Table 1. Bibliographic information obtained from certain genera with probiotic potential in fish

Bacteria	Function	Description	Fish	Reference
Aeromonas hydrophila	probiotic	antagonist	*Oncorhynchus mykiss*	Irianto A, Austin B (2002b). Use of probiotics to control furunculosis in rainbow trout, *Oncorhynchus mykiss* (Walbaum). J. Fish Dis. 25:1–10. doi: 10.1046/j.1365-2761.2002.00375.x
Aeromonas salmonicida	pathogen	etiological agent of septicemic disease	*Oncorhynchus mykiss*	
Rhodococcus qingshengii	probiotic	antagonist	*Salevinus fontinalis*	Boutin S, Bernatchez L, Audet C, Derôme N (2012). Antagonistic effect of indigenous skin bacteria of brook charr (*Salvelinus fontinalis*) against Flavobacterium columnare and F.psychrophilum. Vet. Microbiol. 155: 355–361. doi: 10.1016/j.vetmic.2011.09.002
Flavobacterium psychrophilum	pathogen	systemic infectious agent	*Salevinus fontinalis*	
Cetobacterium somerae	probiotic	vitamin B12 production	various	Tsuchiya C, Sakata T, Sugita H (2008). Novel ecological niche of *Cetobacterium somerae*, an anaerobic bacterium in the intestinal tracts of (1), 43–48.reshwater fish. Lett. Appl. Microbiol. 46:43–48. doi:10.1111/j.1472-765X.2007.02258.x
Vibrio fluvialis	probiotic	Immune stimulation and improved survival after challenge with *Aeromonas salmonicida*	*Oncorhynchus mykiss*	Irianto A & Austin B (2002a). Use of probiotics to control furunculosis in rainbow trout *Oncorhynchus mykiss* (Walbaum). J Fish Dis 25: 333–342
Lactococcus lactis CECT 539	probiotic	Immune stimulation	*Scophthalmus maximus*	Villamil L, Tafalla C, Figueras A, Novoa B (2002). Evaluation of immunomodulatory effects of lactic acid bacteria in turbot (*Scophthalmus maximus*). Clin Diagn Lab Immunol 9:1318–1323.
Lactobacillus delbrueckii CECT 287	probiotic	Immune stimulation	*Sparus aurata*	Salinas I, Cuesta A, Esteban MA, Meseguer J (2005). Dietary administration of *Lactobacillus delbriieckii* and *Bacillus subtilis*, single or combined, on gilthead sea bream cellular innate immune responses. Fish Shellfish Immunol 19: 67–77.
Bacillus subtilis CECT 35	probiotic	Immune stimulation	*Sparus aurata*	
Aeromonas sobria GC2	probiotic	Immune stimulation and improved survival after challenge with *Lactococcus garvieae* and *Streptococcus iniae*	*Oncorhynchus mykiss*	Brunt J, Austin B (2005). Use of a probiotic to control lactococcosis and streptococcosis in rainbow trout, *Oncorhynchus mykiss* (Walbaum). J Fish Dis 28: 693–701.
Lactobacillus rhamnosus ATCC 53103	probiotic	Immune stimulation and improved survival after challenge with *Edwardsiella tarda*	*Oreochromis niloticus*	Pirarat N, Kobayashi T, Katagiri T, Maita M, Endo M (2006). Protective effects and mechanisms of a probiotic bacterium *Lactobacillus rhamnosus* against experimental *Edwardsiella tarda* infection in tilapia (*Oreochromis niloticus*). Vet Immunol Immunopathol, 113: 339–347.
Carnobacterium inhibens	probiotic	antibacterial activity against fish pathogens	*Salmo salar*	Joborn A, Dorsch M, Olsson JC, Westerdahl A, Kjelleberg S (1999). *Carnobacterium inhibens* sp nov., isolated from the intestine of Atlantic salmon (Salmo salar). Int. J. Syst. Bacteriol. 49:1891–1898.
Enterobacter amnigenus	probiotic	increased resistance toward *Flavobacterium psychrophilum*	*Oncorhynchus mykiss*	Irianto A, Austin B (2002b). Use of probiotics to control furunculosis in rainbow trout, *Oncorhynchus mykiss* (Walbaum). J. Fish Dis. 25:1–10. doi: 10.1046/j.1365-2761.2002.00375.x

