

The Microbiology Laboratory

Depending on the type of microbes to be studied, i.e. bacteria, viruses, fungi or parasites, microbiology laboratories deal with the specific diagnosis of the suspected pathogens. Consequently, there are **bacteriology**, **mycology**, **parasitology**, **virology**, **mycobacteriology** and **immunology** laboratories.

Depending on the type of processed samples as well as on the area and intention of study, microbiology laboratories may be classified as **clinical** (processing biological samples collected from patients), and **environmental** (processing samples collected from various sources such as food, water, soil, air, etc.).

What is the role of the medical/clinical microbiology laboratories?

The **clinical** microbiology laboratory has a role in determining the:

- diagnosis of infection,
- most appropriate antibiotic therapy,
- effectiveness of the applied antibiotic therapy
- detection of microbial pathogens in healthy carriers

How do the clinical microbiology laboratories fulfil their roles?

- **processing** of clinical specimens submitted to the laboratory,
- **isolation** (of microorganisms within the specimens received),
- **identification** of microorganisms,
- and studying microbial **biology** and **physiology** (done in special laboratories)

How are microbiology laboratories organized?

- rooms for collecting and receiving biological products
- rooms for registration of the received biological products
- rooms for processing of the specimen
- rooms for sterilization
- rooms for storage of materials, reagents and culture media

Which is the necessary equipment?

- hot and cold running water, gas connection, electricity
- furniture: worktables, chairs, cupboards
- microscopes: light microscope, dark field microscope, phase contrast microscope, UV light microscope
- laboratory instruments: slides and coverslips, staining kit, tubes, pipettes, Petri dishes, bacteriological loops
- thermostats, refrigerators, freezers, analysers for bacterial identification, computers, centrifuges, autoclaves, hot air oven (Pasteur)

