

Single-cycle- infection Viral Vectors as Model Probes for Antiviral Screening, Potential Application in Nanomedicine

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Abstract

Alternative screening for nanomedicines applications, especially in the search for novel antiviral agents is very dire. Due to salient problems related with safety, speed, flexibility and cost associated with traditional antiviral screening techniques, alternative screening methods devoid of these limitations are constantly being sought for. Our approach has been largely based on the use of recombinant viral vectors expressing various reporter genes that could be diversely engineered to mimic the wild type parental virus as much as is required. To guarantee safety, the viral vectors are also engineered to undergo only a single replicating cycle. Using such recombinant single-cycle-infection viral vectors based on lentiviruses, retroviruses and adenoviruses as model probes, we have screened several medicinal plants for anti-HIV and anti-adenoviral properties.

Keywords: Viral vectors, probes, anti-HIV

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