

## Microsatellite Typing of *Leishmania donovani* from the Indian Subcontinent Reveals a Homogenous Population Structure

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To date, multilocus microsatellite typing (MLMT) is the tool of choice for epidemiological and population genetic research in *Leishmania*. Due to their genetic variability, stability and sensitivity, specifically developed microsatellite markers allow identification and testing of complex epidemiological patterns. *Leishmania donovani* is the causative agent of visceral leishmaniasis (VL) on the Indian subcontinent. Fatal when left untreated, this poverty-associated disease still represents a major public health burden. Furthermore, there is limited information concerning the emergence and expansion of drug resistance, hence it deserves further investigations.

*L. donovani* isolates from Indian and Nepalese VL patients show variability in drug susceptibility. Screening *L. donovani* strains that represent different phenotypes, analysing their intra-specific micro-epidemiology and geographical origin might enhance the understanding of population dynamics. A set of 15 hyper-variable microsatellite markers has been applied successfully in genetic investigations of strains belonging to the *L. donovani* complex derived from different endemic areas. Additionally, this marker set was tested for its stability during long-term *in-vitro* cultivation and proved its suitability for population genetic studies.

Despite their ability to distinguish strains and to identify different populations for East African *L. donovani* and Mediterranean *L. infantum*, the marker set did not sufficiently discriminate stains from the Indian subcontinent. Most of these strains shared the same microsatellite profile regardless of the isolate's origin or treatment outcome. This indicates a remarkable homogeneous population of *L. donovani* circulating the Indian subcontinent. There is a need to establish a complementing set of markers with increased discriminatory power that would suit investigations of this neglected disease.