

PCR: Fungal Culture Alternative

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In the Literature

Jacobson LS, McIntyre L, Mykusz J. Comparison of real-time PCR with fungal culture for the diagnosis of *Microsporum canis* dermatophytosis in shelter cats: a field study. *J Feline Med Surg*. 2017. doi: 10.1177/1098612X17695899

FROM THE PAGE ...

Results of fungal culture, the historic gold standard for dermatophytosis diagnosis, take 2 to 3 weeks to obtain. A test that provides rapid results is needed—especially in shelter settings, where rapid identification of contagious diseases is of paramount importance.

In this study of 132 cats, conventional fungal culture was compared with a commercial real-time PCR test for diagnosis of dermatophyte infection. Samples were obtained before treatment. For *Microsporum canis* culture-positive cats ($n = 28$), samples were obtained weekly during therapy until second negative fungal culture.

PCR correctly identified all culture-positive cats. There was good agreement between results from culture-negative cats and negative PCR results, although PCR produced 12 false positives (11.5%). In 2 cats that were initially culture negative but PCR positive, subsequent fungal culture was positive, indicating that the original negative fungal culture was inaccurate.

Seventeen fungal culture-positive cats had PCR and culture results for all time points until clinical cure. Of these, 64.7% remained PCR positive even at the time of second negative fungal culture.

The overall sensitivity and specificity of the commercial dermatophyte real-time PCR test was 100% and 88.5%, respectively.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Real-time PCR offers a highly sensitive, rapid test for dermatophytosis. PCR consistently detected fungal-culture positive animals. A small number of false positives were seen. It would be reasonable to start treatment based on a positive PCR test.
- 2** In animals that have been undergoing therapy, PCR often remains positive when fungal cultures are negative. If PCR is used to determine mycologic cure, the clinician may continue treatment longer than necessary. Fungal culture may be a better test to determine mycologic cure, although the wait time for culture results remains a concern.
- 3** This study evaluated only one dermatophyte PCR test. As different laboratories may use different methods, these results should not be extrapolated to other dermatophyte PCR tests. In addition, other dermatophyte species are of concern. Further tests are needed to evaluate PCR as a test for *M gypseum* and *Trichophyton mentagrophytes*.