



Collection and Submission of Samples for Dermatophyte PCR and/or Culture

The NDSU-VDL offers two methods for testing samples for the presence of dermatophytes, culture and PCR. Fungal (dermatophyte) culture is a traditional fungal isolation method which offers results within 2 weeks of sample submission; polymerase chain reaction (PCR) is a rapid method for direct detection of dermatophyte DNA in a sample. The PCR assay detects *Microsporum canis*, *M. gypseum*, *Trichophyton verrucosum* and *T. mentagrophytes*.

Sample Collection:

The best samples for dermatophyte testing will have the hair shaft or crusts (scale) from areas of inflammation. Clipped hair may be falsely negative for dermatophytes due to inadequate sampling.

Collect hair plucks or crusts from affected areas (preferred sample for PCR). A brush method is another simple but effective method for sample collection. A packaged (sterile) human toothbrush is vigorously brushed over inflamed areas. For a quality sample, hair and crusts must be visible on the toothbrush.

If directly inoculating samples to fungal culture medium, gently press the toothbrush to the medium. Touch as many of the bristles to the medium as possible, being careful not to press too hard or remove culture medium. Use tape (two small pieces to secure the lid and base of the plate is sufficient) or parafilm to keep the plate from opening in transport.

Sample Submission:

Package the toothbrush, inoculated fungal culture plate, hair plucks, or crusts in a sealable plastic bag. Alternatively, hair plucks or crusts may be placed in a sterile sample tube or screwcap container. Place the primary sample bag in an additional clean bag to ensure containment.

Cross-contamination of samples is a concern for both culture and PCR methods; PCR is particularly sensitive to cross-contamination. To avoid cross-contamination of samples, do not place multiple samples together in the same primary bag. For example, do not place a sample tube in the same sample bag as a toothbrush.

Fill out a [submission form](#). Please provide a complete case history to aid in sample setup and result interpretation. Send the submission form to the laboratory with the samples; do NOT place the form in the sample bags.