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## FEATURES OF FATTY STRENGTH PROFILE OF STRAIN *BREVIBACILLUS CENTROSPORUS* F14 – DESTRUCTOR OF PHENOLIC COMPOUNDS

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**Introduction.** Close-bodied microorganisms are clearly delineated by the presence and percentage content of their cellular lipids of fatty acids. Particular attention is paid to the search for new and identification of non-pathogenic microorganisms intended for the purification of effluents from the production of pharmaceuticals, medical institutions with the predominant content of highly toxic phenolic compounds in them. The aim of the work is to establish the characteristics of the fatty acid profile of the non-pathogenic strain *Brevibacillus centrosporus* F14, a destructor of phenolic compounds isolated from sewage from Ukrainian pharmaceutical products.

**Methods.** Fatty acid analysis of the strain *Brevibacillus* sp. F14 was performed by gas chromatography using the Sherlock MIDI microorganism identification system.

**Results.** The saturated fatty acids of the branched structure prevailed in the spectrum of the strain from the fatty acids (in the sum of 82.0%): C14:0 iso (14.9%), C15:0 iso (14.8%), C15:0 anteiso (34.9%), C16:0 iso (11.1%), C17:0 iso (1.4%), C17:0 anteiso (4.9%). A feature of the fatty acid profile is *Br. centrosporus* F14 is the presence on the chromatogram of the strain-destructor of cyclic aromatic xenobiotics of biomarker fatty acids: 16: 1 w7c alcohol (7.7%) and 16:0 N alcohol (0.6%). The unsaturated long chain fatty acids found in minor amounts of bio-main fatty acids also include: 16:1 w11c (3.0%), 17:1

iso w10c (1.3%), 18:3 w6c (0.4%). The total amount of saturated fatty acids of the normal structure was 3.1% 12: 0 (0.7%), 14:0 (0.4%) and 16:0 (2.0%).

**Discussion.** The presence of fermented fatty acids C15:0 and C17:0 in the fatty acid profile of the strain *Br. centrosporus* F14 in the form of iso and anteiso made it possible to calculate the biomarker ratios [C15:0 anteiso/C15:0 iso] and [C17:0 anteiso/C17: 0 iso], which were 2.4 and 3.5, respectively, and 2-2.5 times higher than those for the previously identified soil oil-oxidizing strain *Bacillus megaterium* ONU-542. Difference of fatty acid profile of strain *Br. centrosporus* F14 from the fatty acid profile of the strain of *Bacillus subtilis* ONU-551, also having a destructive potential with respect to phenol, is that the maximum content of the sum of the peak area on the chromatogram of strain *Br. centrosporus* F14 accounted for fatty acid 15:0 anteiso (34.9%), and on the chromatogram of a similar strain-destructor *B. subtilis* ONU-551 – for fatty acid 15:0 iso (34.7%).

**Conclusions.** 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 was identified as *Br. centrosporus* F14. In laboratory conditions, the high phenol-oxidizing capacity of the strain is confirmed, which opens the possibility of its use in biotechnology of environmental purification from aromatic xenobiotics.