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INFECTIOUS DISEASES (BACTERIAL, FUNGAL, VIRAL, PARASITIC, INFESTATIONS)

PCR TEST SYSTEMS FOR THE MOLECULAR DIAGNOSIS OF TINEA INFECTIONS

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Dermatophytoses are the most prevalent infections worldwide caused by a whole variety of dermatophyte species. The current diagnostics relies mainly on unspecific direct microscopy and long lasting cultural methods. Since a few years, however, molecular methods for the diagnosis in dermatophytes have been introduced which are fast, pathogenspecific and up to 30% more sensitive than the classical procedures. For this reason, dermatophyte detection using various PCR methods has become increasingly important in routine diagnostics in recent years. On the other hand, only pathogens can be detected for which specific primers and probes have been developed. For this reason, the quality of test systems can be very different. In addition to the various in-house methods, seven commercial test systems are currently available with different pathogen specificities and sensitivities. A big problem is the separation of phylogenetically close related but ecologically different (zoophilic vs. antropophilic) species like Trichophyton tonsurans and T. equinum A test system, which was launched in spring 2018, shows promising results. We, the national reference laboratory for dermatophytes have developed a proficiency test for the Genome Detection for Dermatophytes (RV 492) in collaboration with Instand e.V. (RV 492). This test is offered twice a year regularly since 2016. The purpose is to control the quality of the molecular diagnostics of microbiological laboratories and dermatologists externally. Now, we have 30 participants from all over the world. As a result, the analyses of the last five tests show that dermatophyte species (T. rubrum, T. interdigitale and Epidermophyton flosccosum) that cause onychomycosis and tinea pedis are sufficiently and sensitive detected on species level from clinical specimens. On the other hand, the molecular diagnosis of zoophilic and rarely antropophilic species e.g., T. benhamiae and T. violaceum still need improvement.



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