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Authors: Vineet Jain, Keerti Jain

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Molecular targets and pathways for the treatment of visceral leishmaniasis

Vineet Jain[1] and Keerti Jain[1,2]

[1]National Institute of Pharmaceutical Education and Research (NIPER), Raebareli, India
[1]Current address: Faculty of Pharmacy, The Maharaja Sayajirao University (MSU) of Baroda, Vadodara, India

Corresponding author: Jain, K. (keertijain02@gmail.com)

Teaser: Visceral leishmaniasis is a complicated disease that can be fatal if left untreated. To improve its treatment protocol, comprehensive investigations of biomolecular targets and/or pathways that can modify the disease are required.

Highlights

- Visceral leishmaniasis is a complicated infectious disease.
- Emerging resistance is one of the main complications in treatment visceral leishmaniasis.
- A comprehensive investigation of biomolecular targets/pathways is required.
- Ornithine decarboxylase and trypanothione reductase could be important druggable targets.

Visceral leishmaniasis (VL) represents the most severe form of the tropical disease, leishmaniasis. Treatment of VL is complicated because of the few clinically approved antileishmanial drugs available; emerging resistance to first-line drugs; need for a temperature-controlled 'cold' supply chain; serious toxicity concerns over drugs such as Amphotericin B; high cost of medication; and unavailability of clinically approved antileishmanial vaccines. Attacking potential molecular targets, specific to the parasite, is a vital step in the treatment of this and other infectious diseases. As we discuss here, comprehensive investigation of these targets could provide a promising strategy for the treatment of visceral leishmaniasis.

Keywords: visceral leishmaniasis; amphotericin B; *Leishmania*; trypanothione reductase; molecular targets.

Introduction