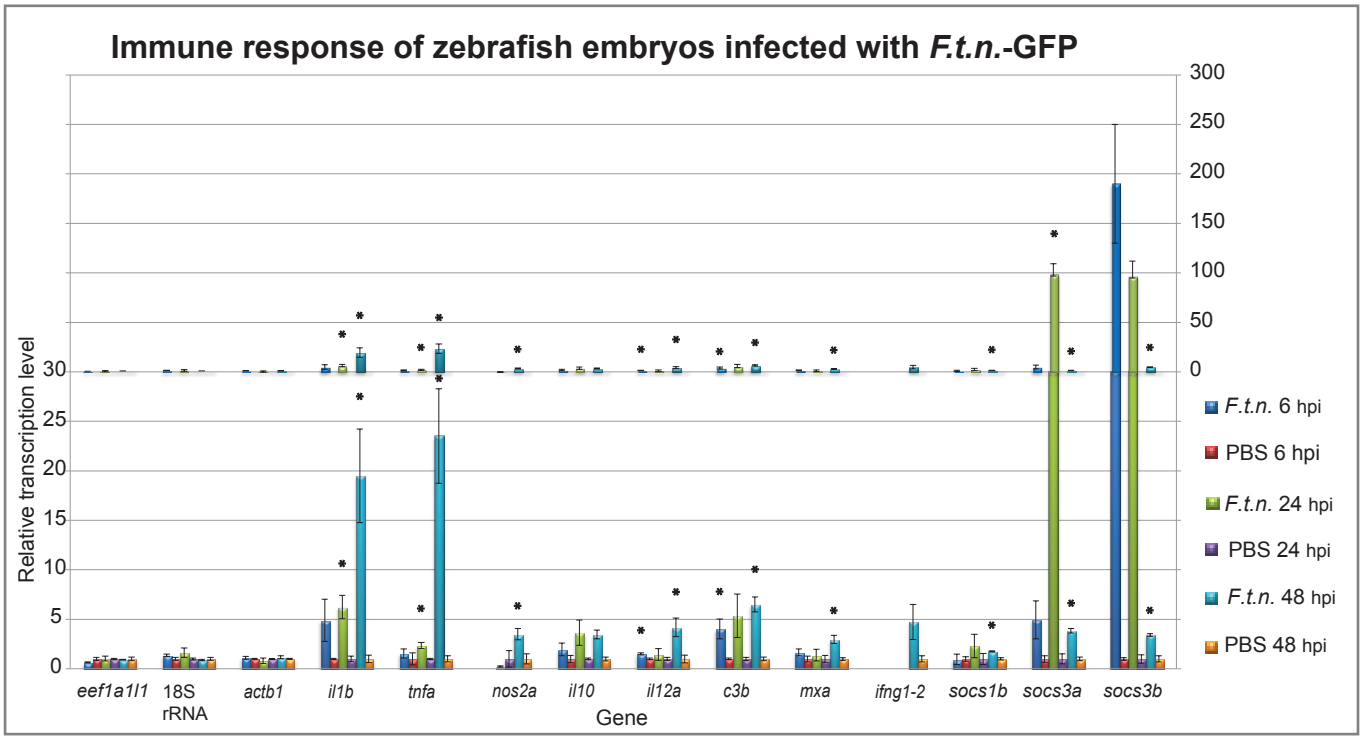

FIG S4 Immune response of zebrafish embryos infected with *F.t.n.*-GFP at different time points. Asterisks indicate statistically significant difference with $p < 0.05$.

TABLE S1 Bacterial strains used in the experiments.

