

Shannon Balfry

Peer-Reviewed Journal Publications:

1. Shaughnessy, C.A., **Balfry**, S.K., Bystriansky, J.S. (2016) Growth and osmoregulation of wolf eel (*Anarrhichthys ocellatus*) in dilute salinities. Submitted September 2016, Journal of Fish Biology.
2. Reid, G.K., Forster, I., Cross, S., Pace, S., Balfry, S., Dumas, A. (2016) Growth and diet digestion of cultured sablefish: Implications for nutrient waste production and Integrated Multi-Trophic Aquaculture. Accepted, December 2016, Aquaculture.
3. Jones, S.R.M., Thoney, D.A., Balfry, S.K. (2014) Comparative efficacy of formalin, freshwater and hydrogen peroxide against (*Gyrodactylus corti*) infestations on captive wolf-eels (*Anarrhichthys ocellatus*). Bulletin of the European Association of Fish Pathologists 35: 64-69.
4. Kim, J-H, Balfry, S., Devlin, R.H. (2013) Disease resistance and health parameters of growth-hormone transgenic and wild-type coho salmon, *Oncorhynchus kisutch*. Fish and Shellfish Immunology 34: 1553-1559.
5. Friesen, E.N., Balfry, S.K., Skura, B.J., Ikonou, M.G., Higgs, D.A. (2013) Evaluation of cold-pressed flaxseed oil as an alternative dietary lipid source for juvenile sablefish (*Anoplopoma fimbria*) Aquaculture Research 44: 182-199.
6. Friesen, E., Balfry, S.K., Skura, B.J., Ikonou, M., Higgs, D.A. (2013) Evaluation of poultry fat and blends of poultry fat with cold pressed flaxseed oil as supplemental dietary lipid sources for juvenile sablefish (*Anoplopoma fimbria*). Aquaculture Research 44: 300-316.
7. Balfry, S., Welch, D., Atkinson, J., Lill, A., Vincent, S. (2011) The Effect of Hatchery Release Strategy on Marine Migratory Behaviour and Apparent Survival of Seymour River Steelhead Smolts (*Oncorhynchus mykiss*). PLoS ONE (March 29, 2011) 10.1371/journal.pone.0014779.
8. Chittenden, C.M., Jensen, J, Ewart, D., Anderson, S., Balfry, S., Downey, E., Eaves, A., Saksida, S., Smith, B., Vincent, S., Welch, D., McKinley, R.S. (2010) Recent salmon declines: a result of lost feeding opportunities due to bad timing? PLoS ONE (August 27, 2010) 0.1371/journal.pone.0012423
9. Skinner, L.A., LaPatra, S.E., Adams, A., Thompson, K.D., Balfry, S.K., McKinley, R.S., Schulte, P.M. (2010) Concurrent injection of a rhabdovirus-specific DNA vaccine with a polyvalent, oil-adjuvanted vaccine delays the specific antiviral immune response in Atlantic salmon, *Salmo salar* L. Fish and Shellfish Immunology. 28:387-393.
10. Skinner, L.A., LaPatra, S.E., Adams, A., Thompson, K.D., Balfry, S.K., McKinley, R.S., Schulte, P.M. (2010) Supra-physiological levels of cortisol suppress lysozyme but not the antibody response in Atlantic salmon, *Salmo salar* L., following vaccine injection. Aquaculture. 300: 223-230.
11. Skinner, L.A., Schulte, P.M., Balfry, S.K., McKinley, R.S., LaPatra, S.E. (2010) The association between metabolic rate, immune parameters, and growth performance of rainbow trout, *Oncorhynchus mykiss* (Walbaum), following the injection of a DNA vaccine alone and concurrently with a polyvalent, oil-adjuvanted vaccine. Fish and Shellfish Immunology. 28: 387-393.
12. Rummer, J.L., Roshan-Moniri, M., Balfry, S.K., Brauner, C.J. (2010) Use it or lose it? Sablefish, *Anoplopoma fimbria*, a species representing a fifth teleostean group where the β NHE associated with the red blood cell adrenergic stress response has been secondarily lost. Journal of Experimental Biology 213: 1503-1512.

