

THE EFFECT OF *SACCHAROMYCES CEREVISIAE* BTM-1 ON THE ANTIADHESIVE ACTIVITY OF *ACINETOBACTER CALCOACETICUS* IMV B-7241 SURFACTANTS

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Introduction. One of the issues of today is the adhesion of yeasts of the *Candida* spp. on medical instruments, in particular on venous catheters [1]. Since *Candida albicans* is characterized by high resistance to known antifungal agents [2], there is a need to search for natural compounds, in particular, surface active substances (surfactants) with high anti-adhesive activity.

Materials and methods. *Acinetobacter calcoaceticus* IMV B-7241 was cultivated in liquid mineral medium containing purified glycerol and crude glycerol (3 and 5 % by volume), respectively. The inductor was added at the beginning of cultivation as a suspension of live, inactivated cells and the corresponding supernatant. The surfactant was extracted from the culture supernatant with a modified Folch mixture. The number of cells adhered to abiotic surfaces (steel, tile, linoleum) was determined spectrophotometrically.

The results. It was found that, regardless of the physiological state of the inductor (live, inactivated cells, supernatant) and the degree of substrate purification, the surfactants synthesized by *A. calcoaceticus* IMV B-7241 proved to be effective anti-adhesive agents. The degree of adhesion on all studied surfaces of yeast test cultures (*Candida tropicalis* PE-2 and *Candida albicans* D-6) after treatment with surfactant solutions (22 µg/ml) synthesized on purified glycerol in the presence of live and inactivated *S. cerevisiae* BTM-1 cells was 36-65 % and was lower than under the action of surfactants obtained without inducer (35.4-75 %). Similar results were observed in the case of treatment of abiotic materials with surfactant solutions synthesized by *A. calcoaceticus* IMV B-7241 on crude glycerol with the introduction of inductors. In the presence of live and inactivated *S. cerevisiae* BTM-1 cells, the synthesis of surfactants was observed, and after treatment with solutions of which (22 µg/ml), the adhesion of *Candida* yeasts on all surfaces examined was on average 30 % lower compared to the effect of surfactant preparations synthesized in the medium without inductor.

Conclusions. In summary, regardless of the method of preparing the eukaryotic inductor *S. cerevisiae*, its introduction into the medium with glycerol of different purification levels was accompanied by an increase in the antiadhesive activity of the synthesized surfactants of *A. calcoaceticus* IMV B-7241.

REFERENCES

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