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ANTAGONISTIC ACTIVITY OF ISOLATED PROBIOTICS AGAINST ESCHERICHIA COLI ESBL

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Abstract

Potentially all microorganisms are able to synthesize several substances in vitro with inhibitory activity for themselves or other microorganisms, producing bactericidal or bacteriostatic effects. The objective of this work was to establish the bacterial growth antagonistic properties of Escherichia coli ESBL by Lactobacillus casei strain Shirota, Bifidobacterium animalis DN173010, isolated of commercial probiotic products, and Kefir grain by the overcoated agar method. Analysis of the results allowed to gauge halos of 7.1 ± 2 mm inhibition of growth by L. casei strain Shirota and 6.3 ± 2 mm by B. animalis DN173010, Kefir grains did not produce inhibition halos against the multiresistant strain. The bacterial growth inhibition activity can be justified by the competition of nutrients from the medium and/or by the secretion of bacteriocins, protein or peptidic compounds ribosomally synthesized in the primary metabolism with antagonistic activity and because proteins are

expected to behave differently on certain target microorganisms and culture conditions, and the production of these compounds by the Kefir grains cannot be excluded.

Keywords - Bacteriocins, antagonistic activity, lactic acid bacteria, Kefir, LAB.