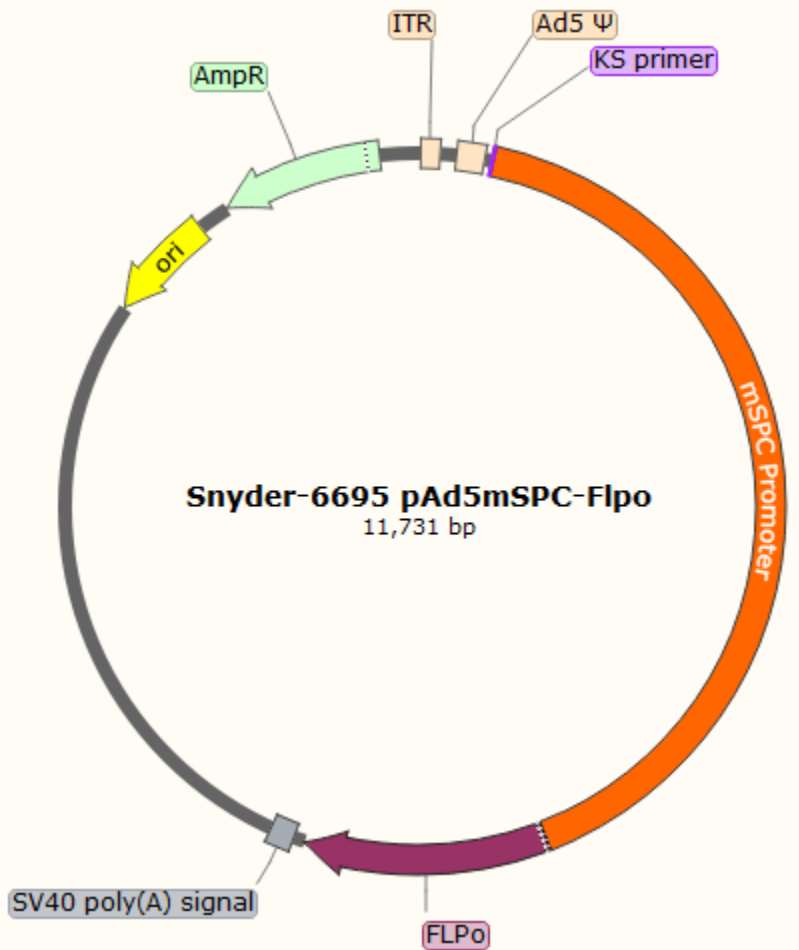


# Snyder-6695 Ad5mSPC-FLPo

## Plasmid: pAd5mSPC-FLPo-SV40pA



**Antibiotic Resistance:** Ampicillin  
**Backbone:** pBR322

**Note:** To check the integrity of the Ad5 plasmid, perform single restriction enzyme digestions with NheI, BssHII, SacII and XmaI.

Adenoviral vector with Surfactant Protein C promoter driving the expression of FLPo recombinase protein, published from the lab of Dr. Philippe Soriano. A material transfer agreement is required for use of FLPo from Fred Hutchinson. Please email [MTA@fredhutch.org](mailto:MTA@fredhutch.org) to initiate this process. Once an MTA has been secured, please send a copy to [vectors@uiowa.edu](mailto:vectors@uiowa.edu).

The mSPC promoter in this vector is specific to type II pneumocytes in the lung. Grace Orstad from the lab of Dr. Eric Snyder cloned the vector. Please acknowledge Dr. Eric Snyder from the Huntsman Cancer Institute in any publications using this virus. [eric.snyder@hci.utah.edu](mailto:eric.snyder@hci.utah.edu).

