

# Pantoea agglomerans as an agent to remove residual copper from aquaculture activity

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The adhesion of microorganisms to the floating cages in the aquaculture industry is currently controlled with copper as a biocide paints problem. The development of these activities has resulted in marine and freshwater sediments next to the culture centers high levels of copper. Due to these problems of environmental pollution, at present have been implemented new technologies of biological origin for the detoxification of ecosystems through the use of microorganisms (fungi, yeasts and bacteria). Therefore the main objective of this work is the search for marine microorganisms for the removal of copper. For this, samples were collected from marine sediment contaminated with copper Tenglo Channel (41 ° 29'23.59" S, 72 ° 58'06.70" W). Gram negative bacterium of marine sediment was isolated in TSA medium supplemented with 7 mM Cu (II), this strain was designated as LMAE-2. The phylogenetic analysis has a 97% similarity with *Pantoea agglomerans*. The high resistance for copper was determined at 9 mM. Finally, the metal removal capacity of this bacterium was determined in 11.6% by Atomic Absorption Spectrometry. These results suggest that marine bacteria could be a biologic model system for use in processes for removal this toxic metal. © (2014) Trans Tech Publications, Switzerland.

Antifouling

Copper

*Pantoea agglomerans*

Removal

Aquaculture

Atomic absorption spectrometry

Bacteria

Detoxification

Manufacture

Microbiology

Removal

Submarine geology

Antifouling

Aquaculture industry

Environmental pollutions

Freshwater sediment

Gram-negative bacteria

Marine microorganism

Pantoea agglomerans

Phylogenetic analysis

Copper