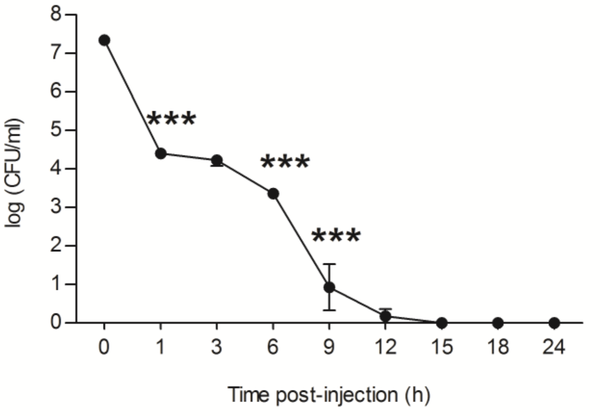
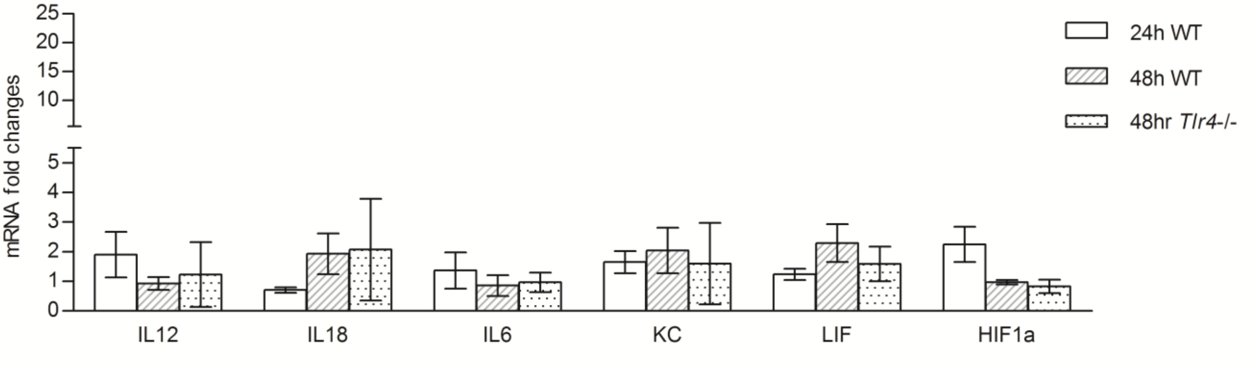
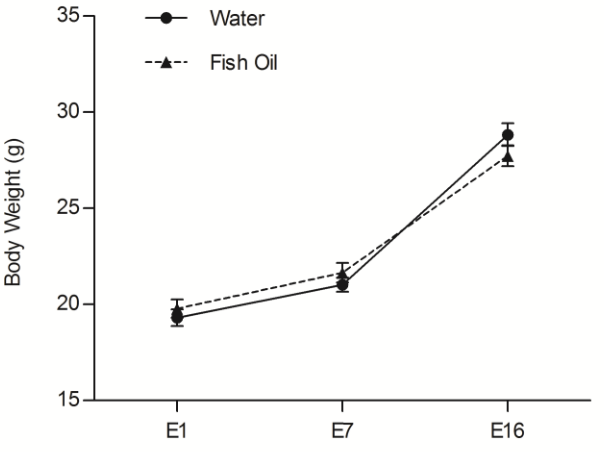


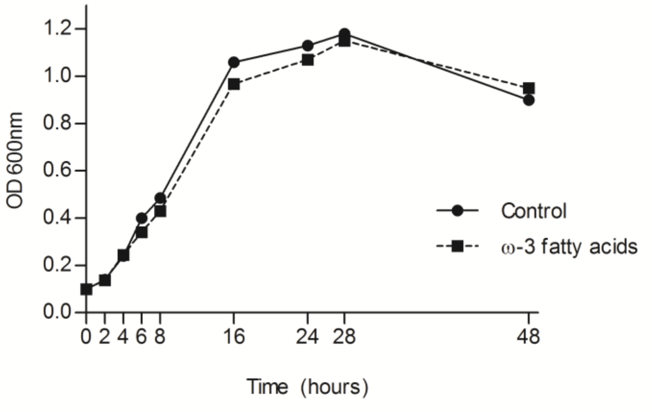
Supplementary Figure S1. Live *F. nucleatum* 12230 titers in mouse blood following tail-vein injection. Approximately 5x10[7] CFU were injected into the tail vein of at least 3 C57BL/6 mice. Blood was collected at indicated times post injection and live bacteria colonies were counted on blood agar plates. Live bacterial titer significantly lower than the immediately proceeding time point was marked by *. The results are presented as mean+ SEM. *** p<0.001. One-way analysis of variance (ANOVA) with Newman-Keuls post test was performed. At least 8 mice were bled in each time point.



