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### Diagnosis of Canine Visceral Leishmaniasis by ELISA Using K39sub Recombinant Antigen

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#### Abstract:

Background: Surveillance of the canine reservoir is highly important to help control of visceral leishmaniasis in human. It is therefore imperative to improve and develop new tools reliable, easy to use, and cheap for the diagnosis of canine leishmaniasis. K39 sub recombinant antigen of *Leishmania infantum* was expressed in prokaryotic system and evaluated for sero-diagnosis of canine visceral leishmaniasis (CVL). Methods: The gene fragment encoding a single 39-amino acid subunit of the kinesin-related protein k39 (k39sub) was amplified from DNA of Iranian strain of *L. infantum* (MCAN/IR/96/LON49) and cloned into a pMAL-p2 expression vector in frame with maltose-binding protein (MBP) fusion. The antigenic properties of *L. infantum* recombinant K39 sub-unit (39 amino acids) have been tested for the serological diagnosis of CVL by ELISA. K39sub ELISA for CVL was compared with a standard direct agglutination test (DAT) on 55 clinically infected dogs and 71 healthy controls from endemic areas of Ardabil and East Azerbaijan provinces, north-west of Iran. Results: A sensitivity of 72.7% and specificity of 87.3% were found at a 1:320 cut off titer when DAT confirmed cases were compared with healthy control. A good concordance was found between k39sub ELISA and DAT ( $k= 81.0$ ). Conclusion: Given the antigenic properties shown by the k39sub, we think this protein carry immunodominant epitopes and are valuable for the sero- diagnosis of *L. infantum* infection in dogs.

#### Keywords:

K39antigen , *Leishmania infantum* , Dogs

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