May 5, 2022

Prof. Dr. John R. Turner

Editor-in-Chief

Biology

Dr. Turner,

We are pleased to submit the manuscript by Figueroa and collaborators entitled “Commercial vaccines do not confer protection against two genetic strains of *Piscirickettsia salmonis*, LF-89 and EM-90, in Atlantic salmon” to be considered for publication in *Biology.* In Atlantic salmon, vaccines have failed to control and prevent *Piscirickettsiosis*, for reasons that remain elusive. *Piscirickettsiosis* is a severe bacterial disease-producing millions of fish dead and elevated use of antibiotics every year in Chile. It also affects other main salmon producing countries, namely, Norway, Canada, and Scotland. This work reports that two commercial vaccines developed with the *P. salmonis* AL10005 and AL 20542 strains do not confer protection against LF-89 and EM-90 isolates of *Piscirickettsia*, which are considered highly ubiquitously prevalent in Chile. Our result supports the hypothesis that pathogens heterogeneity may explain low vaccine efficacy.

The impact of our results are very significant since it shows that vaccine efficacy is low under conditions that mimic field conditions. In Chile, vaccine efficacy studies are not public and must consider the pathogen’s heterogeneity fish and the field conditions such as coinfection and route of infection (injection versus cohabitation). As such, we consider this work highly appropriate for publication by *Biology* because it will contribute to knowledge regarding vaccination for pathogen control in aquaculture, an aspect that is required for the sustainability of the global salmon industry.

The manuscript has been submitted as requested. All authors have approved the manuscript and agree with its submission to *Biology*. We confirm that neither the manuscript nor any parts of its content are currently under consideration or published in another journal.

We look forward to your response.

Sincerely,



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