INTRODUCTION

Probiotics production is one of the most promising and popular areas of biotechnology. Traditional fermented products such as fermented mare’s milk—koumiss and fermented camel milk—shubat represent an important source of new strains of lactic acid bacteria (LAB). Lactic acid bacteria are able to synthesize antimicrobial substances, such as bacteriocins. Which is one of the indispensable requirements for probiotics production.

The aim of this study was to determine the antagonistic activity of isolated LAB against opportunistic pathogens.

MATERIALS AND METHODS

The antagonistic activity was determined using cell-free supernatantes by agar well diffusson assay. For this study 130 museum LAB cultures isolated from koumiss and shubat (Antigen Co. Ltd.) were used. Inhibitory activity was investigated on the following indicator bacteria: Salmonella typhimurium, Escherichia coli, Bacillus subtilis, Listeria innocua, Basillus cereus, Pseudomonas aeruginosa, Staphylococcus aureus (Pasteur Institute, France.). Cell-free supernatant (24 h LAB culture) was sterilized (0.42 μm syringe filter (TPP, Switzerland)) and neutralized.

RESULTS

Between 130 cultures the highest growth inhibition zones were observed on the six following cultures: Enterococcus faecalis, Lactococcus lactis concerning Staphylococcus aureus (d = 18 mm, 17 mm, respectively). Leuconostoc mesenteroides against Salmonella typhimurium (15 mm); Enterococcus durans against Listeria innocua (13 mm); Lactococcus lactis subsp. lactis against Basillus subtilis (9 mm); Lactobacillus fermentum against Pseudomonas aeruginosa (8 mm). Other strains showed medium or small inhibition zones less than 6 mm.

CONCLUSION

Obtained results show that studied wild strains of traditional fermented milk products could be used as new probiotic microorganisms with high antagonistic activity.