

INSTITUTE OF MICROBIOLOGY OF THE ASCR, v. v. i.

Mikrobiologický ústav AV ČR, v. v. i. (MBÚ)

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The origins of this Institute go back to 1950 when a Department of Microbiology was established at the Central Institute for Biology, which was incorporated into the then Czechoslovak Academy of Sciences on January 1, 1953. As of January 1, 1962, the Institute of Biology was split into several independent institutes. Some of its former departments and laboratories served as the nucleus of the Institute of Microbiology. Pursuant to Act No. 341/2005 Coll., the Institute became a public research institution as of 1 January 2007.

The research work done at the Institute encompasses microbiology and immunology, with special reference to studies of fundamental aspects of microorganisms. These include microbial genetics, physiology, cell division, structure, ultrastructure, and morphological and biochemical differentiation of prokaryotic and eukaryotic microorganisms at the cellular and molecular levels.

Other aspects concern the effect of microorganisms and their components on plant and animal hosts including humans. Specific studies refer to the biotransformation and biodegradation activities of microorganisms, as well as to biologically active substances produced by microorganisms and the determination of their chemical structure. High-production microbial strains are constructed. The model organisms include bacteria, yeast, filamentous fungi, algae and higher eukaryotes. The Institute houses an internationally recognised collection of basidiomycetes.

Research in immunology is directed at finding ways to reinforce the immunity of the human organism and treat some disorders of the immune system. Targeted cytostatics and immunosuppressants are investigated and their clinical use is studied. For its immunological studies, the Institute possesses an animal house for raising germ-free animals. It also has equipment for elaborating microbiological and biotechnological processes and their scale up to the pilot plant level. The results of this basic research find their use in pharmaceutical and fermentation industries, in applied environmental science and in both human and veterinary medicine.

Joint Research Centres

- Joint Laboratory for Mucous Membrane Immunology and Vaccines (Institute of Microbiology, ASCR, and First Medical Faculty, Charles University)

- Joint Laboratory for Analysing Natural Substance (Institute of Microbiology, ASCR, and Faculty of Science, Charles University)
- Joint Centre for Teaching Immunology (Institute of Microbiology, ASCR, Institute of Molecular Genetics, ASCR, and Faculty of Science, Charles University)
- Joint Science Education Centre of the Institute of Microbiology, ASCR, and Faculty of Biology, University of South Bohemia in České Budějovice
- Joint Centre for Molecular Interactions and Biotransformations of Drugs (Institute of Microbiology, ASCR, and Faculty of Science, Charles University in Prague)
- Joint Laboratory for Proteome Analysis (ASCR Institutes of Microbiology, Animal Physiology and Genetics, and Experimental Medicine, and IMMUNOTECH Co.)
- Joint Centre for Research on Cell Stress and Adaptation (Institute of Microbiology, ASCR, Faculty of Science, Charles University, and Faculty of Mathematics and Physics, Charles University)

Since 1956, the Institute has been publishing the bimonthly international science journal *Folia Microbiologica*. The editorial office is located at the Institute.

More detailed information about the organisational structure of the Institute and its research and specialised units can be found at the following URL:
<http://www.biomed.cas.cz/mbu>