The Centre for Blood Research Seminar Series

CBR

Dr. Kishor Wasan

Professor, Associate Dean and Director NGDI-UBC

Wednesday, April 3rd, 2013

LSC 3 - Life Sciences Centre

2350 Health Sciences Mall

12-1pm

"The Development of an oral formulation of Amphotericin B and the story of NGDI-UBC: Engaging the Next Generation of Scholars"

This talk will highlight our current findings and future goals toward the development of a lipid-based amphotericin B formulation for oral administration. Initial data from both cell lines and in vivo research indicate that it is highly efficacious and exhibits low toxicity within the dosage range required in treating diseases such as systemic fungal infections and leishmaniasis. Each year in the Indian subcontinent alone, over 500,000 individuals play host to Leishmania donovani, an insidious parasite that invades macrophages, rapidly infiltrates the vital organs and ultimately leads to severe infection of the visceral reticuloendothelial system. Visceral leishmaniasis, also known as Kala-azar, is most prevalent in the weak and the young within a population. Left untreated, almost all infected individuals will die. The therapeutic arsenal against Leishmania is limited to a small number of parenterally administered agents, with daily injections of pentavalent antimony compound for 28 days being the usual course of action. Amphotericin B is the secondary treatment of choice against leishmaniasis and has a 97% cure rate with no reported resistance. However, therapy with the first-generation formulation (Fungizone®) involves IV administration over a period of 30 -40 days and is associated with infusion and drug-related side-effects. Although lipid-based second-generation formulations exist, which require a shorter course of therapy (3-5 days), are highly effective and exhibit lower toxicity when compared to Fungizone®, the cost of these formulations is a barrier to wide-spread use. Due to the difficult route of drug administration, toxicity issues and cost, amphotericin B is failing to reach the infected population and mortality rates continue to rise.