Mouse sequence: chr14:70,524,050-70,528,805 (GRCm38/mm10 Assembly)  
4756 bp. Includes part of 5' UTR of "surfactant associated protein C" (NM\_011359) – stops 6 bp from  
ATG.

pAd5mSPC-FLPo-SV40pA

AATTAATTAAGCTAGCATCATCAATAATATACCTTATTTTTGGATTGAAGCCAATATGATAATGA  
GGGGTGGAGTTTGTGACGTGGCGCGGGCGTGGGAACGGGCGGGTGACGTAGTAGTGTGGCG  
GAAGTGTGATGTTGCAAGTGTGGCGGAACACATGTAAGCGACGGATGTGGCAAAGTGACGTTT  
TTGGTGTGCGCCGGTGTACACAGGAAGTGACAATTTTCGCGCGGTTTTAGGCGGATGTTGTAGT  
AAATTTGGGCGTAACCGAGTAAGATTTGGCCATTTTCGCGGAAAACCTGAATAAGAGGAAGTGA  
AATCTGAATAATTTTGTGTTACTCATAGCGGTAATATTTGTCTAGGGAGATCCGGTACCGTTTA  
AACTCGAGGTCGACGGTATcgatactagaggggaagctaaagcaagatgatcaagagtcaagagcatcctggcctatag  
tgagacctcagctaaagaaaaaaccccccaaaaaaaccaaaagaacaacaataaaacatcttcttagtgcc  
ccaccttcagccagcaggggaaacctgtctgtgagttaaagctccagcctgcagcctgggatactcctgcctttgacacccta  
acctgtgtagtccagttgccctgtgctgtgagccagcttgaggggaaggagcaaggaggggtaaggaggatgactgggg  
cagctggacagccatcccactgtccctggcagggcttggccagcacaaagggcagagtgaatctgtcctggattgtgcagc  
tgaggggctgggagaaggcaaaggatagtgccactgtgaggtttccactgccaggggtgtcacagagggaaccagagacia  
gggggaggagttggagcctaggcttagctatcgagaggtgcctgaggatgaagtagatgacagtgtgacgattggtccttgatg  
ccatgaagtcatctgagtgtagggcagcttgtgaggggggaagctcggggggtggggcagtaggcccatttcagagatgaaca  
cagtaaagtttagaaaagtagggcttttctgtgggtccagagctccagggggaacacagatctcatgatcaaaaggaaggca  
ctagggacttgccggaggagactcctgtgtttgtaacaacagctctatggtgtgtatgatcacatataggctgtgtgcatgctcct  
gctgtgacaagttcacagaactgaaagaaaacgtgtcaacatattccttctctgactgggaagacaggctgacaacctctcc  
ccatcttcatagcagattccagttaacattgtgtgtgctaaatggcaggtgaacaatgagggacctgaaaggattgcagagctg  
gcctgagggacaggtcacagagatgtgccctgactcatgaccttcagggtgagtgattcacagtcaggactagcttcagtgag  
agcaagtaaagaaggttgatccatagggttaggctgggggcaaggtgaggtctgtgtccagctgaagaggtagcttccctctcc  
ccactccctctcctccttcttctccaaggaaccaagaccctaccagatggtgagaaacatctgaaattcactcaggggaagct  
tgacagcagctccccataccccataaaaacaagttgtgctgttctttaaagtcctaatgctgtgagaaccagcttgatggcag  
cccgaggatccgagagagaacagaaggttctcctcacacttagcaatgatggcaagccccgctgtagctcctgtttggaataagt  
actacaactggacactgcccggccccgagatgccacagggacccccgagatgcctccagttcttcttgctctcctgctggcctgctg  
cccactggctcagaccaatgtgtgtgagtcagccatcaatctcaaggttccaggacaaccagggttaggagtgaggagcctggg  
ggatgggagaggggtgggagtgcaagcaggctgctttacatctgtcacctgcacacaaccaaggggagaggacattggctcc  
cttctccttctcctcctcagacctccccttctccttgacactaagacattgctgagctgtgggaggctgggcaaatatthaagg  
ggcagttagagagccaaggaagacagtgaggagcaaacatttcttctcctcctcactaagtttctcaggagctctcatctcaga  
tgccagactgctgtacagcttgatacggagccctccagctggagagaggattctgggggacagggaggctccagagctggag  
agaagggggccagcttgatcaaaaggggaaggacaaggtgctagggagctgggtgacatttcagagttcaagtagagttggcgc  
tgtgtctgattggcattcacatgcaacaatacatggaacagaacacggtgacacatgtgtacaatcttgactcaggaggctaa  
gccaagaggattgccaccagttcaaggccaacctgggatggggggagatgaggtcgtctcaaagtaaaatcaagggactggagaa  
atggctcggaggtcaccagcacgtattgctcttgagaaggccagaattaattccccagttcaacagttgaactccacctcggggg  
atctggctcagctatggtctccagccacagtcacacatgctgcacagatacacatgcaggcaaaaggtaaacctcaaaaaaca  
atccttttgaaagtttaaacattgtttcttttaaaatatttgatattgtatgtgtttcaaggccgaccatttggtactggaaaat  
caatgggtattttctcctggggaggggccaccttcccacctcaccagcctccccagttgccatggttctttgtgtaggattag  
gcctgtgggctttctcctcagtttgcccattcattggtgtcgttctgtctctcatctgggcagtcaggttgggagttgtatg  
cagcttctgatagcactaggagacacagctcaagcaaaagtcctgatccaatctctggctcacaatccttctgtctcctgttctg  
caatgtcctcggagccttagatgtgaagggtttgtaggtgattcattgggactggactccacaactctcattttgattggctgtggtt  
ttctgtagtagtctgtctgttgaaaaaacaagtttcttgacgaggggtgaggactatacttctcctgggtgtaaggacaaatg  
ataaactattcttagggattatgctgggtgtaggtgtaggctctcctcaataaccatcattagtagtagtagtaggttcc  
agtactaggtatggattctcttttgaggagcttaagtcaaatagagagttgttggtatgcacaagcaattttttaagcat

