

DermaScreen

All-in-one solution for accurate detection of dermatophytes and common fungal pathogens



Real Time PCR
Easy interpretation



Complete
Positive, negative
and internal controls



Effective
Fast extraction



Versatile
Skin, Hair and Nails



CLINICAL CONTEXT

Dermatophytes are filamentous fungi invading and degrading keratinized tissues as hair, skin and nails causing inflammation^{1,2}. Nails are the most common clinical samples sent to the laboratories (80-90%). The dermatophyte infection of the finger and especially the toenail (Onychomycosis) shows a prevalence of approximately 10% in the general population and is of great importance: Onychomycosis is most prevalent among older people (up to 50% in those >70 years) particularly men, and people with poor circulation in the feet (peripheral arterial disease), diabetes, a weakened immune system (caused by a disorder or drug), athlete's foot, or nail dystrophies³. The most common pathogens of onychomycosis are *Trichophyton rubrum* (T.rubrum; up to 80%) and *Trichophyton interdigitale* (T.interdigitale; up to 16%)⁴.

DIAGNOSIS

Diagnosis of these infections is currently based on microscopy or histology associated with culture on specific agar media. However, direct microscopy lacks specificity, and culturing has a long turn-around-time of 2 to 4 weeks and is prone to contamination. These limitations can be prevented by the use of molecular diagnostics.^{5,6,7} Molecular tests also show a better sensitivity compared to culture.⁸

CHARACTERISTICS

Test principle ⁹	Qualitative real-time multiplex PCR for the universal detection of nearly all dermatophytes and the specific detection of <i>T.rubrum</i> , <i>T.interdigitale</i> , <i>C.albicans</i> , <i>C.parapsilosis</i> , <i>S.brevicaulis</i>
Sample type ⁹	Nails, Skin and Hair
Thermocyclers ⁹	LC Pro & LC480 (Roche) ; CFX96 & CFX Opus (BioRad) ; QuantStudio 5 & 7 (Thermofisher) ; MIC qPCR (BMS)

PREFERENCES⁹

Target Name	PanDerma	T.rubrum/T.soudanense	T.interdigitale/T.mentagrophytes	C.albicans	C.parapsilosis	S.brevicaulis
Clinical Sensitivity	97.5%	> 99%	97.8%	> 99%	> 99%	> 99%
Clinical Specificity	98.3	95.5	98.9	98.6	91.7	97.3
Analytical sensitivity*	N/A	0.84	1.32	2.32	4.79	3.29

* 95% cut-off in copies/μL on QuantStudio 7 (thermofisher)

Reference	Designation	Format
EBX-073	EurobioPlex DermaScreen	50/100/200 tests
Reference	Other EurobioPlex Reference	Format
EBE-077	EurobioPlex DermaXtract	50/100/200 tests

1. Alex E. Moskaluk and Sue VandeWoude (2022) «Review - Current Topics in Dermatophyte Classification and Clinical Diagnosis», *Pathogens* 2022, 11, 957.

https://doi.org/10.3390/pathogens11090957;2) Sarah E. Kidd and Gerhard F. Weldhagen (2022) «Diagnosis of dermatophytes: from microscopy to direct PCR», *Microbiology Australia* 43(1), 9–13. doi:10.1071/MA22005;

3. Chris G. Adigun (2022) «Onychomycosis», *MSD Manual*, https://www.msmanuals.com/home/skin-disorders/nail-disorders/onychomycosis;

4. Nenoff P et al. S1-Leitlinie Onychomykose (AWMF-Register-Nr. 013-003) (2022) verfügbar unter: https://www.awmf.org/leitlinien/detail/II/013-003.html;5) Hayette et al.

(2018), «Clinical evaluation of the DermaGenius® Nail real-time PCR assay for the detection of dermatophytes and *Candida albicans* in nails», *Medical*

Mycology; 277–283;6) Trovato et al. (2019) «Molecular diagnosis of kerion celsi caused by *Trichophyton tonsurans* in a Italian child», *Med Mycol Case Rep.*; 24: 72–74;

7. Carolin Mehlhorn et al. (2024) «Konventionelle und molekulare Diagnostik bei Onychomykose – Teil 1», *Dermatologie* 75, 134–146. https://doi.org/10.1007/s00105-023-05260-0

8. E. Aho-Laukkanen et al. (2024) «PCR enables rapid detection of dermatophytes in practice» *Microbiology Spectrum* (Open Peer Review 2024)

9. For more information, please refer to the technical sheet