

Pharmaceutical Nanotechnology and Nanomedicine

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Nano-Formulation Can Potentially Increase Bioavailability Of Effective Drug In Brain

The deadly virus HIV-1 causes HIV associated dementia (HAD). Although disease severity has been reduced by the successful introduction of combined antiretroviral therapy (cART), complete eradication of HIV-1 has not been possible yet, especially from the **central nervous system (CNS)**. Neither it is possible to hit the HIV where it hides, nor to prevent the CNS infection and related CNS injury. In pre-HAART era HIV-associated dementia (HAD) was the most common (20-30%) worldwide among HIV infected AIDS people, especially subtype B predominant infections. Of the various subtypes of human immunodeficiency virus type I (HIV-1) and their recombinant forms, subtype C strains are responsible for approximately half of the global infections. In India, the low prevalence of HIV-associated dementia (HAD) in the Human immunodeficiency virus type 1 (HIV-1) subtype C infection is quite paradoxical given the high-rate of macrophage infiltration into the brain. Whether the direct viral burden in individual brain compartments could be associated with the variability of the neurologic manifestations is controversial. To understand this paradox, we examined the proviral DNA load in nine different brain regions and three different peripheral tissues derived from ten human subjects at autopsy. Blood Brain barrier has restricted permeable to highly active anti-retroviral drug (HAART). Specific brain-targeting drugs can be formulated using nanotechnology and those nano-formulation of these drugs, can potentially increase bioavailability of the effective drugs to specific targeted regions while preserving **neurological integrity**, which can give alternative therapeutic.

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Biography

Mamata Mishra has completed her PhD from National Brain Research Centre, INDIA. She has 2 years of post-Doctoral research at Temple University, Philadelphia, PA, USA and 3 years as Research Scientist at IISC., JNCASR, Bangalore, INDIA. As the head of Stem Cell Laboratory, Navi Mumbai for 4 years and currently as **Senior Research Scientist**, at JAI RESEARCH FOUNDATION, Gujarat, India. She has 24 international publications that have been cited over 687 times, and her publication h-index is 18. She has international award from International Society of Neurovirology (ISNV) San Diego, USA as Young-investigator and she has "Best Paper published" award from Indian Academy of Neuroscience, India. She has been serving as an editorial board member of several peer reviewed reputed journals.

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