gggtgagaatatgcatctatatgtaacttcttaggtgattttgtataagggacttgcacacctgtggatttggatgtccatgaggag  
tctttgaaacaacttgggagacaacctggcacctgtgtgggagaacaggggtgcaggtcaatacaggggaagtactgtgctctggctt  
acacagtcataaaagttcagaggcacaagatttttcgagatcatctggccaacaactaaaaagaattggaggactggaaagatg  
agcactgggttaggagcactggctgctctccagaggacctatgcttgacactcagcaccctgatggaagtggaaacgctctgtaact  
ccagttccagaggatctgatgtcctttctgacctccaagggcaccagacattcaggtggtacagagacaaacacgcaggcaaaac  
actcatccacatcaataaacataaataagcttttaaaaggaattggaggcatgtatccaacccaagttaaagggtacaggca  
atcccagatcgctgatagatgtgacttagtaccgcaagcacaggagaggatttggggaaagagagaaggcagcaatgaggaga  
aggaggaagaggaggaggtcatgaaagtgaatggaatttgggtgaaatcacattgggttctttagaagtattataaaaaggagca  
cagaagggtagatagggcagtagaggggagagatggctgggaccacactcaatcctgggcaaggtcatcttggcttaagaaaat  
gtcaggggtgaggatgtggctcagcagtagagggctccaagcatgctcatgacctaagcgtgatcctcagcaccaggaggca  
aagggtgataagggtatagagtaagccatcagagcatccaacatacagacaacgccaagcaagagttaaagggtactcaa  
cacccatgagcaataatttccatcagtagggacagtttccagagttaggaagacaggagcaaatctgaggataggaatggcacgt  
gtgggagaagggtggggtaaagggcagctgacctaaaggaacctgctaattggacccaggtgctgtccaagctctgttctcca  
ccacctctctccagccccatcaacaagcgcactttctcagtccttgagtggaactcgtgtctgagcctggggagggtatcttgagg  
cgagggagggccagatttcttggctgccacctgaacagtttgggctgtgagaagaagagaagccacagggctgcaggggaggtg  
ccagcaagagaggcagacatgccagaaagacacccacgggtgagaggagcaggtggcccaggggtgagtttcttacctcacca  
ggtttctcttggggccaagaggattcatgtgcctaggccaagggcccttggggctctgagctgccttatcgggcctgggc  
tctgaaaagccaggaacaacaagctacaaagccaaggacttggctggcagacaggaggcccagtcctcaccctgtcctctctg  
tctctgatgatataataagacactggtcacaccagaGAGATGAggagaggagagagagagagaacaccttagaattcATGG  
CTCCTAAGAAGAAGAGGAAGGTGATGAGCCAGTTCGACATCCTGTGCAAGACCCCCCAAGGTG  
CTGGTGCGGCAGTTCGTGGAGAGATTTCGAGAGGCCAGCGCGGAGAAGATCGCCAGCTGTGCCG  
CGAGCTGACCTACCTGTGCTGGATGATCACCCACAACGGCACCGCCATCAAGAGGGCCACCTTCA  
TGAGCTACAACACCATCATCAGCAACAGCCTGAGCTTCGACATCGTGAACAAGAGCCTGCAGTTC  
AAGTACAAGACCCAGAAGGCCACCATCCTGGAGGCCAGCCTGAAGAAGCTGATCCCCGCTGGGA  
GTTACCATCATCCCTTACAACGGCCAGAAGCACAGAGCGACATCACCGACATCGTGTCCAGCC  
TGCAGCTGCAGTTCGAGAGCAGCGAGGAGGCCGACAAGGGCAACAGCCACAGCAAGAAGATGCT  
GAAGGCCCTGCTGTCCGAGGGCGAGAGCATCTGGGAGATCACCGAGAAGATCCTGAACAGCTTCG  
AGTACACCAGCAGGTTACCAAGACCAAGACCCTGTACCAGTTCCTGTTCCCTGGCCACATTCATC  
AACTGCGGCAGGTTACGCGACATCAAGAACGTGGACCCCAAGAGCTTCAAGCTGGTGCAGAACAA  
GTACCTGGGCGTGATCATTCAGTGCCTGGTGACCGAGACCAAGACAAGCGTGTCCAGGCACATCT  
ACTTTTTTCAGCGCCAGAGGCAGGATCGACCCCCTGGTGTACCTGGACGAGTTCCTGAGGAACAGC  
GAGCCCGTGCTGAAGAGAGTGAACAGGACCGGCAACAGCAGCAGCAACAAGCAGGAGTACCAGC  
TGCTGAAGGACAACCTGGTGCAGCTACAACAAGGCCCTGAAGAAGAAGCCCCCTACCCCATC  
TTCGCTATCAAGAACGGCCCTAAGAGCCACATCGGCAGGCACCTGATGACCAGCTTCTGAGCAT  
GAAGGGCCTGACCGAGCTGACAAACGTGGTGGGCAACTGGAGCGACAAGAGGGCCTCCGCCGTGG  
CCAGGACCACCTACACCCACCAGATCACCGCCATCCCCGACCACTACTTCGCCCTGGTGTCCAGGT  
ACTACGCCTACGACCCCATCAGCAAGGAGATGATCGCCCTGAAGGACGAGACCAACCCCATCGAG  
GAGTGGCAGCACATCGAGCAGCTGAAGGGCAGCGCCGAGGGCAGCATCAGATACCCCGCCTGGAA  
CGGCATCATCAGCCAGGAGGTGCTGGACTACCTGAGCAGCTACATCAACAGGCGGATCTGAttaAT  
CGAATTCCTGCAGCCCGGGGATCCACTAGTTCCTAGAGCGGCCGCCACCGCGGGGAGATCCAGAC  
ATGATAAGATAATTGATGAGTTTGGACAAACCACAAGTGAATGCAGTGAATAAATAAGTTAA  
TTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAA  
CAACAACAATTGCATTCATTTTATGTTTCAGGTTACGGGGAGGTGTGGGAGGTTTTTTAAAGC  
AAGTAAAACCTCTACAAATGTGGTATGGCTGATTATGATCCGGCTGCCTCGCGCGTTTTCGGTGAT  
GACGGTGAAAACCTCTGACACATGCAGCTCCCGGAGACGGTCACAGCTTGTCTGTAAGCGGATGC  
CGGGAGCAGACAAGCCCGTCAGGGCGCGTCAGCGGGTGTGGCGGGTGTGGGGCGCAGCCATGA

