

УДК: 579+571.2+612::614.4

ББК: 28.4;58

ISBN:

Microbiology and Immunology – the Development Outlook in the 21st century. Abstracts book of the II International Scientific Conference, April 14-15, 2016, Kyiv. – Kyiv, 2016. – 168 p.

Abstracts book contains the results of scientific work of specialists, working in the field of microbiology and immunology. The book is intended for the researchers and specialists in applied biomedicine.

The authors are responsible for the trustworthiness of scientific results and for the text of abstracts.

The organizers of the conference thank the Rector's Office of Taras Shevchenko National University of Kyiv.

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producers are the recombinant strains of genus *Trichoderma*, but its enzyme mixture are not optimal for lignocellulosic biomass hydrolysis. *Fennellia* sp. 2806 isolated and studied in IMV NANU is a promising producer of cellulase and xylanase complex. Main agricultural residues in Ukraine (corn stover, wheat straw etc.) may be used as substrate for cultivation of this fungus.

The aims of our research were to select the important nutrient sources and determine their optimal concentration in the nutrition medium for *Fennellia* sp. 2806 by statistical design methodology the use of that will substantially increase the cellulase and xylanase activities.

Fennellia sp. 2806 was cultivated in media with the natural carbon sources - wheat straw and corn stover under submerged conditions with 5% inoculum. Activities of cellulolytic and xylanolytic enzyme complex were determined by standard methods. Statistical experimental designs including determination of the relative importance of variables (12 components) by Plackett-Burman and following Box-Behnken (4 components) response surface methodology were used via the statistical software package Minitab 16.

Optimal combinations of the major constituents (4 significant component – KH_2PO_4 , KCl, CoCl_2 , urea) of media for maximal cellulase and xylanase production were determined. Studied activities were higher under optimal conditions than that obtained at initial medium: endoglucanase – 1.2-fold, exoglucanase – 1.4–2.2; xylanase – 1.8–2.5; β -glucosidase – 1.6 - 1.7, respectively. It was established that a statistical approach based on the sequential application of Plackett-Burman design and response surface methodology in Box-Behnken allowed to optimize the nutrition medium composition with natural hemicellulose substrates for processes of synthesis of multi enzyme complexes of micromycetes.

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THE CHARACTERIZATION OF ISOLATE OF HETEROTROPHIC BACTERIA,
SELECTED FROM FERROSPHERE, AND THEIR SENSITIVITY TO
DERIVATIVES OF UREA ON BASED OF PESTICIDE LINURON.

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Study of the sensitivity of individual heterotrophic bacteria of the sulfidogenic community representatives to the bactericides becomes important, because exactly heterotrophs create conditions for the development of sulfate-reducing bacteria. The aim of this work was to select of isolate of heterotrophic bacteria from

ferrosphere of underground metal constructions, to investigate their properties and to determine the sensitivity to derivatives of urea on based of pesticide linuron.

Selection was performed by Koch method on meat-peptone agar (MPA). Investigation the properties of isolate was performed by conventional methods. Investigation of the sensitivity of bacteria to derivatives was performed on MPA by diffusion in agar method using sterile paper discs with concentration of compounds of 2.0%.

It is established that bacteria of an isolate are Gram-negatives, motile, have a shape of bent sticks with rounded ends, length $4,736 \pm 0,369 \mu\text{m}$; arranged in one or in pairs, in pairs have the V-shaped arrangement, can form a chain 7 or more cells; do not form endospores; have the capsule; mesophiles; catalasepositives; oxidasenegatives; facultative anaerobes; form a acid from glucose in both aerobic and anaerobic conditions, but do not form a gas; carry out nitrate respiration by dissimilatory ammonification instead of denitrification; citrate is not utilized; urea utilized; indole is not form, a hydrogen sulfide is not form; formate fermentation did not exercise; Levan is not synthesized; lipids, starch, casein hydrolyzed.

It is established the largest zones of inhibition of bacterial growth by the action of a linuron and a derivative with a fragment of antipyrine: $30.0 \pm 0.4 \text{ mm}$ and $31.0 \pm 0.3 \text{ mm}$, respectively, and the smallest - by the action of a derivative with a fragment of anthranilic acid: $15,0 \pm 0,4 \text{ mm}$. Compounds with a fragment of piperidine and with a fragment of benzylamine on the growth of bacteria is not affected.

Tokovenko I.P., Korobkova K.S.

INVESTIGATION OF PHYTOPATHOGENIC MOLLICUTE'S EXTRACELLULAR PROTEASES AS POSSIBLE FACTOR OF PATHOGENICITY.

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Among most harmful organisms that are able to cause damage agricultural cultures are phytopathogenic mollicutes. They change the basic links of plant metabolism and cause substantial harm to the cultural plants. Thus their productivity are reduced, especially during epiphytoties.

The decision of these questions is impossible without all-round research of factors of pathogenicity this microorganisms. The substances of protein nature examined as factors of pathogenicity of these microorganisms. To such substances belong the extracellular proteases of these pathogens.

Extracellular proteases we received from the cultural medium of phytopathogenic mollicute that causes the pale green dwarfness of wheat -