

## Molecular Diagnostics

Molecular biological methods have revolutionized clinical diagnostics. Hence, these are also an indispensable element of our laboratory diagnostics.

In molecular diagnostics, various pathogens and mutations are routinely detected and differentiated at the level of nucleic acids. The spectrum of our analyses includes the detection of bacteria and fungi, as well as the molecular characterization of various pathogens.

By continuously developing, improving and revising methods and techniques, we are able to offer a range of analyses, which is both wide and up to date.

### Services offered:

<b><i>Panbacterial PCR</i></b>	This PCR-method is used for various kinds of samples such as tissue or biopsies, puncture fluids and various other liquids, EDTA blood or liquor. The test covers a wide range of <b>bacterial</b> pathogens, therefore perfectly lending itself as a complementary variant for the diagnosis of bacterial infections.
<b><i>Panfungal PCR</i></b>	This PCR-method is used for various kinds of samples such as tissue or biopsies, puncture fluids and various other liquids, EDTA blood or liquor. The test covers a wide range of <b>fungal</b> pathogens (various yeasts and some molds), therefore perfectly lending itself as a complementary variant for the diagnosis of fungal infections.
<b><i>SepsisTest</i></b>	The SepsisTest assay allows the rapid and highly specific detection of more than 60 bacterial and fungal sepsis pathogens directly from the patient's whole blood (EDTA). The big advantage is the quick transmission of results within 5 hours.
<b><i>Aspergillus PCR</i></b>	This specific PCR detects <i>Aspergillus fumigatus</i> , <i>A. terreus</i> , <i>A. flavus</i> , <i>A. nidulans</i> und <i>A. niger</i> in BALs or biopsies.
<b><i>Aspergillus antigen test</i></b>	This test (also known as Galactomannan or GM-test) determines the amount of <i>Aspergillus</i> -specific antigens from serum or BAL.
<b><i>β-D-Glucan antigen test</i></b>	The fungal antigen β-D-Glucan (BDG) is a panfungal marker used to exclude or confirm invasive fungal infection. It can be detected in the course of infections with <i>Aspergillus</i> spp., <i>Candida</i> spp. and <i>Pneumocystis</i> from serum or liquor.
<b><i>Candida antigen test</i></b>	The <i>Candida</i> antigen test determines the amount of antigens in a <i>Candida</i> infection from serum.

<b><i>Cryptococcus antigen test</i></b>	The <i>Cryptococcus</i> -antigen test is used to determine <i>Cryptococcus</i> infection by means of detecting antigens from serum or liquor.
<b><i>Dermatophytes PCR</i></b>	This PCR-method detects and identifies dermatophytes from skin, hair or nails. The specific and timely detection of pathogens is an essential advantage compared to cultural methods.
<b><i>Liquor PCR</i></b>	This test is a multiplex-PCR for the detection of <i>Streptococcus pneumoniae</i> , <i>Neisseria meningitidis</i> , and <i>Haemophilus influenzae</i> or <i>E.coli</i> , Streptococcus group B and <i>Listeria spp.</i> from liquor samples. The prompt attainment of results within 2-3 hours is the major advantage.
<b><i>Acanthamoeba PCR</i></b>	This PCR allows the specific detection of the pathogen in cases of suspected <i>Acanthamoeba</i> -keratitis directly from corneal scrapings, eyewashes or contact lens solution.
<b><i>Helicobacter pylori PCR</i></b>	This real-time PCR assay detects <i>Helicobacter pylori</i> and a possible resistance to Clarithromycin from gastric biopsies.
<b><i>Pneumocystis PCR</i></b>	The test is used to detect <i>Pneumocystis jirovecii</i> in suspicious pneumonia cases.
<b><i>Pathogen identification (isolates)</i></b>	In order to identify unknown pathogens specific bacterial or fungal markers are amplified by PCR and the PCR products are sequenced and matched against different databases.

### Molecular typing of pathogens

By use of various methods of molecular typing outbreaks can be examined and individual strains can be characterized. Apart from the following families, also other pathogens can be typed on request.

- *Staphylococcus* spp.
- Enterobacteria
- *Enterococcus* spp.
- *Pseudomonas aeruginosa*
- *Candida* spp.

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