

Growth Inhibition of Bacterial Fish Pathogens and Quorum-Sensing Blocking by Bacteria Recovered from Chilean Salmonid Farms

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Resumen

The main goal of this study was to find bacterial isolates with the ability to inhibit the growth of the fish pathogens *Aeromonas hydrophila*, *Vibrio anguillarum*, and *Flavobacterium psychrophilum* and to inhibit the blockage of the quorum-sensing (QS) system. A total of 80 gram-negative strains isolated from various freshwater Chilean salmonid farms were studied. We determined that 10 strains belonging to the genus *Pseudomonas* inhibited at least one of the assayed fish pathogens. Of these, nine strains were able to produce siderophores and two strains were able to inhibit the growth of all assayed pathogenic species. When the 80 strains were examined for QS-blocking activity, only the strains *Pseudomonas* sp. FF16 and *Raoultella planticola* R5B1 were identified as QS blockers. When the QS-blocker strains were analyzed for their ability to produce homoserine lactone (HSL) molecules, thin-layer chromatography analysis showed that both strains were able to produce C6-HSL- and C8-HSL-type molecules. Strain R5B1 did not show growth inhibition properties, but strain FF16 also led to inhibition of growth in *A. hydrophila* and *F. psychrophilum* as well as to siderophore production. *Pseudomonas* sp. FF16 exhibited potentially useful antagonistic properties and could be a probiotic candidate for the salmon farming industry.

Palabras clave

KeyWords Plus: [Acylated Homoserine Lactones](#); [Vibrio-Anguillarum](#); [Flavobacterium-Psychrophilum](#); [Aeromonas-Hydrophila](#); [Biofilm Formation](#); [Signal Molecules](#); [In-Vitro](#); [Artemia-Franciscana](#); [Biological-Control](#); [Colony Morphology](#)

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