

**STUDY OF THE INFLUENCE OF HEAVY METALS ON THE MICROBIOCENOSIS
OF PETER THE GREAT BAY OF THE SEA OF JAPAN ON THE EXAMPLE OF MICROALGAE
AND BACTERIA UNDER THE CONDITIONS OF A LABORATORY EXPERIMENT**

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The influence of lead, cadmium, nickel, zinc and iron in concentrations corresponding to MPC and 2 MPC on the properties of *Heterosigma akashiwo* microalgae exometabolites in relation to bacteria isolated from different areas of the Peter the Great Bay of the Sea of Japan was evaluated. The results obtained showed metal resistance in 8 bacteria out of 18 tested. Different effects of exometabolites of *Heterosigma akashiwo* cultivated on heavy metals (HM) against bacteria resistant to these substances were found. Stimulation of the growth of opportunistic bacteria *Vibrio* sp., *Escherichia* sp., *Escherichia coli*, *Staphylococcus lentus*, *Enterococcus* sp., *Staphylococcus pasteurii* by exometabolites was revealed. In several cases, a decrease in the number of *Pseudomonas* sp. bacteria was recorded, with the addition of metabolites of microalgae grown with cadmium, lead and nickel at 10 and 20 µg/l, for *Bacillus* sp. at 20 µg/l lead, 10 µg/l and 20 µg/l cadmium, and also at 50 and 100 µg/l of iron. As a result, cadmium, lead and iron had the greatest effect on the effect of exometabolites on bacteria.

Keywords: lead, cadmium, zinc, iron, microalgae, bacteria, exometabolites

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