Electronic Supplementary Material (ESI) for Environmental Science: Nano.

Sex dependent effects of silver nanoparticles on the zebrafish gut microbiota

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Supporting Information
(14 pages)

Table S1 MiSeq sequences quality information

Code	**Trimed tags**	**Bases(bp)**	**Average Length (bp)**
FC_1	39088	17043335	436.02
FC_2	21176	9234447	436.08
FC_3	22663	9916591	437.57
FC_4	23529	10221120	434.41
FC_5	35221	15423175	437.9
FH_1	23543	10423293	442.73
FH_2	21091	9294101	440.67
FH_3	27345	12032529	440.03
FH_4	36459	16047935	440.16
FH_5	32077	13963100	435.3
FL_1	29034	12675211	436.56
FL_2	22048	9556084	433.42
FL_3	23210	10039753	432.56
FL_4	33735	14658125	434.51
FL_5	33827	14697908	434.5
FM_1	24775	10867228	438.64
FM_2	30127	13182571	437.57
FM_3	32760	14249387	434.96
FM_4	23029	10051664	436.48
FM_5	37092	16195437	436.63
MC_1	29050	12665018	435.97
MC_2	29096	12833999	441.09
MC_3	29838	13157284	440.96
MC_4	31837	14149109	444.42
MC_5	21700	9531192	439.23
MH_1	31950	13916232	435.56
MH_2	31988	13915580	435.03
MH_3	28483	12458727	437.41
MH_4	31423	13603986	432.93
MH_5	23826	10431807	437.83
ML_1	29501	12969933	439.64
ML_2	28159	12339894	438.22
ML_3	27539	12110961	439.77
ML_4	35190	15437575	438.69
ML_5	38715	17060275	440.66
MM_1	36276	15966317	440.13
MM_2	33847	14882160	439.69
MM_3	27016	11764965	435.48
MM_4	26615	11577701	435.01
MM_5	27970	12198931	436.14

Trimmed tags number: the numbers of reads remaining after the removal of primers and low-quality data

Table S2 Miseq sequences data statistics summary and bacterial diversity based on 97 % OTUs clusters

Sample ID	**Reads**	**OTU**	**ace**	**chao**	**coverage**	**shannon**	**simpson**
MC_1	27310	276	321	321	0.997876	3.04	0.096
MC_2	26038	266	274	276	0.999232	3.25	0.1368
MC_3	27584	219	224	227	0.999637	3.98	0.0432
MC_4	30439	189	195	200	0.999606	2.31	0.3397
MC_5	20649	201	382	315	0.996319	2.91	0.0955
Average	**26404**	**230**	**279**	**268**	**0.998534**	**3.10**	**0.1422**
SD	**3597**	**39**	**75**	**53**	**0.001431**	**0.60**	**0.1153**
ML_1	27991	242	271	280	0.998464	2.01	0.3054
ML_2	27132	143	201	194	0.998268	2.01	0.2548
ML_3	25927	167	214	200	0.998264	1.99	0.2563
ML_4	34157	194	235	233	0.998595	2.11	0.2377
ML_5	36516	216	278	273	0.998302	1.81	0.312
Average	**30345**	**192**	**240**	**236**	**0.998379**	**1.99**	**0.2732**
SD	**4690**	**39**	**34**	**40**	**0.000146**	**0.11**	**0.0333**
MM_1	34983	232	257	267	0.998942	2.73	0.1496
MM_2	32870	136	171	173	0.998844	1.78	0.2979
MM_3	26037	231	275	273	0.997888	2.42	0.2405
MM_4	25717	137	285	220	0.997861	1.71	0.3693
MM_5	27173	185	231	226	0.998123	1.86	0.3517
Average	**29356**	**184**	**244**	**232**	**0.998332**	**2.1**	**0.2818**
SD	**4273**	**48**	**46**	**41**	**0.000524**	**0.45**	**0.0894**
MH_1	30765	122	164	154	0.998765	1.57	0.3898
MH_2	30541	170	269	230	0.998265	2.06	0.2643
MH_3	27428	136	184	176	0.998323	1.4	0.3807
MH_4	30379	108	239	167	0.998552	1.22	0.5137
MH_5	23178	95	228	141	0.998274	1.31	0.4079
Average	**28458**	**126**	**217**	**174**	**0.998436**	**1.51**	**0.3912**
SD	**3252**	**29**	**42**	**34**	**0.000218**	**0.33**	**0.0887**
FC_1	37494	133	180	167	0.998826	1.51	0.4046
FC_2	20662	137	187	168	0.997919	1.53	0.3974
FC_3	21581	134	255	211	0.997405	1.59	0.3501
FC_4	22541	109	158	159	0.998048	1.32	0.5052
FC_5	33092	238	270	273	0.99864	2.92	0.0965
Average	**27074**	**150**	**210**	**196**	**0.998168**	**1.78**	**0.35076**
SD	**7691**	**50**	**49**	**48**	**0.000573**	**0.30**	**0.1530**
FL_1	25512	328	338	341	0.999059	4.02	0.0632
FL_2	21031	72	138	136	0.998193	0.99	0.5836
FL_3	22229	67	98	94	0.998785	0.84	0.637
FL_4	32481	137	212	230	0.998153	1.12	0.5089
FL_5	31657	107	244	181	0.998547	1.31	0.4563

