

Technical Activities Focused On Reorganization of Federal Culture Collection of Pathogen Microorganisms

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Abstract:

During a 30-years activity of the SRCAMB (Obolensk, Russia) a representative collection of bacteria, phages and somatic cell lines has been established. Those biological materials have been collected within the framework of Russian and international programs. However, detail studies of isolated cultures, its systematization and long-term storage are fulfilled in these projects. **Purpose** of this work was activities focused on preservation and development of SRCAMB Collection of microorganisms. **Methods.** The growth, purity, cell and colony morphologies of each bacterial culture depositing in Collection were checked. For biochemical testing we used API strips (BioMerieux Inc.) and Mikro-La-Test (PLIVA-Lachema, Czech Republic). In cases to confirm an organism's identity there was used sequencing of the 16S rRNA gene. *M. tuberculosis* strains were typed by "spoligotyping" method [1]. For molecular-genetic typing of entomopathogenic fungi RFLP-PCR and RAPD-PCR were used. Hybridomas producing monoclonal antibodies to bacterial pathogens were obtained by standard technique. Bacteriophages possessing lytic activity against various species of pathogenic microorganisms were isolated from different samples (sewage waters, wound effluent, etc.). **Results.** Reorganization included supplying by new storage, analytical equipment, lab rearrangement, collection systematization and replenishment. Totally, 4025 strains of the basic stock of SRCAMB Culture Collection were inventoried. More than 150 new strains of pathogenic bacteria were deposited in Collection. Totally, 940 *M. tuberculosis* strains from working collections were analyzed by "spoligotyping" method. 64 of those were additionally tested by MIRU-VNTR and deposited in Collection. Analysis of intra-species variability of ITS regions of 49 fungous cultures has allowed to confirm primary morphological identification of them and to divide some fungi species into additional genetic groups. 54 strains of bacteriophages possessing lytic activity against target bacterial pathogens were isolated, studied and deposited. Studies on biological properties of those phages during long-term storage were carried out. The collection of cell lines was replenished with 21 hybrid clones producing monoclonal antibodies against various bacterial pathogens. Work was supported by ISTC, Projects #2754.2.

Key words: collection of microorganisms, pathogenic microorganism, identification, bacteriophages, somatic cell lines