The Journal of Parasitology – Leishmaniasis, a parasitic disease caused by sand fly bites, is known to be a regular occurrence in 98 countries worldwide, with more than 350 million people at risk. The normal path of dissemination is from sand fly to domesticated dogs and humans. Currently, there are no effective canine or human vaccines available, and the disease is treated on a case-by-case basis. The most well-known treatment for leishmaniasis infection is chemotherapy, and the currently available anti-leishmanial drugs are considered toxic, expensive, and require long-term treatment.

In the article "Cytotoxic Screening and In Vitro Evaluation of Pentadecane Compound Against *Leishmania infantum* Promastigotes and Amastigotes," in *The Journal of Parasitology*, a study was conducted to determine whether the use of pentadecane could be a better source of treatment against leishmaniasis. Pentadecane is an organic compound that is made up of primarily carbon and hydrogen atoms and can be found in different plant varieties. The study was conducted using pentadecane against the *Leishmania infantum* parasite at two different life stages, promastigote and amastigote.

To obtain rigorous results, all experiments were performed by two observers in three replicates and repeated with three new batches of parasites. Parasites were incubated with different concentrations of pentadecane, and the viability of the parasitic stages was compared to controls after incubation for 48 hours. Analysis of propidium iodide incorporation using flow cytometry suggested that pentadecane-treated parasite cells were arresting in the sub G0/G1 and G1 phase of the cell cycle. However, cytotoxicity tests on eukaryotic cells showed that immortalized cell lines and epithelial cells were not affected by the pentadecane. The overall conclusions were that pentadecane treatment was effective against intracellular amastigotes, with a growth inhibition of 77% after 48 hours of treatment at the 300 µM level; it also decreased the viability of *Leishmania* promastigotes and amastigotes up to 14% at 300 µM.

Given the extremely toxic nature and high expense of on-going treatments for leishmaniasis, it is imperative that further research be conducted to determine if pentadecane might offer promising leads in the fight against this parasite. The authors suggest identifying the pentadecane mechanism as a starting point, and to determine if it can be used best as a single compound or work in tandem with other synthetics as a fortifying agent against leishmaniasis.

Full text of "Cytotoxic Screening and In Vitro Evaluation of Pentadecane Compound Against *Lei shmania infantum*

Promastigotes and Amastigotes,"
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The Journal of Parasitology is the official journal of the American Society of Parasitologists (ASP). It is a medium for the publication of new original research, primarily on parasitic animals, and official business of the ASP. The journal is intended for all with interests in basic or applied aspects of general, veterinary, medical parasitology, and epidemiology. For more about the journal or society, see http://www.journalofparasitology.org .