Average	**26582**	**142**	**206**	**196**	**0.998547**	**1.7**	**0.4498**
SD	**5279**	**108**	**94**	**95**	**0.000387**	**1.37**	**0.2269**
FM_1	22951	61	149	137	0.99878	1.23	0.3993
FM_2	28845	128	181	170	0.998267	1.4	0.3761
FM_3	31771	186	235	223	0.998332	1.57	0.4265
FM_4	22246	154	199	185	0.997977	1.51	0.3912
FM_5	35592	261	296	300	0.998651	2.13	0.3018
Average	**28281**	**158**	**212**	**203**	**0.998401**	**1.57**	**0.3790**
SD	**5718**	**74**	**56**	**62**	**0.00032**	**0.34**	**0.0469**
FH_1	22772	156	210	212	0.997804	2.29	0.1548
FH_2	19862	93	214	145	0.997986	1.53	0.2948
FH_3	26365	116	176	165	0.998179	1.5	0.3079
FH_4	34990	144	203	195	0.998457	1.34	0.3504
FH_5	30910	221	264	263	0.998285	2.16	0.2376
Average	**26980**	**146**	**213**	**196**	**0.998142**	**1.76**	**0.2691**
SD	**6090**	**49**	**32**	**46**	**0.000255**	**0.43**	**0.0756**

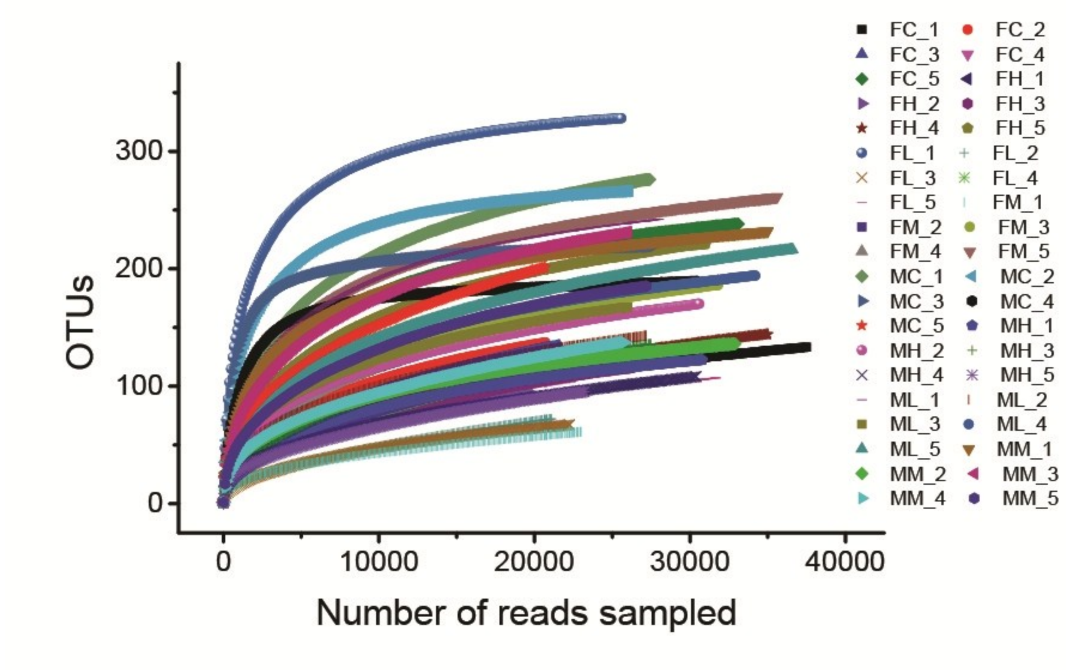

Figure S1 Rarefaction curve of sequences (97% similarity level).