Strain name	Plasmid	Reference
F. noatunensis ssp. *noatunensis* NCIMB14265	-	[1]
HWL108 (*F. noatunensis* ssp. *noatunensis* NCIMB14265)	pKK289Km/*gfp*	[2]
F. noatunensis ssp. *noatunensis* NCIMB14265	pKK289Km/*mCherry*	This study
F. noatunensis ssp. *orientalis* LADL 07-285A	-	[3]
F. noatunensis ssp. *orientalis* LADL 07-285A	pKK289Km/*mCherry*	This study
F. tularensis ssp. *novicida* U112 wt	-	[4]
F. tularensis ssp. *novicida* U112 wt	pKK289Km/*gfp*	This study
F. tularensis ssp. *novicida* U112 wt	pKK289Km/*mCherry*	This study
E. coli DH5α (*F– Φ80lacZΔM15 Δ(lacZYA-argF) U169 recA1 endA1 hsdR17 (rK–, mK+) phoA supE44 λ– thi-1 gyrA96 relA1*)	pmCherry	Clontech Laboratories Inc. Cat no. 632522
E. coli OneShot® Top10 (*F- mcrA Δ(mrr-hsdRMS-mcrBC) φ80lacZΔM15 ΔlacX74 recA1 araD139 Δ(ara-leu) 7697 galU galK rpsL (StrR) endA1 nupG λ-*)	pCR4-TOPO	Life Technologies Corporation Cat no. K4575-J10
E. coli OneShot® Top10 (*F- mcrA Δ(mrr-hsdRMS-mcrBC) φ80lacZΔM15 ΔlacX74 recA1 araD139 Δ(ara-leu) 7697 galU galK rpsL (StrR) endA1 nupG λ-*)	pCR4/*mCherry*	This study
E. coli DH5α (*F– Φ80lacZΔM15 Δ(lacZYA-argF) U169 recA1 endA1 hsdR17 (rK–, mK+) phoA supE44 λ– thi-1 gyrA96 relA1*)	pKK289Km/*mCherry*	This study
E. coli S17-1 (*recA pro hsdR RP4-2-Tc::Mu-Km::Tn7 integrated into the chromosome*)	pKK289Km/ *gfp*	[5]

TABLE S2 Primers used for RT-qPCR in the experiemnts. Asterisks indicate NCBI Gene ID for the genes without an official NCBI Ref. Seq. for mRNA transcripts.

Gene name	Gene symbol	Forward primer	Reverse primer	Product size	Accession number	Reference
interferon, gamma 1-2	*ifng1-2*	QuantiTect Primer Assay Dr_ifng1-2_1_SG		89 bp	NM_212864.1	QIAGEN Cat # QT02064328
myxovirus (influenza) resistance A	*mxa*	QuantiTect Primer Assay Dr_mxa_1_SG		94 bp	NM_182942.4	QIAGEN Cat # QT02179205
interleukin 1, beta	*il1b*	TTC CCC AAG TGC TGC TTA TT	AAG TTA AAA CCG CTG TGG TCA	149 bp	NM_212844.2	[6]
interleukin 10	*il10*	QuantiTect Primer Assay Dr_il10_1_SG		144 bp	NM_001020785.2	QIAGEN Cat # QT02063922
interleukin 12a	*il12a*	QuantiTect Primer Assay Dr_il12a_1_SG		94 bp	NM_001007107.1	QIAGEN Cat # QT02085300
nitric oxide synthase 2a, inducible	*nos2a*	QuantiTect Primer Assay Dr_inos2a_1_SG		105 bp	NM_001104937.1	QIAGEN Cat # QT02091705
complement component c3b	*c3b*	QuantiTect Primer Assay Dr_c3b_1_SG		85 bp	NM_131243.1	QIAGEN Cat # QT02059771
tumor necrosis factor a	*tnfa*	ACC AGG CCT TTT CTT CAG GT	GCA TGG CTC ATA AGC ACT TGT T	148 bp	NM_212859.2	[6]
18S rRNA	*zgc:158463*	GCC TGC GGC TTA ATT TGA CT	ACC ACC CAC AGA ATC GAG AAA	98 bp	NM_001098396.1	[6]
actin, beta 1	*actb1*	QuantiTect Primer Assay Dr_bactin_1_1_SG		142 bp	NM_131031.1	QIAGEN Cat # QT02174907
eukaryotic translation elongation factor 1 alpha 1, like 1	*eef1a1l1*	CTT CTC AGG CTG ACT GTG C	CCG CTA GCA TTA CCC TCC	358 bp	NM_131263.1	[7]
F. noatunensis Francisella outer membrane protein A	*fopA*	TAC TGG TGC ATG GGA TGT TG	TCT TGG AGC CAT TGT CTG AA	100 bp	12952182*	[8]
F. noatunensis DNA topoisomerase II	*gyrA*	CGA GCT TTA CGA GCT GCT TC	TCT TTT AGA GAA CCC TAA AGA GGC T	87 bp	12952071*	[9]
mCherry	*mCherry*	TAC ACA TAT GGT GAG CAA GGG CGA GG	CAC CAG ACA AGT TGG TAA TGG	778 bp		This study
F. novicida Francisella outer membrane protein A	*F. novicida fopA*	GGC AGA GCG GGT ACT AAC AT	GTT TGA GCA GCT GTA GTC GC	119 bp	4548250*	This study
suppressor of cytokine signaling 1b	*socs1b*	QuantiTect Primer Assay Dr_socs1_1_SG		65 bp	NM_001003467.1	QIAGEN Cat # QT02168187
suppressor of cytokine signaling 3a	*socs3a*	QuantiTect Primer Assay Dr_socs3a_1_SG		97 bp	NM_199950.1	QIAGEN Cat # QT02056488
suppressor of cytokine signaling 3b	*socs3b*	QuantiTect Primer Assay Dr_socs3b_1_SG		123 bp	NM_213304.1	QIAGEN Cat # QT02068724