GGTCGACTCTAGTCCCCGCGGTGGCAGATCTGGAAGGTGCTGAGGTACGATGAGACCCGCACCAG  
GTGCAGACCCTGCGAGTGTGGCGGTA AACATATTAGGAACCAGCCTGTGATGCTGGATGTGACCG  
AGGAGCTGAGGCCGATCACTTGGTGTGGCCTGCACCCGCGCTGAGTTTGGCTCTAGCGATGAA  
GATACAGATTGAGGTA CTGAAATGTGTGGGCGTGGCTTAAGGGTGGGAAAGAATATATAAGGTG  
GGGGTCTTATGTAGTTTTGTATCTGTTTTGCAGCAGCCGCCGCCATGAGCACCAACTCGTTT  
GATGGAAGCATTGTGAGCTCATATTTGACAACGCGCATGCCCCATGGGCCGGGGT GCGTCAGAA  
TGTGATGGGCTCCAGCATTGATGGTCGCCCCGTCTGCCCGCAA ACTCTACTACCTTGACCTACG  
AGACCGTGTCTGGAACGCCGTTGGAGACTGCAGCCTCCGCCGCCGCTTCAGCCGCTGCAGCCACCG  
CCCGCGGGATTGTGACTGACTTTGCTTTCCTGAGCCCGCTTGCAAGCAGTGCAGCTTCCCGTTCA  
TCCGCCCGCGATGACAAGTTGACGGCTCTTTTGGCACAATTGGATTCTTTGACCCGGGAACTTAA  
TGTCGTTTCTCAGCAGCTGTTGGATCTGCGCCAGCAGGTTTCTGCCCTGAAGGCTTCCCTCCCTCC  
CAATGCGGTTTAAAACATAAATAAAAAACCAGACTCTGTTTGGATTGGATCAAGCAAGTGTCT  
TGCTGTCTTTATTTAGGGGTTTTGCGCGCGCGGTAGGCCCGGGACCAGCGGTCTCGGTGCTTGAG  
GGTCTGTGTATTTTTTCCAGGACGTGGTAAAGGTGACTCTGGATGTT CAGATACATGGGCATA  
AGCCCGTCTCTGGGGTGGAGGTAGCACCCTGCAGAGCTTCATGCTGCGGGGTGGTGTGTAGAT  
GATCCAGTCGTAGCAGGAGCGCTGGGCGTGGTGCCTAAAAATGTCTTTCAGTAGCAAGCTGATTG  
CCAGGGGCAGGCCCTTGGTGTAAAGTGTTTACAAAGCGGTTAAGCTGGGATGGGTGCATACGTGG  
GGATATGAGATGCATCTTGGACTGTATTTTTAGGTTGGCTATGTTCCAGCCATATCCCTCCGGG  
GATTCATGTTGTGCAGAACCACCAGCACAGTGTATCCGGTGC ACTTGGGAAATTTGTCATGTAGC  
TTAGAAGGAAATGCGTGGAAGAACTTGGAGACGCCCTTGTGACCTCCAAGATTTTCCATGCATTC  
GTCCATAATGATGGCAATGGGCCACGGGCGGGCGGCTGGGCGAAGATATTTCTGGGATCACTAA  
CGTCATAGTTGTGTTCCAGGATGAGATCGTCATAGGCCATTTTTACAAAGCGCGGGCGGAGGGTG  
CCAGACTGCGGTATAATGGTTCCATCCGGCCCAGGGGCGTAGTTACCCTCACAGATTTGCATTTCC  