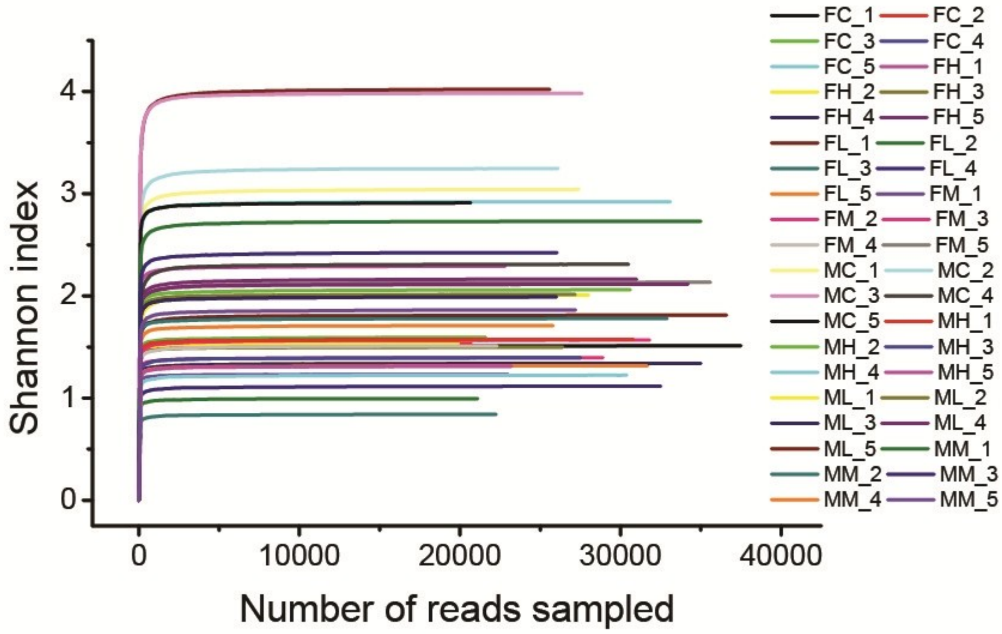

Figure S2 Shannon rarefaction curve of sequences (97% similarity level).

