

RHAMNOLIPIDS BIOSYNTHESIS BY *PSEUDOMONAS AERUGINOSA* WITH INCERCASE LEVEL CYCLIC DIGUANYLATE

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Surfactants constitute important class of industrial chemicals, widely used in each sector of modern industry. Stiffness environmental regulations and increase knowledge about necessity the protection of ecosystem, adduce to raising interest of biosurfactants, as possible alternative of surfactants.

In the first time surfactants (rhamnolipid) biosynthesis by *Pseudomonas aeruginosa* has been show by Jarwis and Jhons in 1949. One of the most famous surface-active glycolipid is rhamnolipid first mentioned in forties of last century. More than 60 rhamnolipid homologues produce *Pseudomonas*, among them the most studied are rhamnolipids of *Pseudomonas aeruginosa*.

Purpose of work is detection rhamnolipids synthesized by *P. aeruginosa* with increased level c-di-GMP – PA01 100 wspF1. PA01 is control strain. Quantitative content of rhamnolipid estimate by color reaction rhamnose with orcin (Koch A. K., 1991). The evaluation was conducted after 24 hours, on 3,5 and 7 days of incubation.

The obtained results show, that quantity of rhamnolipid in control strain was lower, than samples of researched strain: 70 µg/ml in control strain and 117,5 µg/ml in PA01 100 wspF1 after 24 hours of incubation in thermostat. On third day incubation the level of rhamnolipid biosynthesis of the studied strain was three times higher, than control (87,5 µg/ml and 42,5 µg/ml). On the fifth and seven days incubation level of rhamnolipid biosynthesis of the studied strain was higher, than control sample.

This can be explained active cell division and biofilm creation by PA01 100 wspF1 and increase rhamnolipid biosynthesis, but this question requires further study. It is important to remember, that today biosurfactants have significant value, because they are cleaner environment.

Biosurfactants in ten times more expensive, than chemicals, therefore an important task for today is development biotechnological methods, for increasing the productivity of biosurfactants synthesis, and to reduce their net cost. From here it follows that unification of production biosurfactants with recycling can reduce environmental pollution and balance the total cost.