CCACGCTTTGAGTTCAGATGGGGGGATCATGTCTACCTGCGGGGCGATGAAGAAAACGGTTTCCG  
GGGTAGGGGAGATCAGCTGGGAAGAAAGCAGGTTCCCTGAGCAGCTGCGACTTACCCGAGCCGGT  
GGGCCCGTAAATCACACCTATTACCGGCTGCAACTGGTAGTTAAGAGAGCTGCAGCTGCCGTCAT  
CCCTGAGCAGGGGGGCCACTTCGTTAAGCATGTCCCTGACTCGCATGTTTTCCCTGACCAAATCC  
GCCAGAAGGCGCTCGCCGCCAGCGATAGCAGTCTTGTCAAGGAAGCAAAGTTTTTCAACGGTTT  
GAGACCGTCCGCCGTAGGCATGCTTTTGAGCGTTTGACCAAGCAGTTCAGGCGGTCCCACAGCT  
CGGTACCTGCTCTACGGCATCTCGATCCAGCATATCTCCTCGTTTTCGCGGGTTGGGGCGGCTTTC  
GCTGTACGGCAGTAGTCGGTGCTCGTCCAGACGGGCCAGGGTCATGTCTTCCACGGGCGCAGGG  
TCCTCGTCAGCGTAGTCTGGGTCACGGTGAAGGGGTGCGCTCCGGGCTGCGCGCTGGCCAGGGTG  
CGCTTGAGGCTGGTCTGCTGGTGTGAAGCGCTGCCGGTCTTCGCCCTGCGCGCTCGGCCAGGTA  
GCATTTGACCATGGTGT CATAGTCCAGCCCCCTCCGCGCGGTGGCCCTTGGCGCGCAGCTTGGCCCT  
GGAGGAGGCGCCGCACGAGGGGCAGTGCAGACTTTT GAGGGCGTAGAGCTTGGGCGCGAGAAAT  
ACCGATTCGGGGAGTAGGCATCCGCGCCGCAGGCCCGCAGACGGTCTCGCATTCCACGAGCCA  
GGTGAGCTCTGGCCGTTCGGGGTCAAAAACCAGGTTTCCCCATGCTTTTTGATGCGTTTTCTTAC  
CTCTGGTTTCCATGAGCCGGTGTCCACGCTCGGTGACGAAAAGGCTGTCCGTGTCCCGTATACA  
GACTTGAGAGGCCTGTCTCGACCGATGCCCTTGAGAGCCTTCAACCCAGTCAGCTCCTTCCGGT  
GGGCGCGGGGCATGACTATCGTCGCCGCACTTATGACTGTCTTCTTTATCATGCAACTCGTAGGA  
CAGGTGCCGGCAGCGCTCTGGGTCA TTTTCGGCGAGGACCGCTTTCGCTGGAGCGCGACGATGAT  
CGGCCTGTCGCTTGCGGTATTCCGAATCTTGCACGCCCTCGCTCAAGCCTTCGTCACTGGTCCCGC  
CACCAAACGTTTTCGGCGAGAAGCAGGCCATTATCGCCGGCATGGCGGCCGACGCGCTGGGCTACG  
TCTTGCTGGCGTTTCGCGACGCGAGGCTGGATGGCCTTCCCATTATGATTTCTCTCGCTTCCGGC  
GGCATCGGGATGCCCGCGTTGCAGGCCATGCTGTCCAGGCAGGTAGATGACGACCATCAGGGACA  
GCTTCAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGC

TCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGA  
CTATAAGATAACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGGCGTCTCCTGTTCCGACCCTGCCG  
CTTACCGGATACCTGTCCGCCTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCACGCTGT  
AGGTATCTCAGTTCGGTGTAGGTCGTTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTCA  
GCCCCACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTAT  
CGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGA  
GTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGC  
TGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAACCACCGCTGGT  
AGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGATC  
CTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAACTCACGTTAAGGGATTTTGGTC  
ATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTA AAAATGAAGTTTTAAATCAA  
TCTAAAGTATATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTAT  
CTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGA  
TACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACCGGCT  
CCAGATTTATCAGCAATAAACAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCTGCAACTTT  
ATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATA  
GTTTGCGCAACGTTGTTGCCATTGCTGCAGGCATCGTGGTGTACGCTCGTCGTTTGGTATGGCT  
TCATTCAGCTCCGGTTCCCAACGATCAAGGCGAGTTACATGATCCCCATGTTGTGCAAAAAGC  
GGTTAGCTCCTTCGGTCTCCGATCGTTGTCAGAAGTAAGTTGGCCGCAGTGTTATCACTCATGG  
TTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAAGATGCTTTTCTGTGACTGGT  
GAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTC  
AACACGGGATAAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTT  
CGGGGCGAAAACCTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCA  
CCCAACTGATCTTCAGCATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCA  
AAATGCCGCAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCTTTTT  
CAATATTATTGAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTT  
AGAAAAATAAACAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAGA  
AACCATTATTATCATGACATTAACCTATAAAAATAGGCGTATCACGAGGCCCTTTCGTCTTC