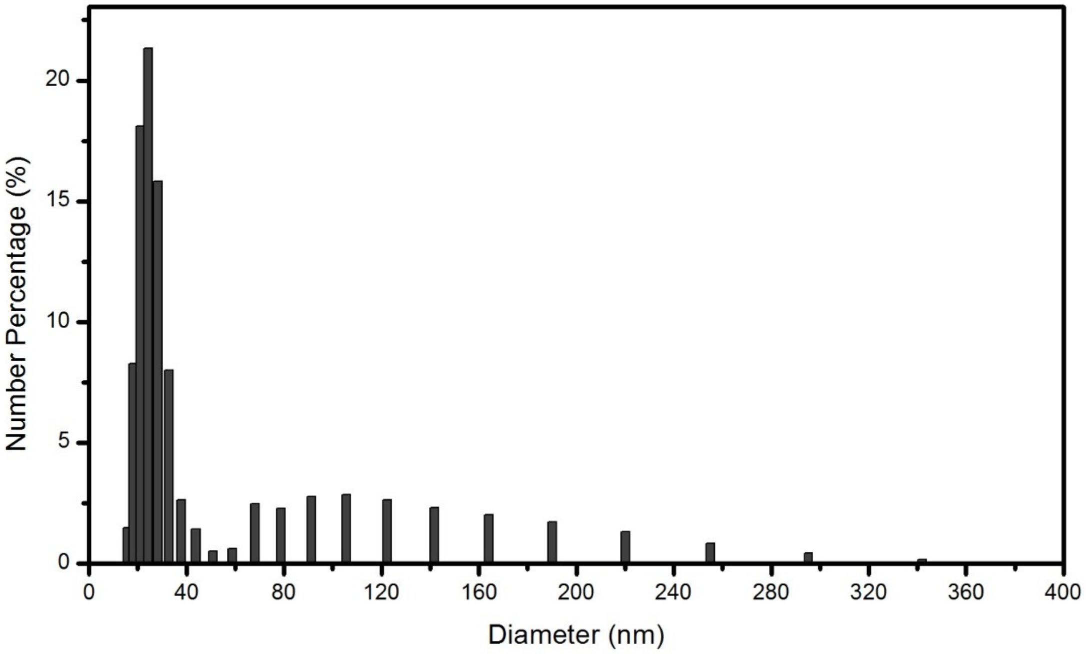

Figure S3 Particle size dispersion of AgNPs measured by DLS

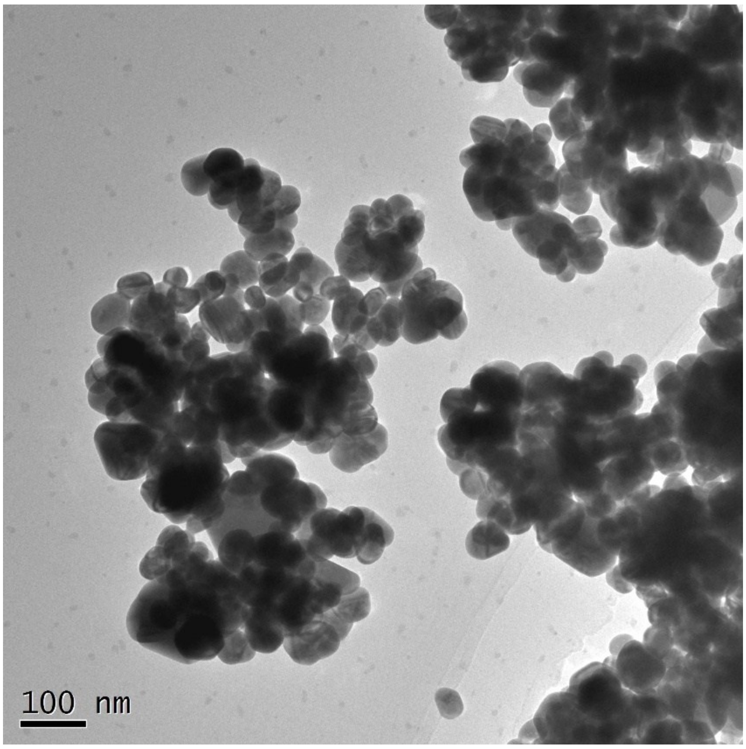

Figure S4 AgNPs image taken by the transmission electron microscope (TEM, FEI Tecnai G2 F20 FEG)

