Polymerase chain reaction detection of *Leishmania* DNA in skin biopsy samples in Sri Lanka where the causative agent of cutaneous leishmaniasis is *Leishmania donovani*

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Leishmania donovani *is the known causative agent of both cutaneous (CL) and visceral leishmaniasis in Sri Lanka. CL is considered to be under-reported partly due to relatively poor sensitivity and specificity of microscopic diagnosis. We compared robustness of three previously described polymerase chain reaction (PCR) based methods to detect* Leishmania *DNA in 38 punch biopsy samples from patients presented with suspected lesions in 2010. Both,* Leishmania *genus-specific JW11/JW12 KDNA and LITSR/L5.8S internal transcribed spacer (ITS)1 PCR assays detected 92% (35/38) of the samples whereas a KDNA assay specific for* L. donovani *(LdF/LdR) detected only 71% (27/38) of samples. All positive samples showed a* L. donovani *banding pattern upon HaeIII ITS1 PCR-restriction fragment length polymorphism analysis. PCR assay specificity was evaluated in samples containing* Mycobacterium tuberculosis, Mycobacterium leprae, *and human DNA, and there was no cross-amplification in JW11/JW12 and LITSR/L5.8S PCR assays. The LdF/LdR PCR assay did not amplify* M. leprae *or human DNA although 500 bp and 700 bp bands were observed in* M. tuberculosis *samples. In conclusion, it was successfully shown in this study that it is possible to diagnose Sri Lankan CL with high accuracy, to genus and species identification, using* Leishmania *DNA PCR assays.*

Key words: cutaneous leishmaniasis - *Leishmania donovani* - PCR-RFLP - Sri Lanka