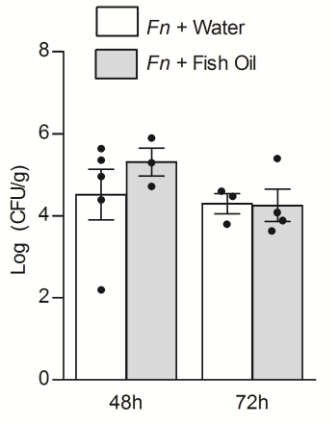
Supplemental Figure S2. On day 16 or 17 of gestation, each C57BL/6 wildtype or *TLR4-/-* mouse received either approximately 10[7] CFU of *F. nucleatum* 12230 or saline. At 24 or 48 hours post-injection, the placentas were collected for RNA extraction. The mRNA levels of inflammatory cytokines and chemokines were measured by real-time quantitative PCR and expressed in fold change compared to the saline-injected control group. At least 4 pregnant mice were used in each group. The results are presented as dot plots with average and SEM. Two-way analyses of variance (ANOVA) was performed with simple effects analysis when the interaction was significant. Post-hoc test using Student-Newman-Keuls (SNK) was applied for post-hoc comparisons. *p<0.05, **p<0.01.



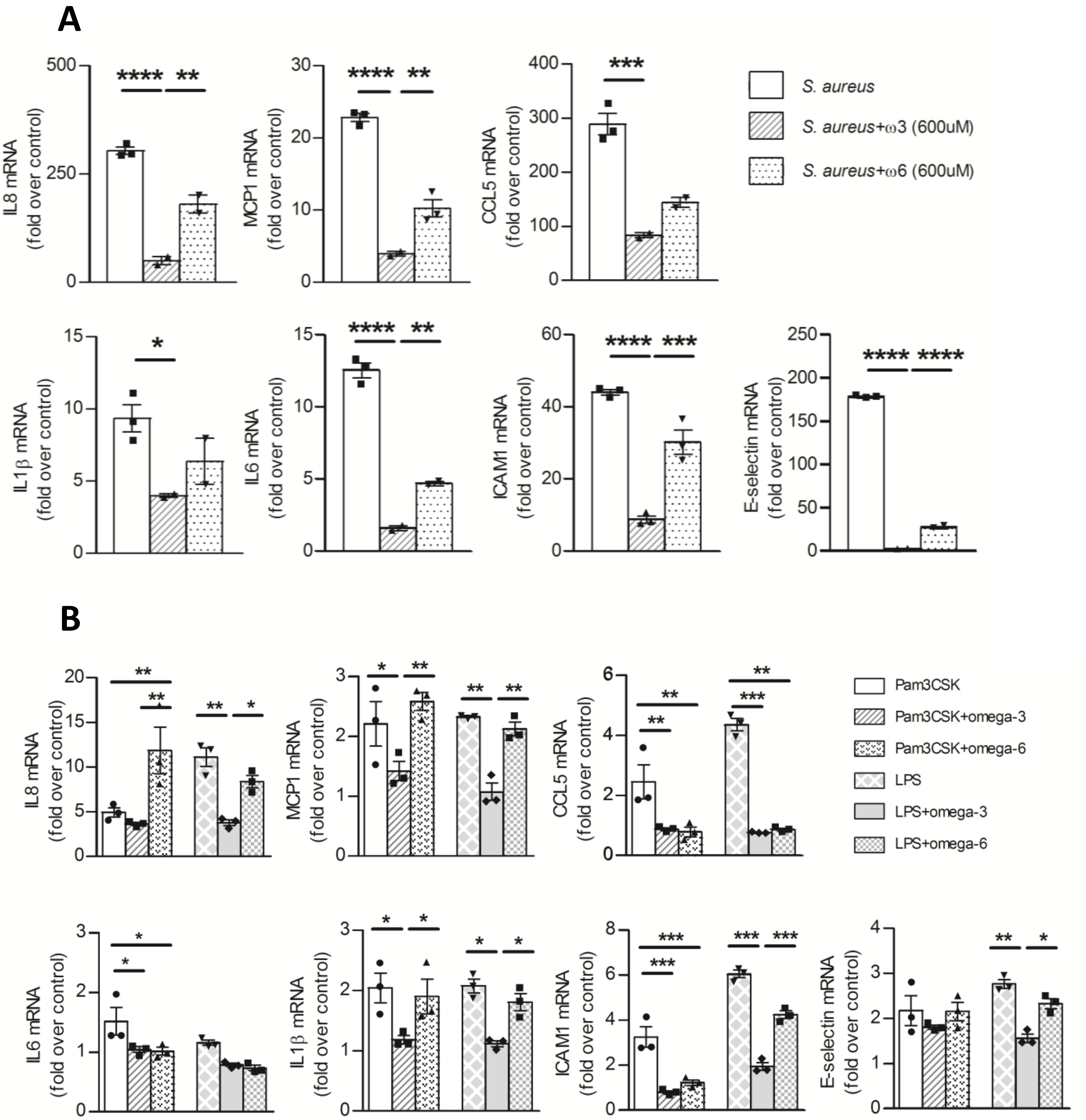
Supplementary Figure S3. Effects of omega-3 fatty acids on body weight of pregnant C57BL/6 mice. Body weights of pregnant C57BL/6 mice gavaged with fish oil (33 mg omega-3 fatty acids) (n=10) or water (n=10) were measured E1, E7 and E16 during gestation. The results are presented as the mean ± SEM.



