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# Identification of yeast in chronic wounds using new pathogen-detection technologies

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## Abstract

### Objective:

To evaluate the ability of two new diagnostic methods to detect and accurately identify yeast associated with chronic wound infections.

### Method:

Fungal tag-encoded FLX amplicon pyrosequencing (fTEFAP), a universal fungal identification method, bacterial tag-encoded FLX amplicon pyrosequencing (bTEFAP), a universal bacterial identification method, and a new quantitative polymerase chain reaction (qPCR) wound pathogen panel were used to evaluate three chronic wounds suspected to contain yeast.

### Results:

Forty wound samples were analysed in addition to the three samples suspected of containing yeast. The qPCR panel, which targets *Candida albicans*, detected this yeast in two of the three wound samples. In contrast, fTEFAP detected yeast in each of the three samples: two showed *Candida albicans* and the third *Candida parapsilosis*. fTEFAP also identified a lower level of *Candida tropicalis* in one of the wounds that was positive for *Candida albicans*. The qPCR wound panel results were returned within two hours, while the fTEFAP results were returned within 24 hours.

## Conclusion:

Two new molecular methods have been developed to aid wound pathogen diagnostics. The quantitative PCR wound panel is rapid but is limited to major wound-associated bacteria and yeasts. The universal fTEFAP and bTEFAP methods take 24 hours to return results but are able to detect the relative contribution of any bacteria or yeast in a chronic wound diagnostic sample.

## Declaration of interest:

Southwest Regional Wound Care Center is a clinical wound-care provider seeking to improve the ability of wound care practitioners to help patients. The Research and Testing Laboratory develops molecular methods including fTEFAP, bTEFAP and the quantitative PCR wound panel.

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