



**MOLECULAR DETECTION OF *Leishmania donovani* PARASITES IN
WILD CAUGHT *Phlebotomus argentipes* USING A PCR ASSAY AND
SPECIES ABUNDANCE OF SAND FLIES (DIPTERA: PSYCHODIDAE)
IN KURUNEAGALA DISTRICT; AN ENDEMIC FOCUS OF
CUTANEOUS LEISHMANIASIS IN SRI LANKA**

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ABSTRACT

Leishmaniasis is a vector borne parasitic infection caused by parasites of genus *Leishmania* and transmitted through the bite of female Phlebotomine sand flies. Due to practical limitations in traditional methods such as microscopic observation and culture of parasites in selective media to detect *Leishmania* spp within sand flies, molecular based methods have become more popular among scientific community due to its high reliability and specificity. In this study, the field caught sand flies were dissected and identified to the species level using available morphological keys. These specimens were washed with saline and DNA extraction was carried out using MightyPrep reagent for DNA (Takara Bio Inc, Japan). The resulted lysates were tested for *Leishmania donovani* parasites by PCR using kinetoplast mini-circle sequence as the target sequence and SalotraConv_F/SalotraConv_R (591bp) as the primers. A total of 1,662 sand flies were collected and majority of them were *Phlebotomus argentipes* (n=1517, 91.27%) followed by *Sergentomyia punjabiensis* (n=140, 8.72%). The parasite *Leishmania donovani* detected from 2 *P. argentipes* out of 87 screened sand flies indicating an infection rate of 2.3% while, none of the screened *S. punjabiensis* was positive for *L. donovani*. The results agree with the previous studies conducted in Sri Lanka, which also reports *P. argentipes* as a potential vector. The observed higher infection rate for *P. argentipes* during the current study confirms the role of the species as a potential vector for leishmaniasis in Sri Lanka and it also emphasizes the importance of further studies on assessing vectorial capacity of this species which may be useful in defining the risk area.

Keywords: Leishmaniasis, Sri Lanka, *Leishmania donovani*, PCR, *Phlebotomus argentipes*