## Vector Bio-safety Information

At the University of Iowa, all varieties of viral vectors produced at the Viral Vector Core are required to be handled at Biosafety Level 2 (BSL2). In animal studies, adenoviral vectors require ABL2 containment. Please check with your institution's Biosafety Officer to confirm local requirements

## Adenovirus Background:

Adenoviruses are very important tool in basic research. They are used to identify proteins role in different biological processes both *in vivo* and *in vitro*. Virus construction is performed using the RapAd™ System developed by the University of Iowa GTVC (For description, refer to the article "[A simple method for the rapid generation of recombinant adenovirus vectors](#)" published in [Gene Therapy 7:1034-1038, 2000](#)).

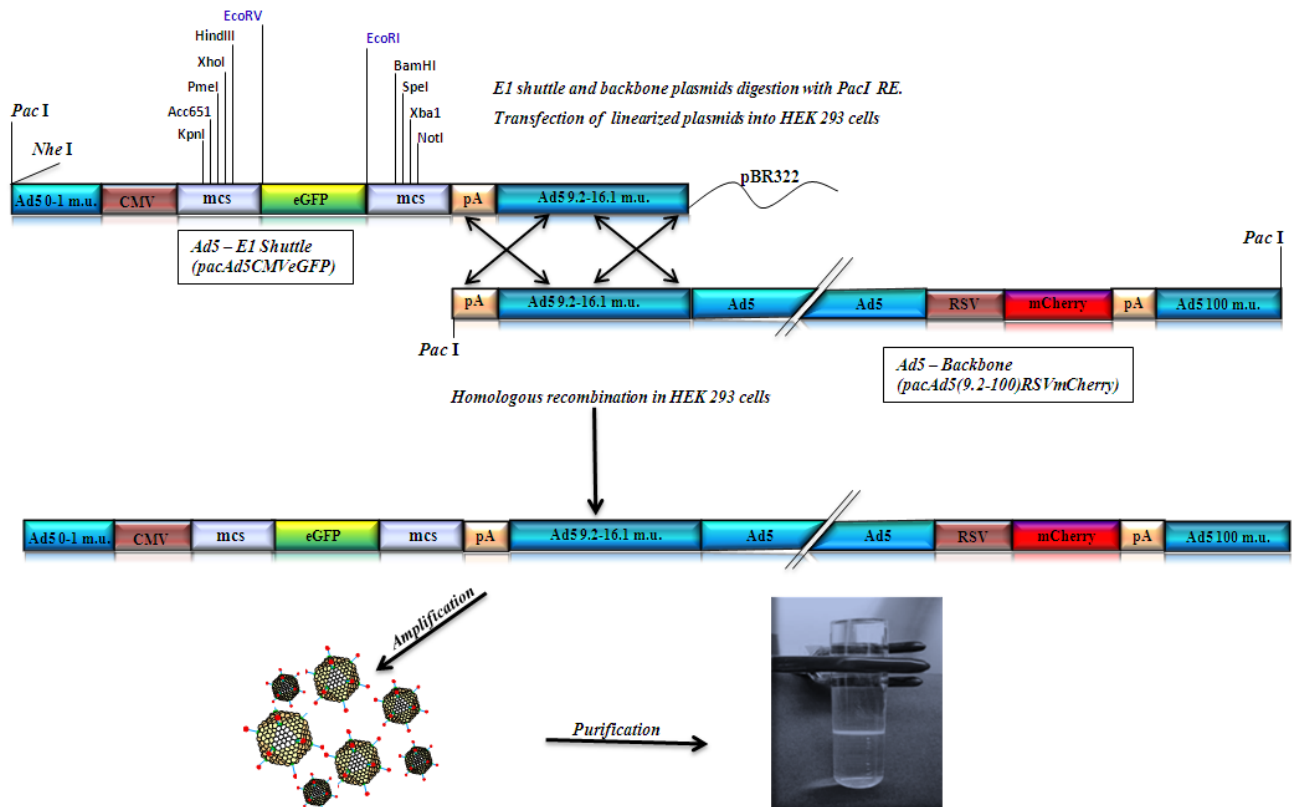
Adenovirus vectors prepared in the core are E1 and E3 deleted. They have a total E1a deletion (\*m.u. 1.4 to 4.5) plus a partial E1b deletion (\*m.u. 4.7 to 9.2). These deletions are what make the vector replication deficient. They also have a partial E3 deletion, 720bp for the sub360 backbone, a 1.6Kb deletion for the dl309 backbone and a 3.1Kb deletion for the total E3 deleted backbone.