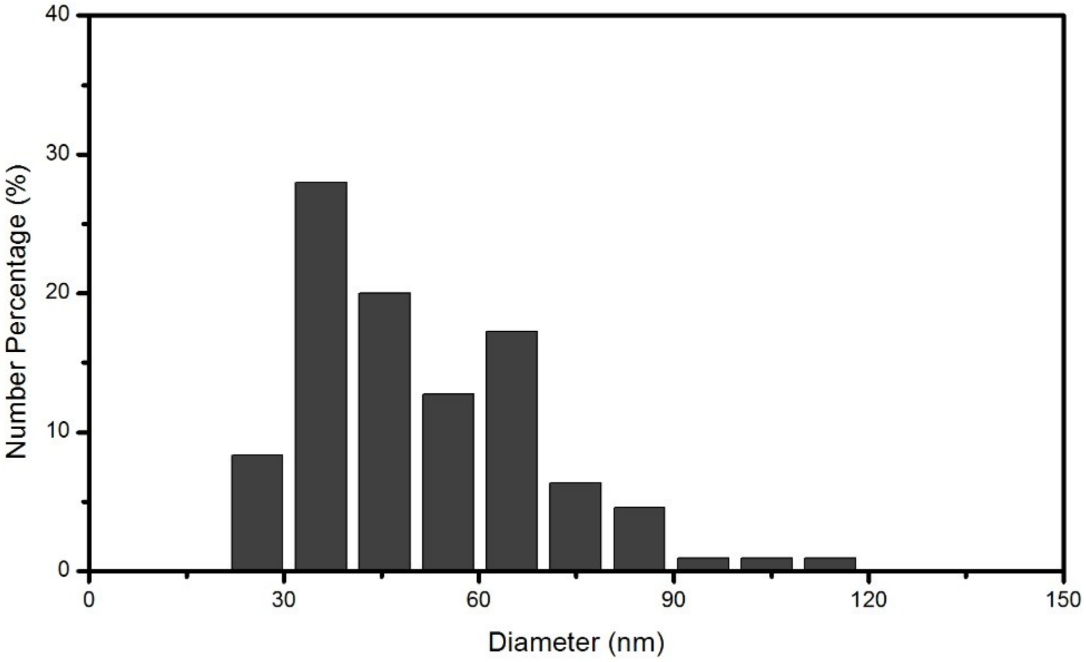

Figure S5 Particle size dispersion of the AgNPs measured by TEM

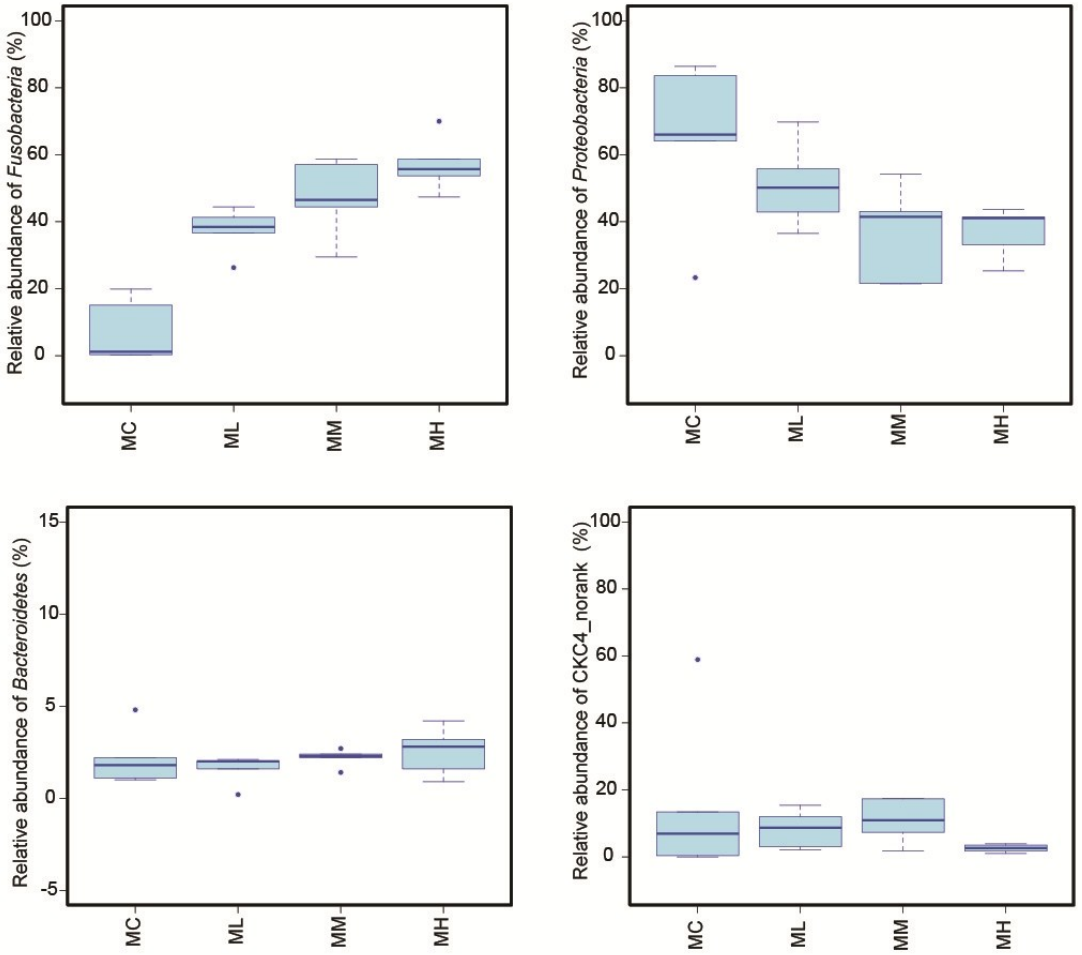

Figure S6 Boxplots (percentage of sequences) of the four most represented phyla in male zebrafish groups.

