



VIABILITY OF *CYTOPHAGA HEPARINA* ONU-235 AND *CYTOPHAGA LYTICA* ONU-51 FOR LONG-TERM STORAGE IN DIFFERENT METHODS

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Introduction Bacteria of the genus *Cytophaga* have considerable scientific and practical interest because of its biological features [1 - 3]. For researchers, studying the various groups of gliding bacteria, including cytophagas, one of the problems is their long-term storage in laboratory conditions in a viable and authentic state.

Aim Research the viability of collection strains cytophagas *Cytophaga heparina* ONU-235 and *Cytophaga lytica* ONU-51 for the storage of more than 10 years lyophilic drying methods, the suspension state and subcultivation.

Materials and Methods Strains of *C. heparina* ONU-235 and *C. lytica* ONU-51, preserved in vacuum-sealed ampoules of tablets dry milk in a dark place at +4 °C, in vacuum-sealed ampoules of distilled water, 15% glycerol solution at -36 °C, in the test tube in squinted nutritional environments Su - agar (*C. heparina*) and Sp2 - agar (*C. lytica*) at +4 °C [4].

For determination cytophagas' viability carried out crops in a Petri dish on solid nutrient medium.

For sowing cultures, which are stored slurry condition, ampoules removed from freezers, held at room temperature for complete melting of ice and then carried out crop 0,1 ml suspension of concentration 10⁹ cells/ml in a Petri dish on the suitable medium.

For sowing cultures, which are stored by subcultivation, culture biomass made in sterile saline solution, prepared suspension of concentration 10⁹ cells/ml, 0.1 ml of which have carried out in a Petri dish on the suitable medium.

Cytophagas cultivated at 25 - 28 °C for 14 days. Then counted the quantity of colonies and were determined the quantity colony forming units in 1 ml (CFU/ml) in the formula:

$$M = a \times 10^n / V,$$

where a - the number of colonies that grew; 10ⁿ - breeding; V - sowing dose (0,1 ml).

Results Investigation showed that the best viability researched cytophagas in the laboratory conditions a method of lyophilic drying. The quantity of viable cells for storage by this method was differently and for strain *C. heparina* ONU-235 was 7,81 lg CFU/ml, for strain *C. lytica* ONU-51 - 6,22 lg CFU/ml.

Good results have obtained in storage of bacteria of the genus *Cytophaga* by subcultivation. The quantity of viable cells of these strains when stored this way was somewhat less than the storage of their lyophilic dried condition and was 7,10 lg CFU/ml (strain *C. heparina* ONU-235) and 5,82 lg CFU/ml (strain *C. lytica* ONU-51).

Regarding the storage of cytophagas in slurry condition, the best results were obtained when using glycerol. However, the results were slightly worse than the storage cytophagas lyophilic drying methods and subcultivation. The quantity of viable cells of strain *C. heparina* ONU-235 was 6,33 lg CFU/ml, and the strain of *C. lytica* ONU-51 - 4,63 lg CFU/ml.

Storage cytophagas in slurry state in distilled water, the quantity of viable cells was small and did not exceed 5,83 lg CFU/ml (strain *C. heparina* ONU-235). For strain *C. lytica* ONU-51 this index amounted to 4,02 lg CFU/ml.

Conclusion Therefore, comparing the efficiency of these methods of storage was found, less suitable for storage of strains of *C. heparina* ONU-235 and *C. lytica* ONU-51 is the method of preservation in the slurry state: in distilled water and glycerol. The most suitable is method of storage in lyophilic dried state, which allow save a significant quantity of viable cells. And given the fact that this method cytophagas saved more than 10

years, the results suggest high efficiency and expediency of its use for long-term storage of bacteria of this group.

References

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