

**PECULIARITIES OF CHEMICAL COMPOSITION
OF PHENOL-OXIDIZING STRAIN CELLS
AEROMONAS ICHTHIOSMIA ONU552**

O. G. GORSHKOVA, O. V. VOLIUVACH, T. V. GUDZENKO,
M. O. CHERNYSHOVA, A. A. NESTER

*I.I. Mechnikov Odessa National University, Ukraine;
e-mail: tgudzenko@ukr.net*

The chemical composition of cells of strains of microorganisms is necessary for their chemodifferentiation. This information can be used to determine the generic (species) belonging to a strain in ecological, biotechnological and infectious communities of microorganisms for medical diagnosis or for further use in the biotechnological direction. Of particular interest is the introduction of advances in biotechnology techniques based on the use of non-pathogenic strains of microorganisms immobilized on synthetic carriers, in the practice of treating effluent from medical institutions with a high content of phenolic contaminants.

This paper presents the results of the chemical composition of the cells of the phenol-oxidizing strain *Aeromonas* sp. F2. The fatty acid analysis of the strain was carried out by gas chromatography using the Sherlock micro-organism identification system. According to the fatty acid composition using the RTSBA6 6.21 library of the MIDI Sherlock program, the investigated strain with a high similarity index is identified as *Aeromonas ichthiosmia* ONU552.

Analysis of the results of chromatographic studies showed that hexadecane (16: 0, 21.84%) and hexadecene (16: 1 w7c / 16: 1 w6c, 36.89%) were detected in the profile of the strain under study. The total content of unsaturated fatty acids, including biomarker, detected in a minor amount, was 50% of the total fatty acid pool: 16: 1 w7c / 16: 1 w6c (36.89%), 18: 1 w7c (8.53%), 16: 1 w7c alcohol (3.45%), 17: 1 w8c (0.60%), 17: 1 w6c (0.26%), 16: 1 w5c (0.12%). A distinctive feature of the strain *A. ichthiosmia* ONU552 from microorganisms belonging to another genus (or species) is the presence of monounsaturated re-dicenic acids 16: 1 with double bonds at positions $\Delta 6$, $\Delta 7$, and the absence of 12-methyltetradecanoic acid 15: 0 anteiso and negligible the amount of 13-methyltetradecanoic acid 15: 0 iso (0.97%), which in the lipid composition of cells of other microorganisms dominate and in the sum varies from 30 to 85% of the total fatty acid pool. Biomarkers for the species-specific detection of the strain *A. ichthiosmia* ONU552 should be considered saturated fatty acids of the branched structure in the form -is with an odd number of carbon atoms, recorded in an amount of less than 2% of the sum of the areas of all peaks in the chromatogram: 13: 0 iso (0.20%), 15: 0 iso (0.97%), 13: 0 iso (1.49%). The chemical markers of the 3-hydroxy acid are used to classify this strain as gram-negative bacteria of a sliding type: 12: 0 3OH (0.23%), 15: 0 3OH (0.35%) and 15: 0 iso 3OH (3.85%). The total amount of hydroxy acids is 11.02% of the total fatty acid pool of strain *A. ichthiosmia* ONU552.