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Supplemental Information

In Vivo Selection of a Computationally Designed

SCHEMA AAV Library Yields a Novel Variant for

Infection of Adult Neural Stem Cells in the SVZ

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SUPPLEMENTARY INFORMATION

Figure S1. Inversion of *cap* in recombinase deficient Sure2 *E. coli* was detectable by PCR but not restriction digest. Lox66 and lox71 sites flanking stuffer sequences of 83, 95, 110, or 125 base pairs were cloned between the *XhoI* and *KpnI* sites of pSub2RepKO. Constructs were transformed into competent *E. coli* expressing Cre recombinase (StrataClone) or recombinase-deficient Sure2 (Agilent), plasmid DNA was purified, and PCR was performed to amplify inverted genomes. Inverted amplicons were observed for both bacterial strains, indicating low levels of recombination that could lead to false positives during selections. Recombination was not detected by restriction digest.



Lane	1	2	3	4	5	6	7	8	9	10	11
Sample	50 bp	83 bp	95 bp	110 bp	125 bp		83 bp stuffer,	95 bp stuffer,	110 bp	125 bp	50 bp
	DNA	stuffer,	stuffer,	stuffer,	stuffer,		recombinase	recombinase	stuffer,	stuffer,	DNA
	Ladder	Cre +	Cre +	Cre +	Cre +		deficient	deficient	recombinase	recombinase	Ladder
	(NEB						Sure2	Sure2	deficient	deficient	(NEB
1	N3236L)								Sure2	Sure2	N3236L)

Figure S2. SCH9 and SCH2 *cap* amino acid sequences.

<u>SCH9:</u>

MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGL DKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEFQERLQEDTSFGGNLGRAV FQAKKRVLEPLGLVEEAAKTAPGKKRPVEQSPQEPDSSAGIGKSGAQPAKKRLNFGQTGDT ESVPDPQPIGEPPAAPSGVGSLTMASGGGAPVADNNEGADGVGSSSGNWHCDSQWLGDRVI TTSTRTWALPTYNNHLYKQISNSTSGGSSNDNAYFGYSTPWGYFDFNRFHCHFSPRDWQRLI NNNWGFRPKRLSFKLFNIQVKEVTQNEGTKTIANNLTSTIQVFTDSDYQLPYVLGSAHEGCL PPFPADVFMIPQYGYLTLNDGSQAVGRSSFYCLEYFPSQMLRTGNNFQFSYEFENVPFHSSY AHSQSLDRLMNPLIDQYLYYLSKTINGSGQNQQTLKFSVAGPSNMAVQGRNWLPGPCYRQ QRVSKTSADNNSEYSWTGATKYHLNGRDSLVNPGPAMASHKDDEEKFFPQSGVLIFGKQ GSEKTNVDIEKVMITDEEEIRTTNPVATEQYGSVSTNLQRGNRQAATADVNTQGVLPGMVW QDRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGMKHPPPQILIKNTPVPADPPTAFNKDKLNS FITQYSTGQVSVEIEWELQKENSKRWNPEIQYTSNYYKSNNVEFAVNTEGVYSEPRPIGTRY LTRNL

SCH2:

MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGL DKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEFQERLQEDTSFGGNLGRAV FQAKKRVLEPLGLVEEAAKTAPGKKRPVEQSPQEPDSSAGIGKSGAQPAKKRLNFGQTGDT ESVPDPQPIGEPPAAPSGVGSLTMASGGGAPVADNNEGADGVGSSSGNWHCDSQWLGDRVI TTSTRTWALPTYNNHLYKQISNSTSGGSSNDNAYFGYSTPWGYFDFNRFHCHFSPRDWQRLI NNNWGFRPKRLSFKLFNIQVKEVTQNEGTKTIANNLTSTIQVFTDSDYQLPYVLGSAHEGCL PPFPADVFMIPQYGYLTLNDGSQAVGRSSFYCLEYFPSQMLRTGNNFQFSYTFEDVPFHSSY AHSQSLDRLMNPLIDQYLYYLSRTNTPSGTTTQSRLQFSQAGASDIRDQSRNWLPGPCYRQQ RVSKTSADNNSEYSWTGATKYHLNGRDSLVNPGPAMASHKDDEEKFFPQSGVLIFGKQGS EKTNVDIEKVMITDEEEIRTTNPVATEQYGSVSTNLQRGNRQAATADVNTQGVLPGMVWQ DRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGMKHPPPQILIKNTPVPADPPTAFNKDKLNSFI TQYSTGQVSVEIEWELQKENSKRWNPEIQYTSNYYKSNNVEFAVNTEGVYSEPRPIGTRYLT RNL **Figure S3.** Alignment of the SCH9 and SCH2 AAV *cap* amino acid sequences with the parent AAV serotypes. Capsid sequences were aligned using the Geneious program (Biomatters). Colored amino acids represent differences relative to the reference SCH9 *cap* sequence. Amino acids involved in heparin or galactose binding are annotated in green and blue, respectively, above the SCH9 sequence.