Supplementary Figure S4. Growth of *F. nucleatum* 12230 with or without omega-3 fatty acids. *F. nucleatum* 12230 were grown in Columbia broth supplemented with or without purified ω-3 fatty acids (600uM) complexed with fatty acid-free BSA at a molar ratio of 4:1. Optical density (600nm) was measured at designated time points.



Supplementary Figure S5. Bacterial proliferation in *TLR4-/-* mouse placentas. Pregnant C57BL/6 *TLR4-/-* mice were gavaged with water or fish oil (33 mg w-3 fatty acids) from day 1 through day 16 or 17 of gestation, when approximately 10^7 CFU of live *F. nucleatum* were injected into tail vein. The live *F. nucleatum* titers in the placenta, expressed as Log(CFU per gram tissue) (y-axis), were determined at 48 and 72 hours post injection by colony counting on blood agar plates. At least 3 pregnant mice were included in each group. The results are presented as the mean ± SEM.



Supplementary Figure S6. Purified omega-3 fatty acids suppress endothelial inflammation induced by both Gram-positive and Gram-negative bacteria. Purified omega-3 (300uM or 600uM) or omega-6 fatty acids (600uM) were complexed with fatty acid-free BSA at a molar ratio of 4:1 and pre-incubated with HUVEC for 3 hrs prior to bacterial infection. A. Log-phase *S. aureus* was incubated with HUVEC at an MOI of 10:1 for 6 hours. B. LPS (1 ug/mL) or Pam3CSK (10 ug/mL) were incubated with HUVEC for 24 hrs. Levels of mRNA were measured by real-time quantitative PCR, expressed in fold change compared to the uninfected control group. Each experiment was performed in triplicates and repeated at least three times. The results are presented as dot plots with average and SEM. One-way analysis of variance (ANOVA) was performed with Bonferroni post-test. **p*<0.05, ***p*<0.01, ****p*<0.001, *****p*<0.0001.

Table 1. Primers used in this study.

m β-actin	F: R:	CARCCGTAAAGACCTCTATGCCAAC ATGGGAGCCACCGATCCACA
m KC	F: R:	GCTGGGATTCACCTCAAGAA TGGGGACACCTTTTAGCATC
m ICAM1	F: R:	GTGATGCTCAGGTATCCATCCA CACAGTTCTCAAAGCACAGCG
m RANTES	F: R:	TGCCCACGTCAAGGAGTATTTC AACCCACTTCTTCTCTGGGTTG
m IL1α	F: R:	ATCAGTACCTCACGGCTGCT TGGGTATCTCAGGCATCTCC
m IL1β	F: R:	GAGCACCTTCTTTCCCTTCATCT GATATTCTGTCCATTGAGGTGGA
m IL6	F: R:	TCCAGTTGCCTTCTTGGGAC GTGTAATTAAGCCTCCGACCTG
m MCP1	F: R:	GCATCCACGTGTTGGCTCA CTCCAGCCTACTCATTGGGATCA
m COX2	F: R:	CAGACAGATTGCTGGCCGGGTTGC GGAGAAGCGTTTGCGGTACTCATT
m IL12 p35	F: R:	AGTTTGGCCAGGGTCATTCC TCTCTGGCCCTCTTCACCAT
m IL18	F: R:	CAAGGAATTGTCTCCCAGTGC CAGCCGCTTTAGCAGCCA
m LIF	F: R:	AATGCCACCTGTGCCATACG CAACTTGGTCTTCTCTGTCCCG
m HIF1α	F: R:	TGCTCATCAGTTGCCACTTC CTTCCACGTTGCTGACTTGA
m GMCSF	F: R:	ATGCCTGTCACGTTGAATGAAG GCGGGTCTGCACACATGTTA
m TNFα	F: R:	CAGAGGGAAGAGTTCCCCAG CCTTGGTCTGGTAGGAGACG
h GAPDH	*F:* R:	*TGCACCACCAACTGC*TT**A**G GATGCAGGGATGATGTTC
h MCP1	F: R:	AGCAAGTGTCCCAAAGAAGC TGGAATCCTGAACCCACTTC
h IL8	F: R:	GACATACTCCAAACCTTTCCACC AACTTCTCCACAACCCTCTGC
h IL1β	F: R:	AAGGCGGCCAGGATATAACT CCCTAGGGATTGAGTCCACA
h IL6	F: R:	CAAATTCGGTACATCCTCGAC GTCAGGGGTGGTTATTGCATC
h RANTES	F: R:	GCTGTCATCCTCATTGCTACTG TGGTGTAGAAATACTCCTTGATGTG
h ICAM1	F: R:	ACCATCTACAGCTTTCCGGC CAATCCCTCTCGTCCAGTCG
h E-selectin	F: R:	AAGGCTTCATGTTGCAGGGA AGCATCGCATCTCACAGCTT