

PanReal Kit Fungi & Bacteria



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| Order no. | Reactions | Pathogen | Internal positive control |
|-----------|-----------|-------------------|---------------------------|
| DHUFB0153 | 50 | FAM + VIC channel | Cy5 channel |

For Research Use Only. Not for use in diagnostic procedures.

Kit contents:

- Detection assay for ITS2-region of fungi, 16S rDNA gene of bacteria and internal DNA positive control
- Target for internal DNA positive control (control of PCR amplification and DNA extraction)
- DNA reaction mix
- Nuclease-free water
- Sequencing primers
- Positive control for *Rhizopus* sp. and *Glaesserella parasuis*



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 and moulds. 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 urogenital tract, of the eye, of the skin, etc.) are mainly caused by *Candida*, *Aspergillus*, *Acremonium*, *Fusarium* and dermatophytes. Concerning bacterial infections, broad-range PCR targeting the 16S rDNA gene is useful when antimicrobial therapy has already been initiated or when culture remains negative due to infections caused by bacteria with unusual growth requirements.

Description: PanReal Kit Fungi & Bacteria is a multiplex-PCR real-time PCR test for universal detection of fungi and bacteria in samples purified from bronchoalveolar lavages (BAL), aspirates, cerebrospinal fluid, tissue, paraffin embedded tissue and fungal/bacterial colonies. The kit is suitable only to a limited extent for the detection of fungi in blood samples. This test is not suitable for the detection of bacteria in blood samples. For phylogenetic identification of the pathogen, the PCR product must be sequenced and analysed by BLAST. In FAM channel the ITS2-region of fungi is detected (amplicon of about 370 bp). In VIC channel the 16S rDNA gene of bacteria is detected (amplicon of about 550 bp). The internal DNA positive control (DNA IPC) is detected in Cy5 channel and is used as DNA extraction as well as real-time PCR inhibition control. The target for the DNA IPC is extracted with the sample.

PCR-platforms: This kit has been validated with ABI® 7500 instrument (Thermo Fisher Scientific) and tested with LightCycler® 480 Instrument II (Roche). It is compatible with real-time PCR instruments detecting and differentiating fluorescence in FAM, VIC and Cy5 channel.

Specificity and sensitivity: Extensive sequence comparison analysis validates the panfungal and panbacterial character of this test. The kit was tested on a great variety of different *Dematiaceae*, dermatophytes, moulds, yeasts and bacteria. Due to contamination, PanReal Kit Fungi & Bacteria is less sensitive compared to species-specific assays.

The limit of detection (LoD95% = smallest number of copies of target DNA which can be detected and sequenced in 95% of cases) is 40 target copies/reaction for the ITS-2 region and 5,000 target copies/reaction for the 16S rDNA target.

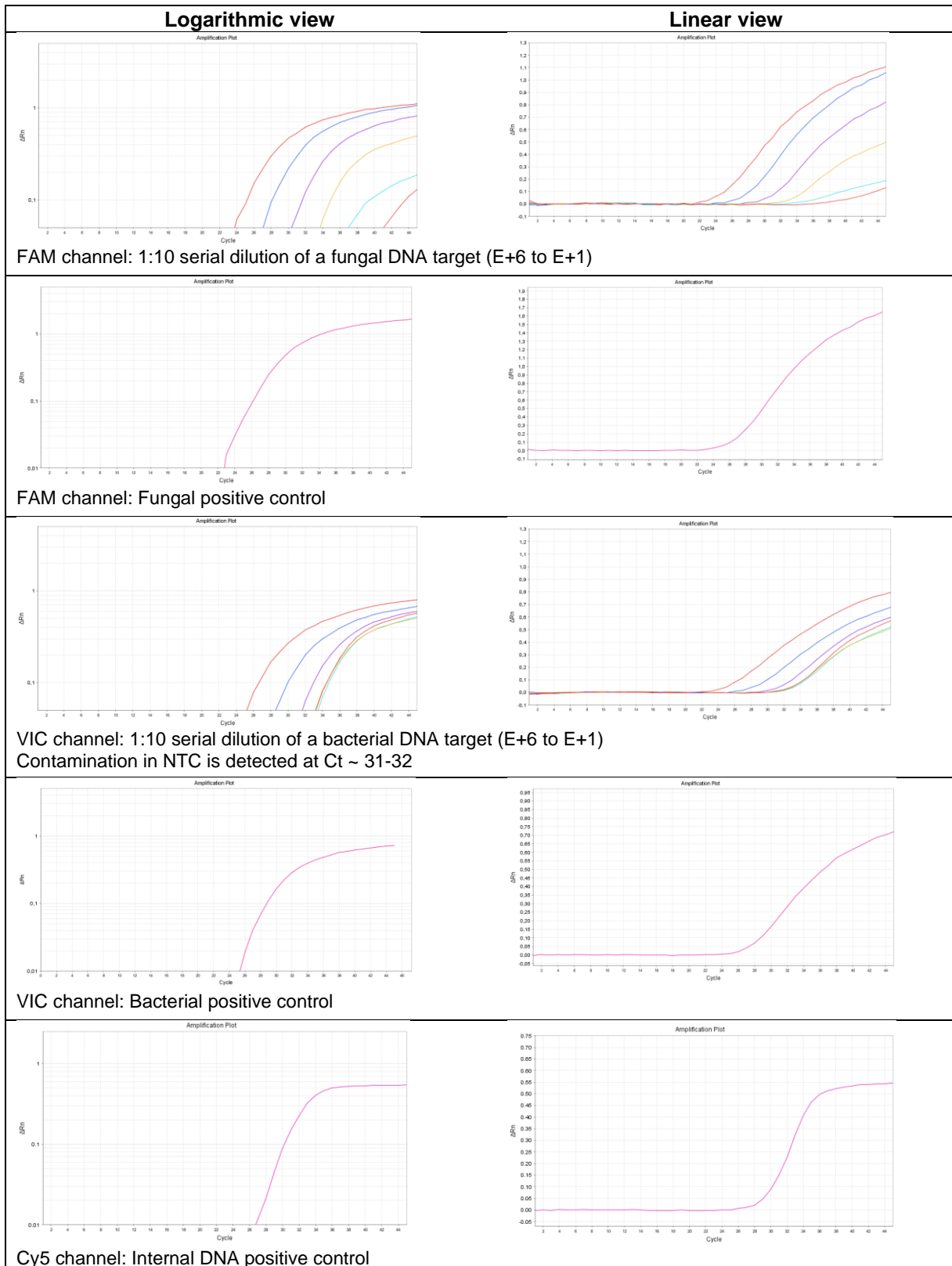


Figure 1 Performance of PanReal Kit Fungi & Bacteria

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