

## Editorial Note for Antiretrovirals: New Drug Delivery Systems

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### DESCRIPTION

Human Immunodeficiency Virus (HIV) is a retrovirus that causes irreversible destruction of the immune system, leading to the occurrence of opportunistic infections and malignancies. During the last decade, even though attempts were being made to eradicate HIV, it was found that eradication of HIV is highly unlikely, and effective antiretroviral therapy is required on a long-term basis to maintain viral suppression and reduce disease progression.

During this decade, effective therapies aimed at continued suppression of HIV replication and targeted at resting HIV reservoirs such as brain, lymphatic systems will be critical to prolong survival and renewing hopes for a cure. Currently available anti HIV drugs can be classified into three categories: nucleoside reverse transcriptase inhibitors, non-nucleoside reverse transcriptase inhibitors and protease inhibitors.

Most of these drugs bear some significant drawbacks such as relatively short half-life, low bioavailability, poor permeability and undesirable side effects. Efforts have been made to design drug delivery systems for anti HIV agents to: a) reduce the dosing frequency, b) increase the bioavailability and decrease the degradation, metabolism in the gastrointestinal tract, c) improve the CNS penetration and inhibit the CNS efflux, and d) deliver them to the target cells selectively with minimal side effects. This article is an attempt to compile all major research work towards drug delivery for AIDS therapy and channel future attempts in the area of more effective controlled delivery of anti HIV agents. Human Immunodeficiency Virus (HIV) is a retrovirus that can be subdivided into HIV-1 and HIV-2. Both types of HIV infection depletes the helper T-lymphocytes, resulting in continued destruction of the immune system, leading to the occurrence of opportunistic infections and malignancies.

During the last decade, though attempts were being made to eradicate HIV, it was found that eradication of HIV is highly unlikely, and effective antiretroviral therapy is required on a long-term basis to maintain viral suppression and reduce disease progression. During this decade, effective therapies aimed at continued suppression of HIV replication and targeted at resting HIV reservoirs such as brain, lymphatic systems will be critical to prolong survival and renewing hopes for a cure. Thus goals of antiretroviral therapy include, reducing the symptoms of HIV infection and delay disease progression to AIDS, reducing viral load to undetectable levels or lowest level possible for sufficiently longer duration, maintenance of durability of viral suppression, eliminating resting reservoirs of HIV, reducing viral resistance and drug failure, designing effective therapeutic regimens that minimize the drug adherence problem, reducing total pill burden and minimizing interference with qual. Novel drug delivery systems present an opportunity for formulation scientists to overcome the many challenges associated with antiretroviral (ARV) drug therapy, thereby improving the management of patients with HIV/AIDS.

### CONCLUSION

The disputes related to antiretroviral drug therapy has been vesicular is surmounted by adapting the various novel drug delivery methods, which pays pathway for many scientists to prove the efficiency of their techniques. Even though there are certain successful technologies emerging under this field, the progression of vesicular systems like liposomes and nanosized systems like nanoparticles exhibits superior attention and significance over the other schemes.

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