

## International Conference on Retroviruses & Novel Drugs

June 08-09, 2015 Chicago, USA

## "HIV Extracellular Tat: Myth or Reality?

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The human immunodeficiency virus type 1 (HIV) eradication will require elimination of HIV infected cells. No antiretroviral treatments (ART) or vaccine approaches have been able to reduce significantly the level of HIV infected cells in peripheral blood. This inefficacy is generally explained by the presence of a major reservoir of latent HIV infected cells in the central nervous system (CNS) that would be a sanctuary where Cytotoxic T Lymphocytes (CTL) have no access and would refresh peripheral blood with activated HIV infected cells. In this review, the presence of a major reservoir in the CNS appears to be inconsistent with recent clinical studies measuring HIV DNA. The major reservoirs are gut tissue, rectal tissue and the peripheral blood where HIV infected cells survive in an environment containing CTL. Extracellular Tat might protect HIV infected cells from CTL due to its capacity to cross CTL membranes and trigger apoptosis. Evidences of Tat secretion from HIV infected cells are shown with the detection of Tat antibodies in different clinical studies. Presence of neutralizing Tat antibodies in cohorts of patients who were exposed to HIV but who are now seronegative is described. The conclusion of this review is that a vaccine eliciting neutralizing antibodies against Tat might significantly reduce the level of HIV infected cells, what ART or other vaccine approaches have been unable to achieve now. It could be a first step towards HIV eradication.

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