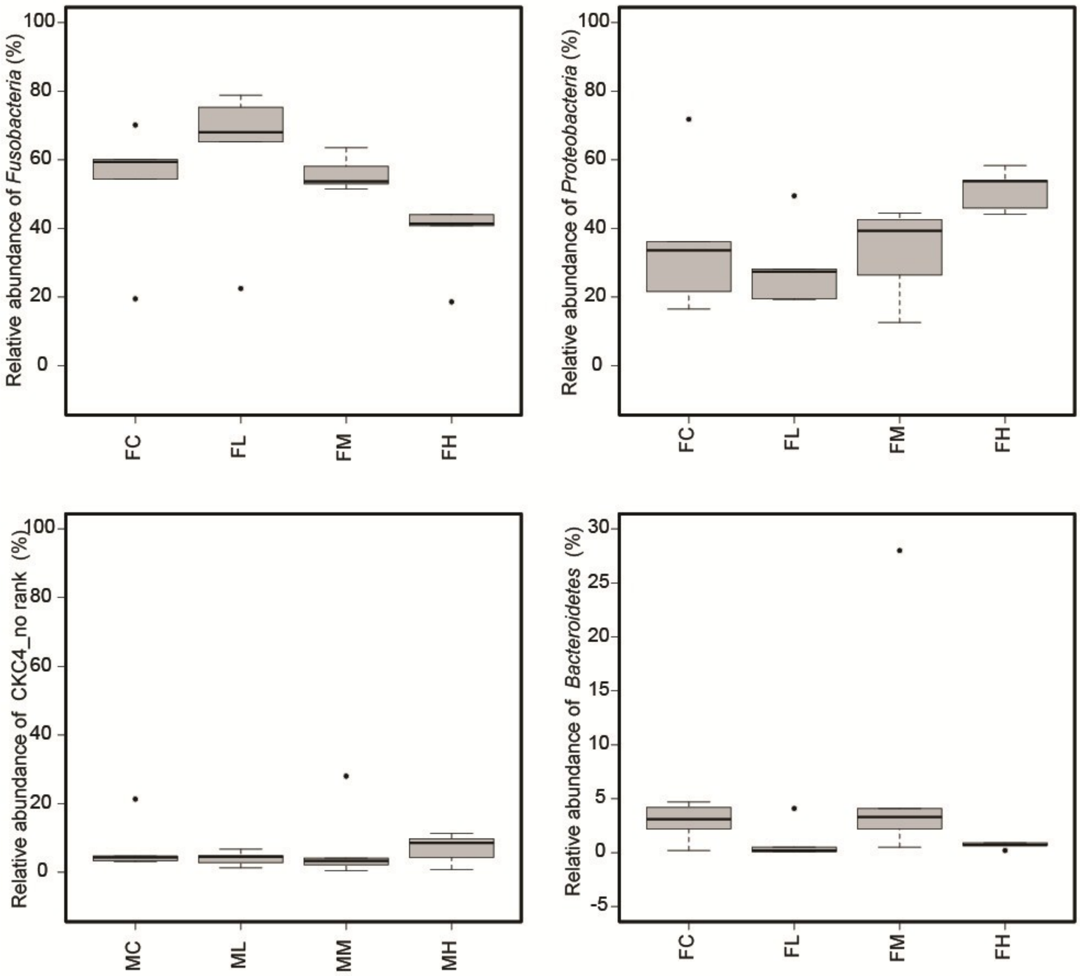

Figure S7 Boxplots (percentage of sequences) of the four most represented phyla in female zebrafish groups.

