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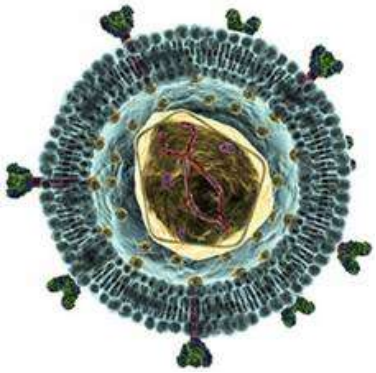

Lentivirus systems: Resources

Risk Factors associated with using Lentiviral vectors:
The two main concerns in working with HIV-1 lentiviral vectors is the generation of replication competent lentivirus. Additionally, there is a potential for oncogenesis or the formation of tumors through insertional mutagenesis. While risks are ever present, they can be reduced through the use of a third generation lentivector as well as with proper engineering of the viral vector.

Resources:
NIH Guidelines for Research involving recombinant DNA molecules, May 2011
http://oba.od.nih.gov/oba/rac/Guidelines/NIH_Guidelines_prn.pdf

Biosafety Considerations for Research with Lentiviral Vectors
NIH OBA Guidance on the use of Lentiviral vectors

Lentiviral Vectors: Safety Issues (PowerPoint)
http://www.fda.gov/ohrms/dockets/ac/01/slides/3794s2_02_takefman/index.htm

Additional References:
Chang, L. and Zaiss, A. (2002). Lentiviral Vectors Preparation and Use. *Meths in Mol Med,* 69:303-318.

Debyser, Z. (2003). Biosafety of Lentiviral Vectors. *Cur Gene Ther,* 3:517-525.

Escors, D. and Breckpot, K. (2010). Lentiviral Vectors in Gene Therapy: Their Current Status and Future Potential. *Arch Immunol Ther Exp,* 58:107-119.

The NIH does not regulate which generation of Lentivirus to use in research. However, it is anticipated that in the next few years it will be required that only the use of generation two and above will be acceptable due to biosafety considerations. Therefore, we recommend starting the transition now and only use Lentivirus vectors generation two and above.

If you have any questions regarding the risks or use of lentiviral vectors in your research, please call Bernie Menuey (6-6440) or Eric Steelman (6-4254).