Engineering Viral Vectors for gene transfer and gene therapy

Marcio Chaim Bajgelman, PhD

Laboratório Nacional de Biociências, Centro de Pesquisa em Energia e Materiais

Viral Vectors can be used as gene transfer tools, to induce over expression. Or even inhibition of a gene of interest, triggering a modification in the cell genotype or phenotype. Among the most popular platforms, there are murine retroviral vector, human lentiviral vectors, adenoviral vectors and adenovirus-associated derived vectors. Each platform has different features, as tropism and integration profile, which can be used for a particular purpose. Besides the use in basic research, the viral vectors are also employed in biotechnological applications and for developing new therapeutic strategies for clinical protocols. This seminar will present the basic concepts for developing of viral vectors platforms and illustrating applications based on examples from literature and results of our research group.