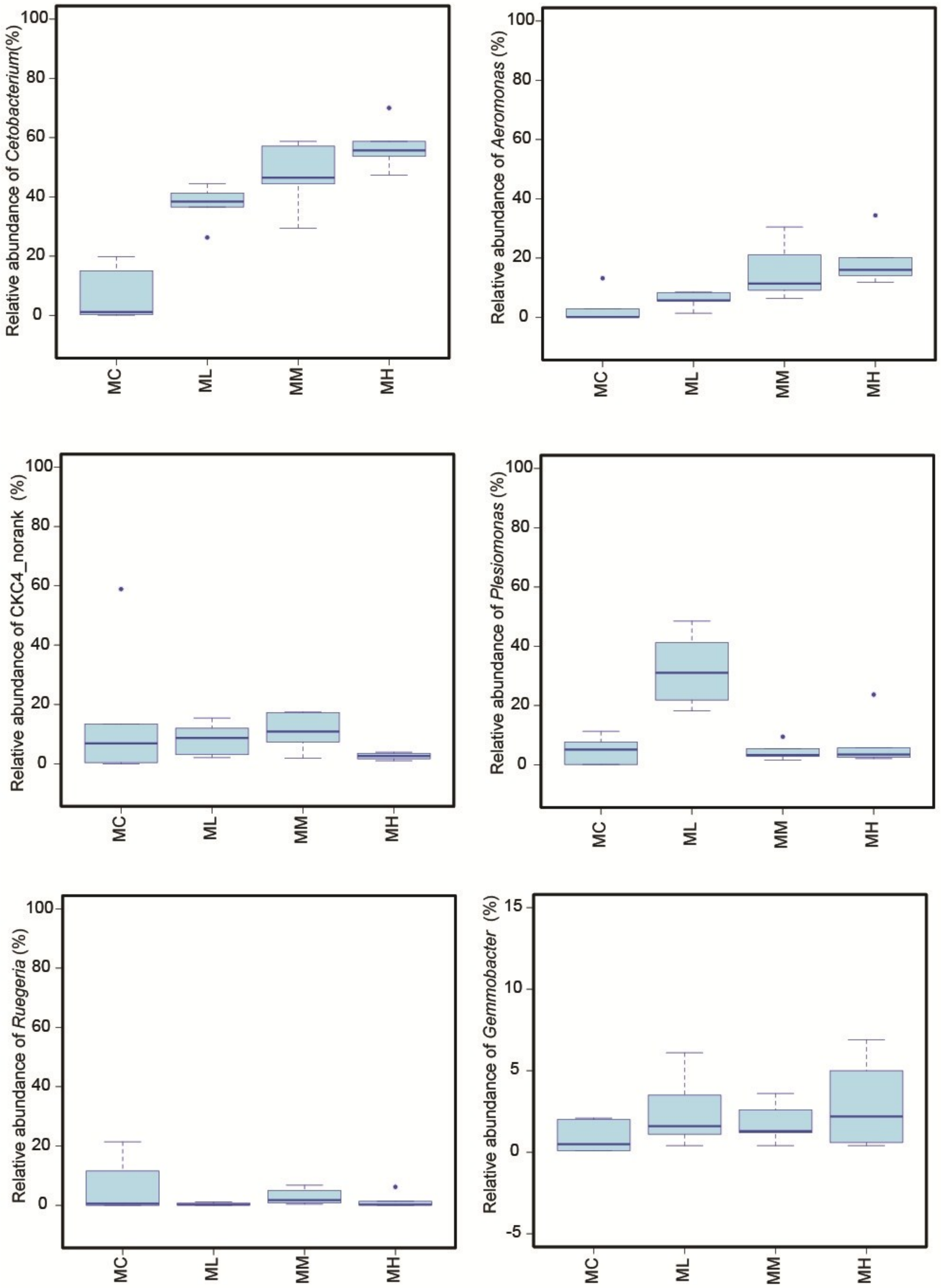

Figure S8 Boxplots (percentage of sequences) of the six most represented genera in male zebrafish groups.