\*m.u = Map units (1 m.u = 360bp)

## Characteristics:

- Episomal gene expression.
- Infects dividing and non-dividing cells.
- Transient high-level protein expression.
- Accommodates inserts of up to 7.5kb. Larger inserts can be added, provided that an equivalent part of the viral genome has been properly deleted.
- High viral titer can be produced, 1E+10 to 5E+10pfu/ml (1E+12pt/ml) to 8E+10 to 1E+11/ml (1E+13pt/ml).

## Adenovirus Construction RapAd™ System



**Disadvantages and adverse effects:**

- Elicits host immune response, thus depleting the number of transduced cells *in-vivo*.
- Viral particles can be neutralized by the host immune response.
- Short-term expression of the transgene due to lack of integration into the host genome.

**Recombination:**

The recombinant adenoviruses can revert to wild type during virus production, thus packaging replication competent particles (RCA). For this reason, each new lot produced at the core is tested for the presence of RCA by immuno-staining.

**References:**

- **RapAd™ System:** Anderson RD, Haskell RE, Xia H, Roessler BJ, Davidson BL. *"A simple method for the rapid generation of recombinant adenovirus vectors"*. Gene Ther. 2000 Jun;7(12):1034-8
- **A195 Buffer:** [Evans RK](#), [Nawrocki DK](#), [Isopi LA](#), [Williams DM](#), [Casimiro DR](#), [Chin S](#), [Chen M](#), [Zhu DM](#), [Shiver JW](#), [Volkin DB](#). *Development of stable liquid formulations for adenovirus-based vaccines*. [J Pharm Sci](#). 2004 Oct;93(10):2458-7

**Contact Information:****Viral Vector Core**

University of Iowa  
500 Newton Road  
221 Eckstein Medical Research Building  
Iowa City, IA 52242  
Tel: (319) 335-6726  
vectors@uiowa.edu

**Background on Virus production**

The virus was made with our pacAd5(9.2-100)sub360 viral backbone. This backbone has a fully deleted E1a protein, a partially deleted E1b protein, and a partially deleted E3 protein to make the virus replication deficient. All of our Ad5mSPCFLPO vector preparations infected in HEK293 cells, purified by double CsCl protocol, and dialyzed and stored in our A-195 buffer. All preparations are titered on HEK 293 cells using the Clonetech Adeno-X titer kits and also tested for replication competent particles (RCA).

**Bacterial Backbone:**

The bacterial backbone is derived from pBR322 plasmid.

**Antibiotic Resistance:**

The adenovirus plasmids are ampicillin resistant. We recommend using an ampicillin concentration of 100ug/ml of media.

**E. coli Competent Cell Recommendations:**

We recommend using DH5a cells to grow the adenovirus plasmids.

1/9/19 SJS