	1 10	2,0	3,0	40	50	60	7,0	80	9,0
SCH9	MAADGYLPDWLE AAV6 Block 1	DNLSEGIREW	NDLK PGAPK PKAN	QQKQDDGRGI	MLPGYKYLGPI	FNGLDKGEP <mark>V</mark> I	NAADAAALEHI	OKAYDQQ D KAG	DNPYLRYNHADA
SCH2	MAADGYLPDWLE AAV6 Block 1	CDNLSEGIREW	NDLKPGAPKPKAN	NOOKODDGRGI	VLPGYKYLGP	FNGLDKGEPVI	NAADAAALEHI	DKAYDQQLKAG	DNPYLRYNHADA
AAV2 AAV6 AAV8 AAV9	MAADGYLPDWLE MAADGYLPDWLE MAADGYLPDWLE MAADGYLPDWLE 100 11	CONLSEGIROW CONLSEGIREW CONLSEGIREW CONLSEGIREW 0 120	NKLKPGPPPKPK NDLKPGAPKPKAN NALKPGAPKPKAN NALKPGAPQPKAN 130	NORKODDSRGI NORKODDGRGI NORKODDGRGI NORKODNARGI 140	JVLPGYKYLGP JVLPGYKYLGP JVLPGYKYLGP JVLPGYKYLGP 150	FNGLDKGEPVI FNGLDKGEPVI SNGLDKGEPVI NGLDKGEPVI	NDADAALEHI NAADAAALEHI NAADAAALEHI NAADAAALEHI 170	DKAYDROLDSG DKAYDOOLKAG DKAYDOOLQAG DKAYDOOLKAG 180	DNPYLKYNHADA DNPYLRYNHADA DNPYLRYNHADA DNPYLKYNHADA 190
SCH9	EFOERLOEDTSF AAV6 Block 1	GGNLGRAMFQ7	AKKR VLE PLGLVE AAV9 Bloc	EAAKTAPGKK k 2	(RPMEQSPQ-E	PDSSAGIGKS	JAQPAKKRLNI	FGQTGDTESMP	DPOPIGEPPAAP
SCH2	EFOERLOEDTSE AAV6 Block 1	GGNLGRAVFQ	AKKRVLEPLGLVE AAV9 Bloc	EEAAKTAPGKK <mark>k 2</mark>	(RPVEQSPQ-E)	PDSSAGIGKS	GAOPAKKRLN	FGOTGDTESVP	DPOPIGEPPAAP
AAV2 AAV6 AAV8 AAV9	EFQERLKEDTSE EFQERLQEDTSE EFQERLQEDTSE EFQERLKEDTSE 200	FGGNLGRAVFQA FGGNLGRAVFQA FGGNLGRAVFQA FGGNLGRAVFQA 210	AKKRVLE PLGLVE AKKRVLE P F GLVE AKKRVLE PLGLVE AKKR D LE PLGLVE 220 230	EE <mark>PM</mark> KTAPGKK EECAKTAPGKK EECAKTAPGKK EEAAKTAPGKK 240	(R PVE SPV - E) (R PVEQSPQ - E) (R PVE PSPQR S) (R PVEQSPQ - E) 250	PDSS <mark>S</mark> GTGKA(PDSS <mark>S</mark> GIGKT) PDSSTGIGKK(PDSSAGIGKS(260	GQQPARKRLNI GQQPAKKRLNI GQQPARKRLNI GAQPAKKRLNI 270	FGQTGD AD SVP FGQTGD S ESVP FGQTGD S ESVP FGQTGDTESVP 280	DPOPLGOPPAAP DPOPLGEPPATP DPOPLGEPPAAP DPOPLGEPPAAP 290
SCH9	SGVGSLTMASGO AAV9 Block 2	GAP V ADNNEGA	ADGVGSSSGNWHC		TTSTRTWALP	TYNNHLYKQII:	SNSTSGGSSN	NAYFGYSTPW	GYFDFNRFHCHF AAV8 Block 3
SCH2	SGVGSLTMASGO	GAPVADNNEGA	ADGVGSSSGNWHC	CDSQWLGDRV1	TTSTRTWALP	TYNNHLYKQI:	SNSTSGGSSNI	DNAYFGYSTPW	GYFDFNRFHCHF AAV8 Block 3
