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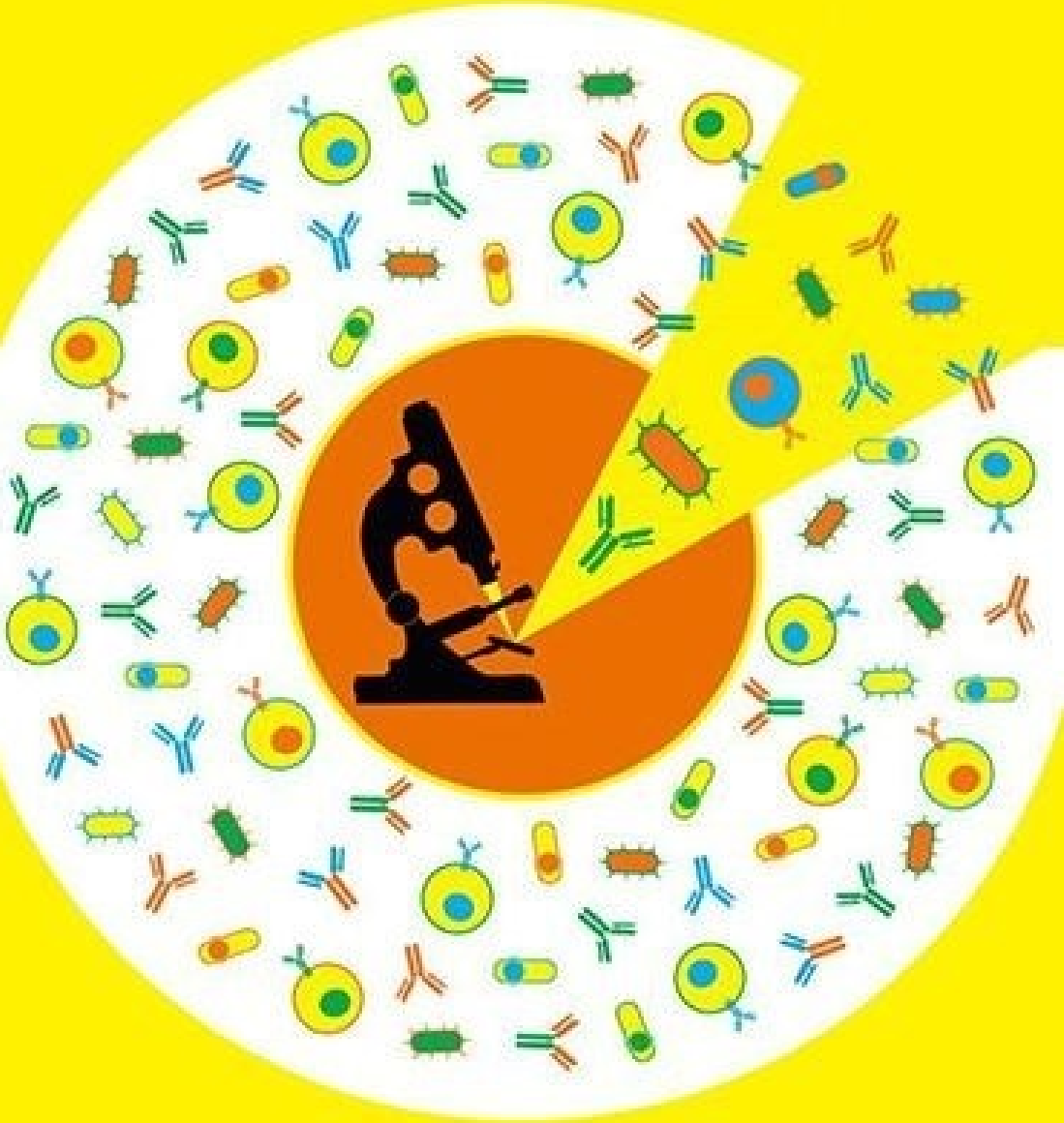

ABSTRACT BOOK

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BACTERIAL STRAINS ANTIMICROBIAL SENSITIVITY CHANGES AFTER CO-CULTIVATION WITH HUMAN AND ANIMAL CONTINUOUS CELL CULTURES

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Background. One of the most important probiotics evaluating criteria is their antibiotic resistance ability, which should be a characteristic that helps to select promising bacterial strains for production. But these properties can vary a lot, they loss may occur during passages, also, acquired resistance (plasmid) can be present. The phenomenon of antibiotics sensitivity reversal was first discovered in lactic acid bacteria during their interaction with the human lymphoblastoid cells.

The goal of our research is to determine the intrinsic resistance of enterococcal strains isolated from Linex® and *Klebsiella* isolated from human stool sample which when has been cultivated in cell cultures.

Methods. Bacterial strains: *E. faecium* strain isolated from the Linex® drug, *K. pneumoniae* strain isolated from biomaterial. Cell cultures: Hep; BHK; MDCK; RK-13. Nutrient media; antibiotic filter paper discs registered in Ukraine. The disc-diffusion method (DDM) was used for research. Control was carried out with standard test cultures. Strains were grown in 24-hour monolayer cell culture lines.

Results. We demonstrate that after co-cultivation of a mixture of enterococci and *Klebsiella* strains together in cell lines, the strain of *K. pneumoniae*, which was initially suseptible to the studied antibiotics, became resistant to most of them: this applied to the drugs amikacin, ceftazidime and meropenem. In case of the drugs like ceftriaxone, cefepime, ciprofloxacin, the zones of growth inhibition also decreased. Changes did not occur for the Tigacil® drug. The strain of *E. faecium* initially showed resistance to antibiotics: ceftazidime, ceftriaxone, cefepime, gentamicin, amikacin, azithromycin. Sensitivity was found to vancomycin, linezolid, tigecycline. After passage through cell culture, *E. faecium* remained stably resistant to ceftazidime and cefuroxime.

Conclusions. The strain of *Klebsiella pneumoniae*, initially susceptible to the antibiotics amikacin, ceftazidime, meropenem, after co-cultivation with a resistant to these drugs strain of *E.faecium* in human and animal cell cultures also became resistant to these drugs and retained this property during subsequent passages.

Keywords: *antibiotics, cell cultures, enterococci, Klebsiella, resistance.*