13. Shelley, L.S., Balfry, S., Ross, P.S., Kennedy, C.J. (2009) Immunotoxicology of sub-chronic exposure to selected current-use pesticides on the immune system of rainbow trout (*Oncorhynchus mykiss*). *Aquatic Toxicology* 92: 95-103.
14. Huang, S.S.Y., Fu, H.L., Higgs, D.A., Balfry, S.K., Schulte, P., Brauner, C.J. (2008) Chronic effects of dietary canola oil level on the growth performance, fatty acid composition and ionoregulatory development of spring Chinook salmon parr, *Oncorhynchus tshawytscha*. *Aquaculture* 274: 109-117.
15. Skinner, L.A., Schulte, P.M., LaPatra, S.E., Balfry, S.K., McKinley, R.S. (2008) Growth and performance of Atlantic salmon (*Salmo salar* L.) following administration of a rhabdovirus DNA vaccine alone or concurrently with an oil-adjuvanted, polyvalent vaccine. *Journal of Fish Diseases* 31: 687-697.
16. Grant, A.M., Baker, D., Higgs, D.A., Brauner, C.J., Richards, J.G., Balfry, S.K., Schulte, P.M. (2008) Long-term effects of dietary canola oil on growth, fatty acid composition and osmoregulatory ability of juvenile fall Chinook salmon (*Oncorhynchus tshawytscha*). *Aquaculture* 277: 303-312.
17. Chittenden, C.M., Sura, S., Butterworth, K.G., Cubitt, K.F., Plantalech, N., Balfry, S., Okland, F., McKinley, R.S. (2008) Riverine, estuarine and marine migratory behaviour and physiology of wild and hatchery-reared coho salmon (*Oncorhynchus kisutch*) smolts descending the Campbell River, BC. *Journal of Fish Biology*. 72: 614-628.
18. Ikonomidou, M.G., Higgs, D.A., Gibbs, M., Oakes, J., Skura, B., McKinley, S., Balfry, S.K., Jones, S., Dubetz, C. (2007) Flesh quality of market-size farmed and wild British Columbia salmon. *Environmental Science and Technology* 41: 437-443.
19. Sutton, J., Balfry, S., Higgs, D., Huang, C.-H., Skura, B. (2006) Impact of iron-catalyzed dietary lipid peroxidation on growth performance, general health and flesh proximate and fatty acid composition of Atlantic salmon (*Salmo salar*) in seawater. *Aquaculture*. 257: 534-557.
20. Higgs, D.A., Balfry, S.K., Oakes, J., Rowshandeli, M., Deacon, G. (2006) Efficacy of an equal blend of canola oil and poultry fat as an alternate dietary lipid source for Atlantic salmon in sea water. I. Effects on growth performance, whole body and fillet proximate and lipid composition. *Aquaculture Research* 37: 180-191.
21. Balfry, S.K., Oakes, J., Rowshandeli, M., Deacon, G., Skura, B., Higgs, D.A. (2006) Efficacy of an equal blend of canola oil and poultry fat as an alternate dietary lipid source for Atlantic salmon in sea water. II. Effects on hematology and immunocompetence. *Aquaculture Research* 37: 192-199.
22. Tierney, K.G., Balfry, S.K., Farrell, A.P. (2005) Subclinical *Listonella anguillarum* infection does not impair recovery of swimming performance in rainbow trout *Oncorhynchus mykiss*. *Diseases of Aquatic Organisms* 67: 81-86.
23. Huang, C.-H., Balfry, S.K., Higgs, D.A., Devlin, R.H. (2004) Effect of dietary vitamin E level on growth, tissue lipid peroxidation, and erythrocyte fragility of transgenic coho salmon, (*Oncorhynchus kisutch*). *Comparative Biochemistry and Physiology Part A*, 139: 199-204.
24. Balfry, S.K., Iwama, G.K. (2004) Observations on measurements of lysozyme activity in coho salmon (*Oncorhynchus kisutch*). *Comparative Biochemistry and Physiology Part B*. 138: 207-211.
25. Wagner, G.N., Balfry, S.K., Higgs, D.A., Farrell, A.P. (2004) Dietary fatty acid composition affects the repeat swimming performance of Atlantic salmon in seawater. *Comparative Biochemistry and Physiology Part A* 137: 567-576.
26. Balfry, S.K., Maule, A.G., Iwama, G.K. (2001) Coho salmon *Oncorhynchus kisutch* strain differences in disease resistance and non-specific immunity, following immersion challenges with *Vibrio anguillarum*. *Diseases of Aquatic Organisms* 47: 39-48.

27. Balfry, S.K., Shariff, M., Iwama, G.K. (1997) Strain differences in non-specific immunity of tilapia (*Oreochromis niloticus*) following challenge with *Vibrio parahaemolyticus*. *Diseases of Aquatic Organisms* 30: 77-80.
28. Balfry, S.K., Heath, D.D., Iwama, G.K. (1997) Genetic analysis of lysozyme activity and resistance to vibriosis in farmed Chinook salmon, *Oncorhynchus tshawytscha* (Walbaum). *Aquaculture Research* 28: 893-899.
29. Morgan, J.D., Balfry, S.K., Vijayan, M.M., Iwama, G.K. (1996) Physiological responses to hyposaline exposure and handling and confinement stresses in juvenile dolphin (mahimahi: *Coryphaena hippurus*). *Canadian Journal of Fisheries and Aquatic Sciences* 53: 1736-1740.
30. Balfry, S.K., Albright, L.J., Evelyn, T.P.T. (1996) Horizontal transfer of *Renibacterium salmoninarum* among farmed salmonids via the fecal-oral route. *Diseases of Aquatic Organisms* 25: 63-69.
31. Albright, L.J., McCrae, S.K. (nee Balfry) (1987) Annual cycle of bacterial specific biovolumes in Howe Sound, a Canadian West Coast Fjord Sound. *Applied and Environmental Microbiology* 53: 2739-2744.
32. Albright, L.J., McCrae, S.K. (nee Balfry) (1987) General microbial ecology: annual bacterioplankton biomasses and productivities in a temperate west coast Canadian fjord. *Applied and Environmental Microbiology* 53: 1277-1285.
33. Albright, L.J., McCrae, S.K. (nee Balfry), May, B.E. (1986) General microbial ecology: attached and free-floating bacterioplankton in Howe Sound, British Columbia, a coastal marine fjord-embayment. *Applied and Environmental Microbiology* 51: 614-621.

Published Book Chapter:

Balfry, S.K., Higgs, D.A. (2001) Influence of dietary lipid composition on the immune system and disease resistance of finfish. In: *Nutrition and Fish Health*. Lim, C., Webster, C.D (eds.) Haworth Press, NY. pp. 213-234.