Table 2. Total reads by sex/origin and wild/cultivated

Organisms	Reads	
	Wild	Cultivated
Female	99,513	59,539
Male	137,792	67,891
Subtotal	237,305	127,430
Total	364,735	

Table 3. Alpha diversity analysis per sample, sex/origin and origin

Sample	Chao1	S.D. (Chao1)	Obs. OTUs	S.D. (Obs. OTUs)	P.D.	S.D. (P.D.)	Shannon	S.D. (Shannon)
AtropFF.5	250.20 ^{h}	57.17	179 ^{fg}	53.77	6.09 ^{fg}	1.27	4.12 ^{k}	0.12
AtropFF.6	229.41 ^{g}	56.92	154 ^{g}	49.37	6.36 ^{g}	1.52	3.54 ^{j}	0.11
AtropFF.7	241.60 ^{h}	46.18	185 ^{j}	51.61	9.16 ^{j}	1.64	4.46 ^{m}	0.13
AtropFM.1	75.65 ^{b}	22.22	54 ^{a}	15.88	2.60 ^{a}	0.61	1.50 ^{c}	0.06
AtropFM.2	144.24 ^{e}	40.38	97 ^{d}	31.52	4.10 ^{d}	0.94	2.03 ^{e}	0.10
AtropFM.3	101.88 ^{d}	29.58	69 ^{a}	21.85	2.54 ^{a}	0.51	2.52 ^{f}	0.07
AtropFM.4	210.05 ^{f}	50.58	146 ^{f}	46.20	5.94 ^{f}	1.38	3.24 ^{h}	0.11
AtropWF.1	92.24 ^{c}	29.32	60 ^{e}	20.20	4.79 ^{e}	1.20	1.18 ^{b}	0.06
AtropWF.2	456.85 ^{j}	110.76	296 ^{k}	98.54	13.52 ^{k}	3.52	5.43 ^{n}	0.17
AtropWF.3	262.49 ^{i}	61.28	186 ^{i}	56.11	7.64 ^{i}	1.67	4.43 ^{l}	0.13
AtropWM.4	49.84 ^{a}	14.01	37 ^{e}	11.28	4.60 ^{e}	0.72	0.86 ^{a}	0.06
AtropWM.6	216.94 ^{f}	69.18	119 ^{h}	42.08	7.05 ^{h}	3.10	3.29 ^{i}	0.09
AtropWM.7	141.11 ^{e}	36.74	97 ^{c}	30.10	3.63 ^{c}	0.90	3.16 ^{g}	0.08
AtropWM.8	94.20 ^{cd}	34.04	59 ^{b}	18.75	3.31 ^{b}	1.52	1.57 ^{d}	0.07

Kruskal-Wallis = p<0.01

Sex/Origin	Chao1	S.D. (Chao1)	Obs. OTUs	S.D. (Obs. OTUs)	P.D.	S.D. (P.D.)	Shannon	S.D. (Shannon)
FF	465.74 ^{a}	67.21	402 ^{a}	91.40	14.62 ^{a}	2.47	4.22 ^{a}	0.06
FM	374.76 ^{b}	66.59	302 ^{b}	79.96	9.57 ^{b}	2.04	3.24 ^{b}	0.05
WF	803.73 ^{c}	120.84	675 ^{c}	169.82	23.74 ^{c}	4.77	5.57 ^{c}	0.09
WM	447.04 ^{d}	88.21	339 ^{d}	98.71	15.49 ^{d}	4.50	4.05 ^{d}	0.05

Kruskal-Wallis = p<0.01

Origin	Chao1	S.D. (Chao1)	Obs. OTUs	S.D. (Obs. OTUs)	P. D.	S.D. (P.D.)	Shannon	S.D. (Shannon)
Farm	543.24 ^{a}	76.85	486 ^{a}	105.77	16.29 ^{a}	2.79	3.88 ^{a}	0.07
Wild	1090.53 ^{b}	178.13	912 ^{b}	239.31	31.67 ^{b}	7.35	5.35 ^{b}	0.10

W of Mann-Whitney (Wilcoxon) p<0.01

Multiple Range Test for Kruskal-Wallis (Bonferroni post-hoc):
- Different letters = p <0.01
- Equal letters = p> 0.05

FF farmed o cultivated female
FM farmed o cultivated male
WF wildtype female
WM wildtype male