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### Development of a stickleback model for ectoparasite skin infection studies

Ectoparasite infection is a major issue concerning the aquaculture industry, causing major problems on salmon farms through sea lice infection. It is likely that ectoparasitism has an effect on the normal flora of skin and could result in the development of secondary microbial infections. However, the healthy skin microbiota of fish and the effect of ectoparasites on the microbiota have not been studied in great depth. This project aimed to investigate the skin microbiota of three-spined stickleback fish infected with *Gyrodactylus* ectoparasites as a model for other ectoparasite infections. Bacterial swabs were collected from fish living in different environments from North Uist, Scotland, with varying water quality and salinity. Bacteria were cultured in Tryptone Soy Broth, streaked out onto Tryptone Soy Agar (TSA) and grown under oxygen depleted conditions. Individual colony characteristics and antibiotic resistance profiles were determined and those with different morphologies used for DNA extractions. The V3-V6 region of the 16s rDNA gene was sequenced and used to determine the taxonomy of the bacteria. All the bacteria found appeared to be Gram-negative, rod-shaped bacteria. This finding coincides with the results of the sequencing as most of the bacteria were found to belong to the phylum Proteobacteria. All the bacteria cultured were resistant to B-lactam antibiotics, but susceptible to tetracycline and 41% to erythromycin. In conclusion, it is likely that there is a difference between the composition of the microbiota of sticklebacks living in different environments and that the anadromous populations could act as a model for studying the effects of sea lice infection on the skin microbiota of salmon.