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# **Isolation and molecular identification of biosurfactant producing Lactobacilli rainbow trout digestive tract**

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**Biosurfactant compounds production is the one of Lactobacillus properties.**

**Biosurfactants are chemical materials that could be produce by a wide range of microorganisms such as bacteria, Actinomycet, yeast and fungi. The main goal of this study was isolate of biosurfactant producing bacteria in rainbow trout intestine different parts of west Azarbaijan province. Fifty samples of rainbow trout intestine were prepared and transferred to the laboratory and immediately were cultured on special medium (MRS agar) for lactic acid bacteria isolation at aerobic and anaerobic conditions. Isolated bacteria were identified by common bacteriological methods and polymerase chain reaction and at first screened for biosurfactant production using hemolysis, emulsifying and reduction surface tension tests. Finally the biosurfactant weight and its chemical nature were identified by thin layer chromatography. Results showed that 13 Lactobacillus and one Bifidobacterium isolated fifty rainbow trout intestine sample. Screening test revealed that Lactobacillus reuteri and Lactobacillus delbrueckii could produce biosurfactant. Also, results showed that Lactobacillus reuteri could produce more biosurfactant than Lactobacillus delbrueckii and its emulsifying and surface tension properties are higher. As well as, the biosurfactant that produced by Lactobacillus reuteri had higher antibacterial activity against E. coli and S. aureus as the Lactobacillus delbrueckii. It's should be concluded that there are bacteria in rainbow trout intestine that could produce biosurfactant that may be they are useful for different industry such as food industry, agriculture and environmental sciences.**

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