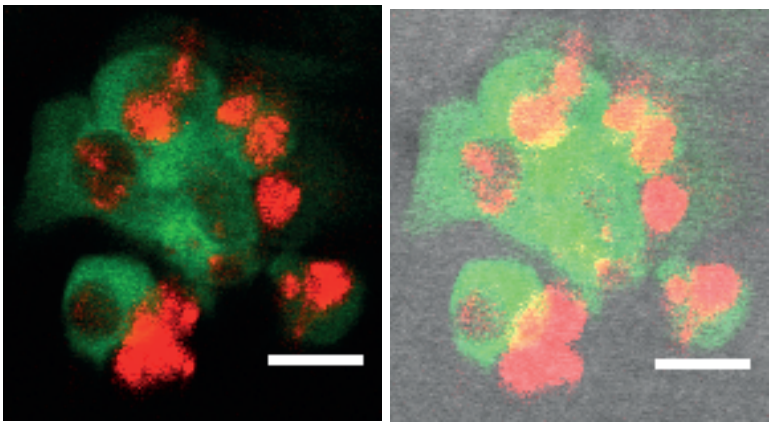

FIG S5 Neutrophils of Tg(*mpx*:EGFP)*i114* zebrafish embryos phagocytized *E.coli*-mCh injected via intramuscular route. Scale bar 10 μm.

REFERENCES

1. **Olsen AB, Mikalsen J, Rode M, Alfjorden A, Hoel E, Straum-Lie K, Haldorsen R, Colquhoun DJ.** 2006. A novel systemic granulomatous inflammatory disease in farmed Atlantic cod, Gadus morhua L., associated with a bacterium belonging to the genus Francisella. J. Fish. Dis. **29**:307-311.

2. **Bakkemo KR, Mikkelsen H, Bordevik M, Torgersen J, Winther-Larsen HC, Vanberg C, Olsen R, Johansen LH, Seppola M.** 2011. Intracellular localisation and innate immune responses following Francisella noatunensis infection of Atlantic cod (Gadus morhua) macrophages. Fish Shellfish Immunol. **31**:993-1004.

3. **Soto E, Fernandez D, Hawke JP.** 2009. Attenuation of the fish pathogen Francisella sp. by mutation of the iglC* gene. J. Aquat. Anim. Health **21**:140-149.

4. **Larson CL, Wicht W, Jellison WL.** 1955. A New Organism Resembling P. tularensis Isolated From Water. Public Health Reports **70**:253-258.

5. **Bönquist L, Lindgren H, Golovliov I, Guina T, Sjöstedt A.** 2008. MglA and Igl proteins contribute to the modulation of Francisella tularensis live vaccine strain-containing phagosomes in murine macrophages. Infect. Immun. **76**:3502-3510.

6. **Dios S, Romero A, Chamorro R, Figueras A, Novoa B.** 2010. Effect of the temperature during antiviral immune response ontogeny in teleosts. Fish. Shellfish. Immunol. **29**:1019-1027.

7.**Chen J, Ruan H, Ng SM, Gao C, Soo HM, Wu W, Zhang Z, Wen Z, Lane DP, Peng J.** 2005. Loss of function of def selectively up-regulates Delta113p53 expression to arrest expansion growth of digestive organs in zebrafish. Genes Dev. **19**:2900-2911.

8. **Ottem KF, Nylund A, Isaksen TE, Karlsbakk E, Bergh Ø.** 2008. Occurrence of Francisella piscicida in farmed and wild Atlantic cod, Gadus morhua L., in Norway. J. Fish. Dis. **31**:525-534.

9.**Brudal E, Winther-Larsen HC, Colquhoun DJ, Duodu S.** 2013. Evaluation of reference genes for reverse transcription quantitative PCR analyses of fish-pathogenic Francisella strains exposed to different growth conditions. BMC. Res. Notes **6**:76. doi: 10.1186/1756-0500-6-76