



Risk Assessment for Retroviral Expression Systems

Our Retroviral Expression System employs 3rd generation self-inactivating recombinant Retroviral vectors with enhanced biosafety and minimal relation to the wild-type Moloney Murine Leukemia virus. The Retroviral particles produced with this system are replication-incompetent and designed with a number of safety features to enhance its biosafety.

All Retroviral Expression Systems provided from **abm** include the following safety features:

- The number of Retroviral genes necessary for packaging, replication and transduction is limited to three (Gag/Pol/Rev), and their expression is derived from different plasmids, all lacking packaging signals. The plasmids share no significant homology to the expression vector, preventing the generation of replication-competent virus.
- None of the Gag, Pol, or Rev genes will be present in the packaged viral genome, thus making the mature virus replication-incompetent.
- All packaging plasmids containing Gag/Pol/Rev do not contain the 3' and 5' Δ LTR, thus reducing the likelihood of retrovirus replication.
- An enhancer deletion in the U3 region of 3' Δ LTR ensures self-inactivation of the lentiviral vector following transduction & integration into the target cell's genomic DNA.