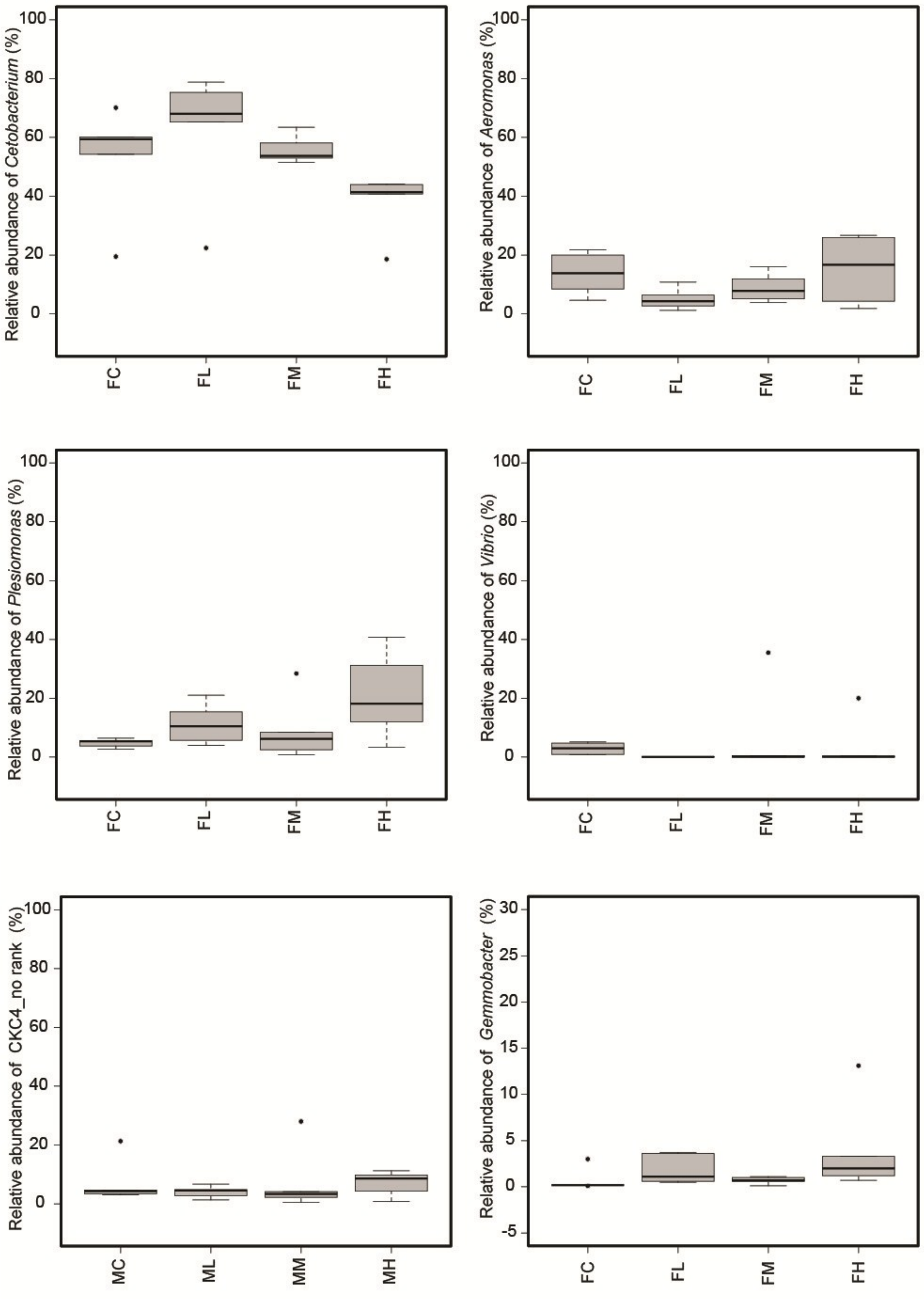

Figure S9 Boxplots (percentage of sequences) of the six most represented genera in female zebrafish groups.

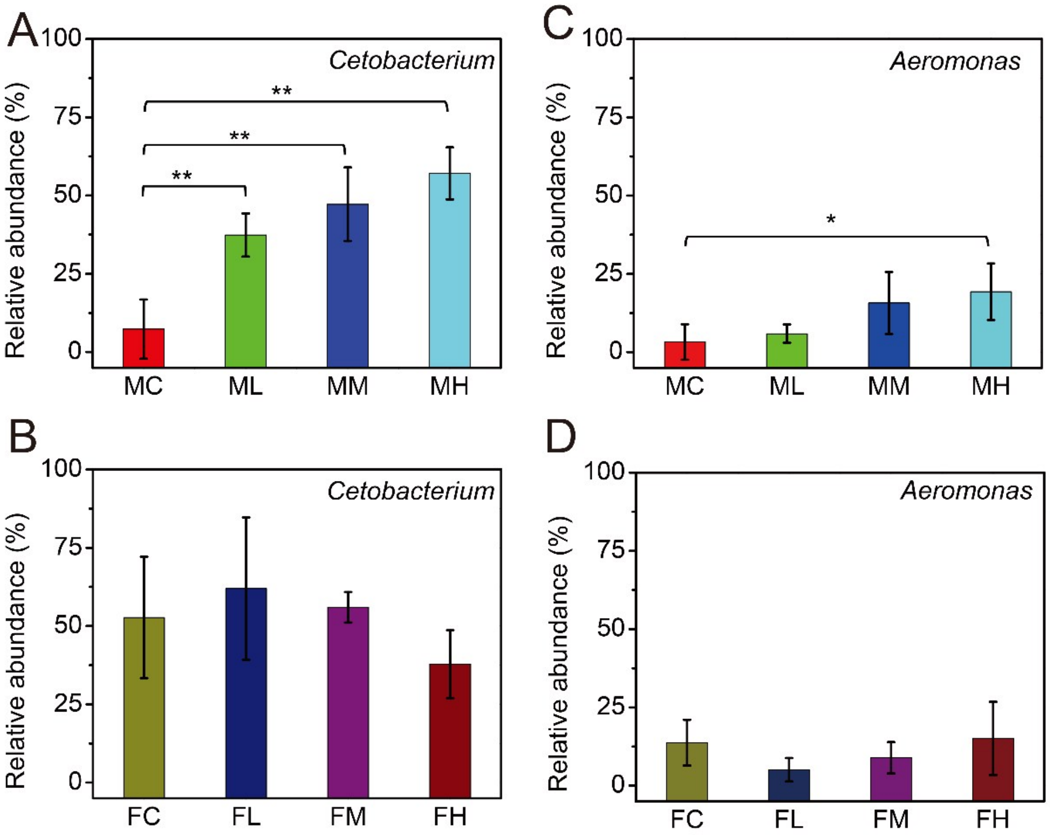

Figure S10 The relative abundance of *Cetobacterium* and *Aeromonas* in male and female zebrafish. Asterisks indicates significant differences (* $p < 0.05$, ** $p \leq 0.01$).