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Commentary

Commentary: Role of MicroRNAs in HIV Related Studies

Micro RNAs (miRNAs) are well known regulatory factor of physiological and developmental processes, it has been revealed that many miRNAs contribute the initiation and progression of various cancers. Micro RNAs are being reported in body fluids, such as serum, plasma, and urine, and can be readily used as non-invasive biomarkers for various diseases and served as a novel diagnostic and prognostic tools. Recently, microRNAs are considered as a powerful biomarker in HIV-related studies [1-3]. So this short Commentary will explain information about the role of micro RNAs in HIV related studies.

A most recent study shows that cellular micro RNAs (miRNAs) can play crucial roles in controlling HIV-1 infection and replication. In addition, HIV-1 can manipulate the biogenesis of miRNAs as well as the expression profiles of cellular miRNAs [1]. It has been suggested that micro RNAs (miRNAs) contribute to the IFN- α -mediated suppression of HIV-1, moreover.

The specific reduction of miR-422a is associated with exogenous IFN- α treatment, and likely contributes to the IFN- α suppression of HIV-1 through the enhancement of anti-HIV-1 restriction factor expression and regulation of genes involved in programmed cell death [2].

Reynoso et al. 2014 explains about the levels of circulating miRNAs might be of diagnostic and/or prognostic value for HIV infection, and hsa-miR-29b-3p and miR-33a-5p may contribute to the design of new anti-HIV drugs [3]. In the case of anti-retroviral therapy (ART), CD4 T cell count and plasma viral load are surrogate markers of HIV/AIDS progression. But, their reliability has been questioned in patients on ART therapy [4]. In the same pilot

study reported that expression of five miRNAs in peripheral blood mononuclear cell (PBMCs) and two of these miRNAs (miR-146b-5p and miR-150) in the plasma of HIV/AIDS patients, which developed ART resistance in those patients [4,5].

According to the above recent studies, micro RNAs play an important role in HIV related studies, either it may enhance the viral activity or decrease the viral activity in HIV infected Patients [6]. The number of studies related to the role of micro RNAs in HIV related diseases is sparse. Concentrating micro RNAs signal transduction pathways may be a diagnostic and prognostic value in identifying the therapeutic target for HIV related studies [7,8].

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