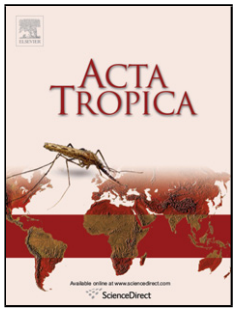

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The applicability of real-time PCR in the diagnostic of cutaneous leishmaniasis and parasite quantification for clinical management: current status and perspectives

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Abstract

Cutaneous leishmaniasis (CL) is spread worldwide and is the most common manifestation of leishmaniasis. Diagnosis is performed by combining clinical and epidemiological features, and through the detection of *Leishmania* parasites (or DNA) in tissue specimens or trough parasite isolation in culture medium. Diagnosis of CL is challenging, reflecting the pleomorphic clinical manifestations of this disease. Skin lesions vary in severity, clinical appearance, and duration, and in some cases, they can be indistinguishable from lesions related to other diseases. Over the past few decades, PCR-based methods, including real-time PCR assays, have been developed for *Leishmania* detection, quantification and species identification, and improving the molecular diagnosis of CL. This review provides an overview of many real-time PCR methods reported for the diagnostic evaluation of CL and some recommendations for the application of these methods for quantification purposes for clinical management and epidemiological studies. Furthermore, the use of real-time PCR for *Leishmania* species identification is also presented. The advantages of real-time PCR protocols are numerous, including increased sensitivity and specificity and simpler standardization of diagnostic