AAV2 AAV6 AAV8 AAV9	SGLGTNTMATGS AAVGPTTMASGG SGVGPNTMAAGG SGVGSLTMASGG 300	GAPMADNNEG# GAPMADNNEG# GAPMADNNEG# GAPVADNNEG# 310	A D G V G N S S G N W H C A D G V G N A S G N W H C A D G V G S S S G N W H C A D G V G S S S G N W H C 320	CDS TWM GDRV] CDS T WLGDRV] CDS T WLGDRV] CDSQWLGDRV] 330	TTSTRTWALP TTSTRTWALP TTSTRTWALP TTSTRTWALP 340 3	FYNNHLYKOI FYNNHLYKOI FYNNHLYKOI FYNNHLYKOI 50 3	5 S – – O S G A S N I 5 S A – S T G A S N I 5 N G T S G G A T N I 5 N S T S G G S S N I 50 3	DNHYFGYSTPW DNHYFGYSTPW DNTYFGYSTPW DNAYFGYSTPW 70 38	GYFDFNRFHCHF GYFDFNRFHCHF GYFDFNRFHCHF GYFDFNRFHCHF 0 390
SCH9	SPRDWORDINNN AAV8 Block 3	WGFRPKRUSF	KEFNIQVKEVTQN	EGTKTIANNI	TSTIQVFTDS AAV9	DYQLPYNLGS Block 4	AHEGCEPPFP	ADV FMI PQYGY	LTLNDGSQAVGR
SCH2	SPRDWORLINNN AAV8 Block 3	NWGFR PKRLSFF	KLFNIQVKEVTQN	NEGTKTIANNI	TSTIQVFTDS	DYQLPYVLGS Block 4	AHEGCL PPFP2	ADVFMIPQYGY	LTLNDGSQAVGR
AAV2 AAV6 AAV8 AAV9	SPRDWQRLINNN SPRDWQRLINNN SPRDWQRLINNN SPRDWQRLINNN 400	JWGFRPKRLNFF JWGFRPKRLNFF JWGFRPKRLSFF JWGFRPKRLNFF 410	KLFNIOVKEVTON KLFNIOVKEVTT KLFNIOVKEVTON KLFNIOVKEVTON KLFNIOVKEVTD	VDGTTTIANNI VDGVTTIANNI VEGTKTIANNI VNGVKTIANNI 430	JTSTVQVFTDS JTSTVQVF5DS JTSTIQVFTDS JTSTVQVFTDS 440	YQL PYVLGS YQL PYVLGS YQL PYVLGS DYQL PYVLGS 450	AHOGCL PPFP AHOGCL PPFP AHOGCL PPFP AHOGCL PPFP AHEGCL PPFP 460	ADV FMM PQYGY Adv Fmi Pqygy Adv Fmi Pqygy Adv Fmi Pqygy 470	LTLNNGSQAVGR LTLNNGSQAVGR LTLNNGSQAVGR LTLNDGSQAVGR 480 490
SCH9	SSFYCLEYFPSC AAV9 Block 4	MURTGNNFOFS	SYEFENVPFHSS AAV9 Block 5	AHSOSLDRLN	INPLIDOYLYY	SKTINGSGO	NOQT-LKFSV)	AGPSNMAMOGR	
SCH2	SSFYCLEYFPSC AAV9 Block 4	MLRTGNNFQFS	AAV2 Block 5	AHSOSLDRLN	MN PL I DQYLYYI	LSRTNTPSGT	TTOSRLOFSO	AGAS DIRDOS R	NWL PGPCYROOR
