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Novel media for the culture of the salmonid pathogen *Piscirickettsia salmonis* and their biotechnological uses in the salmon industry

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Piscirickettsia salmonis is a facultative intracellular Gram-negative bacterium isolated from salmonids in Chile and constitutes one of the main problems in farmed salmonids and marine fish around the world. The use of artificial media represents an alternative to diminish the cost of cell lines and reduces contamination problems. Recently, we have developed the first broth media and two new solid blood-free media termed Astral SRS-Broth and Austral-TSFe agar and Austral-TSHem agar. These novel media have shown to be proper for the bacterial isolation and routine culture in the laboratory. Moreover, the data obtained with AUSTRAL-SRS broth indicate that this medium can be successfully used in susceptibility tests of *P. salmonis* isolates and the CLSI accept and indicate this media in the new guideline edition 2014. The *in vitro* drug susceptibility tests contribute to an understanding of the pharmacokinetic data in fish as well as evaluate the drug resistance of this pathogen. Indeed, the genome sequencing of a highly pathogenic strain AUS005 let us to study the expression levels of several multi drug resistance pumps. Finally, the purification immunogenic protein obtained from *P. salmonis* provides a suitable platform to simplify the preparation of a new class of low-cost vaccine that shown high rate of protection. These new biotechnological tools will help salmon producers to take treatment decisions and control the disease.

Biography

Alejandro J Yáñez Cárcamo has completed his PhD at the age of 32 years from Universidad Austral de Chile University and Doctoral studies from UMKC, USA. He is the Director of Austral Omics, a service organization that provides a transversal solution to the researchers. He has published more than 60 papers in reputed journals contributing to the knowledge of metabolism and applied microbiology.

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