MycoReal® Kit Fungi

For research use only

MycoReal® Kit Fungi			
Order no.	**Reactions**	**Pathogen**	**Internal positive control**
DHUF00453	50	FAM channel	Cy5 channel

Kit contents:

- Detection assay for ITS2 region of fungi and for internal DNA positive control
- (IPC, control of PCR amplification and DNA extraction)
- Target for IPC
- Sequencing primer forward
- Sequencing primer reverse
- DNA reaction mix
- Nuclease-free water
- Positive control for *Rhizopus oryzae*

Background: Fungal diseases are mostly opportunistic infections with a great variety of common and uncommon pathogens. Up to 150 fungal species have been shown as potential human pathogens involving all body sites. Invasive mycoses are increasingly recognized as a primary cause of morbidity and mortality especially in immunocompromised patients. These infections are mainly caused by yeasts (such as *Candida* spp., *Cryptococcus neoformans*, *Saccharomyces cerevisiae, Trichosporon* spp.) and moulds (such as *Aspergillus* spp., *Scedosporium* spp., *Fusarium* spp., *Natrassia mangiferae, Curvularia* spp., *Schizophyllum commune, Paecilomyces variotii, Bipolaris* spp., *Cladophialophora bantiana,* and zygomycetes such as *Rhizopus* spp., *Absidia* spp., *Rhizomucor* spp., *Mucor* spp., *Cunninghamella bertholletiae, Saksenaea vasiformis, Apophysomyces elegans, Basidiobolus ranarum, Conidiobolus* spp.). The mortality rate of invasive fungal infections is 40-100%. A rapid diagnosis improves the outcome. Non-invasive fungal infections (such as infections of the urogenitary tract, of the eye, of the skin, etc.) are mainly caused by *Candida, Aspergillus, Acremonium, Fusarium* and dermatophytes (such as *Trichophyton* spp., *Microsporum* spp.).

Intended use: The test is intended for research use only.
MycoReal® Kit Fungi is a non-automated real-time PCR test for the qualitative universal (broad-range) detection and identification of DNA of fungi (ITS2 region). Fungal DNA is detected in FAM channel. The PCR amplicon is about 370 bp. For phylogenetic identification of the pathogen, the PCR amplicon must be sequenced and analysed by BLAST in the NCBI database after real-time PCR.
The Internal Positive Control (IPC) is detected in the fluorescence channel Cy5 and serves as a control for DNA extraction and possible real-time PCR inhibition. The target for the DNA IPC (artificial target DNA) is added during sample extraction.
MycoReal® Kit Fungi does not displace culture but offers an improvement in the detection of fungi in cases where the presence of fungi is suspected but culture remains negative, or the fungus is difficult to cultivate.

This kit is suitable for specimens taken from normally sterile sites. Proper specimens are DNA extracts isolated from samples of bronchoalveolar lavages (BAL), aspirates, cerebrospinal fluid, tissue, paraffin embedded tissue, fungal colonies as well as of environmental samples. The kit is suitable to a limited extent for the detection of fungi in blood samples. In case of a mixed fungal infection, the pathogen cannot be phylogenetically identified.

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PCR-platforms: MycoReal® Kit Fungi is compatible with real-time PCR instruments which detect and differentiate fluorescence in FAM and Cy5 channel (recommended are ABI® 7500 instrument, QuantStudio™ 5, QuantStudio™ 7 real-time PCR system (Thermo Fisher Scientific), LightCycler® 480 II (Roche Diagnostics) and Mx3005P® (Agilent)).

Performance data: The panfungal character of this test is ensured by the selection of universal primers and probes. The ITS2-region can be universally found in fungi and is therefore a proper target for the broad-range (panfungal) detection of fungal DNA. The limit of detection (LoD95% = smallest number of target DNA copies which can be detected in 95% of cases) is 40 copies/reaction. Validation was performed with a great variety of different isolates of *Dematiaceae*, dermatophytes, moulds and yeasts and bacteria.

