# Isoenzyme analysis of the leishmania parasites, isolated from Reservoirs hosts, vectors and human in Northwest of Iran

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## Abstract

**Background & Objective:** Despite their very wide geographical distribution in the Mediterranean region, most Leishmania infantum strains belong to zymodeme MON-1. As different Leishmania species are known to cause different clinical symptoms and may require different treatment protocols, therefore this study was done to identify and characterize the leishmania agents causing visceral, Leishmaniasis (VL) in humans, reservoirs and vectors in the north-west of Iran by Isoenzyme analyses.

**Materials & Methods:** In this descriptive and cross sectional study, The samples collected from 12 VL confirmed patients (bone marrow aspirates), 26 dogs (spleen and hepatic aspirates) and more than 100 sand flies from northwest of Iran between 2005 and 2006. All aspirated material from human, canine and sandflies demostrated growth of Leishmania parasite in NNN and αMEM media. The above species compared with WHO reference strains, Leishmania (Leishmania) donovani (DD8), L (L) infantum (IPT-1), L (L) tropica (K-27), and L(L) major (5-ASKH), using thin layer starch gel electrophoresis. The enzymes investigated in this study were ALAT, ASAT, SOD, ES,NH, MPI, GPI, MDH, 6PGD, PGM, PEPD, and PDK.

**Results:** In this study L.infuntum. MON-1 was the only zymodeme present in all samples of dogs and human sandflies.

**Conclusion:** We concluded that the visceral Leishmania (VL) focus in northwest of Iran is evidently Mediterranean type, which extends from Portugal and Morocco to Pakistan and the Central Asia and domestic doges act as the reservoir host in northwest of Iran, where the complete life cycle of zymodeme MON-1 has been identified.

**Key Words:** Leishmania infantum, Isoenzyme electrophoresis, Iran

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