

## INTRODUCTION

Strain *Acinetobacter* sp. 12S is a producer of the complex exopolysaccharide ethapolan. Due to the unique properties of ethapolan water solutions, ethapolan preparations could be used for the enhancement of oil recovery, as well as in mining, food, chemical, and cosmetic industries [1]. In our previous works [2-4], we studied the principal stages of C<sub>2</sub>-metabolism in *Acinetobacter* sp. 12S in order to detect and eliminate limitations in the metabolic pathway. It was established that, in the case of *Acinetobacter* sp. 12S, ethanol metabolism is limited by the rate of acetate assimilation. Our previous studies of the regulation of the acetyl-CoA synthetase activity, as well as on the effect of exogenic acetate on ethapolan production, enabled us to eliminate factors that limit C<sub>2</sub>-metabolism and to refine the technology of ethapolan production on ethanol. We have developed a number of new nutrient media with the reduced contents of mineral salts and phosphate buffer (which are two and four times lower, respectively) [3, 4]. This has allowed us to reduce both the duration of the producer cultivation and ethapolan production costs. According to the results obtained and the literature data, not only the EPS synthesis (the amount of synthesized polysaccharides, rate of their formation, EPS yield calculated per substrate, etc.), but also the physicochemical properties of polysaccharide preparations (EPS chemical composition, molecular mass, and proportions of polysaccharides) depend on the cultivation conditions, which affects the rheological properties of EPS and, consequently, their practical value [5–9].

The purpose of this work is to study the physicochemical properties of ethapolan synthesized on various ethanol-containing media.

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