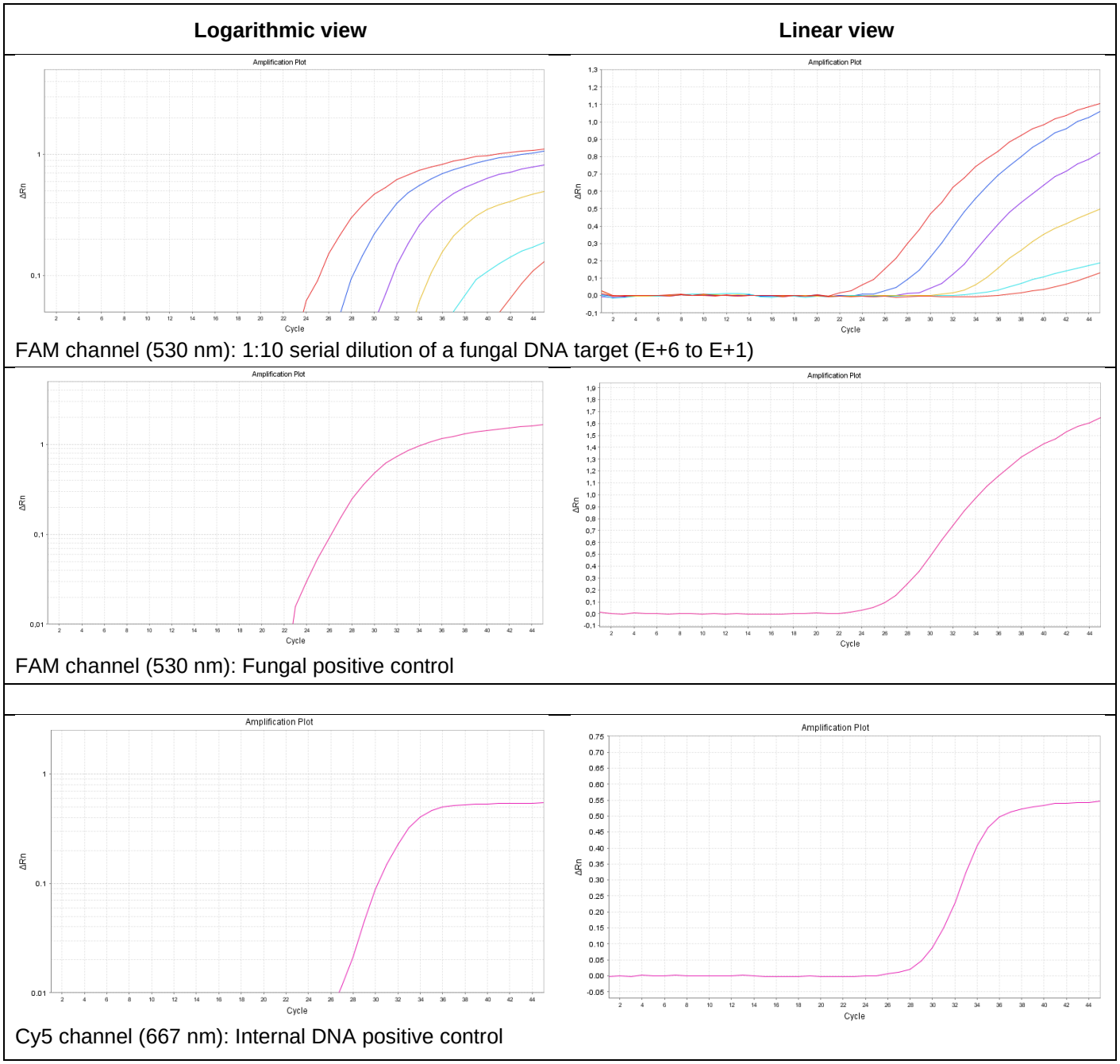

Figure 1 Performance of MycoReal® Kit Fungi

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