AAV2 AAV6 AAV8 AAV9	SSFYCLEYFPS SSFYCLEYFPS SSFYCLEYFPS SSFYCLEYFPS 500	2MLRTGNNF T FS 2MLRTGNNF T FS 2MLRTGNNFQF5 2MLRTGNNFQFS 510	SYTFEDVPFHSSY SYTFEDVPFHSSY SYEFEDVPFHSSY SYEFENVPFHSSY 520	(AHSQSLDRLN (AHSQSLDRLN (AHSQSLDRLN (AHSQSLDRLN 530	1N PL I DQYL YYI 1N PL I DQYL YYI 1N PL I DQYL YYI 1N PL I DQYL YYI 540	LSRTNTPSGT LNRTQNQSGS LSRTQTTCGT LSRTQTTCGT LSKTINGSGQ 550	TOSRLOFS0 AONKDLLFSR ANTOTLGFS0 ANTOTLGFS0 AQT-LKFSV 560	A G A S D T R D O S R S P A G M S V O P K S G P N T M A N O A K A G P S N M A V O G R 570	NWL PGPCYROOR NWL PGPCYROOR NWL PGPCYROOR N <mark>Y I</mark> PGPSYROOR 580
SCH9	SKTSADNNNSE AAV2 Block 6	YSWTGATKYHI	NGR DSLVN PGPA	MASHKDDEEK	FFPQSGVLIF	SKQGSEKT <mark>NV</mark> I	DIEKVMITDE	EIRTTNPMAT	EQYGSMSTNEOR
SCH2	VSKTSADNNNSE AAV2 Block 6	<u>EYSWTGATKYHI</u>	LNGR DSLVNPGPA	MASHKDDEEK	(FFPQSGVLIF	GKQGSEKTNVI	DIEKVMITDE	CEIRTTNPVAT	EQYGSVSTNLOR
AAV2 AAV6 AAV8 AAV9	VSKTSADNNNSE VSKTKTDNNNSN VSTTTGONNNSN VSTTTTONNNSE 590 60	YSWTGATKYHI FTWTGASKYNI FAWTAGTKYHI FAWPGASSWAI 00 610	LNGRDSLVNPGP LNGRDSIINPGT LNGRNSLANPGIA LNGRNSLMNPGPA 620	AMASHKDDEEK AMASHKDDKDK AMATHKDDEE AMASHK BGEDF 630	KFFPOSGVLIF KFFPMSGVMIF FFPSNGLLIF KFFPLSGSLIF 640	SK OG SEK TNV I SK D SAGAS N T A GK O NAAR D NA GK OG TGR D NV I 650	DIEKVMITDEI ALDNVMITDEI DYSDVMLTSEI DADKVMITNEI 660	EEIRTTNPVAT EEI KA TNPVAT EEI K TTNPVAT EEI K TTNPVAT 670	EQYGSVSTNLQR ERFGTVAVNLQS EPYGIVADNLQQ ESYGQVATNHQS 680
SCH9		OGVEPGMVWOI		TPHTDGNFH	SPLMGGFGMK	PPPQILIKN'	PNPADPPTAI		
SCH2	GNROAATADVNI AAV2 Block 6	<u>OGVLPGMVWQ</u> I	OR DVYLOGPIWAK SAAV9 Block 7	(IPHTDGNFH)	PSPLMGGFGMKI	HPPPQILIKN'	[PVPADPPTA]	FNKDKLNSFIT	QYSTGOVSVEIE V9 Block 8
AAV2 AAV6 AAV8 AAV9	GNRQAATADVNT SSTDPATGDVHV ONTAPOLGTVNS AQAQAQTGWVON 690	QGVL PGMVWQI MGAL PGMVWQI QGAL PGMVWQI QGTL PGMVWQI 700	DR DV YL QG PIWAK DR DV YL QG PIWAK NR DV YL QG PIWAK DR DV YL QG PIWAK 710 720	(IPHTDG <mark>H</mark> FHE (IPHTDG <mark>H</mark> FHE (IPHTDGNFHE (IPHTDGNFHE 730	PSPLMGGFGLKI SPLMGGFGLKI SPLMGGFGLKI SPLMGGFGMKI 738	HPPPQILIKN HPPPQILIKN HPPPQILIKN	IPVPANPSTT IPVPANPPA IPVPADPPTT IPVPADPPTAI	F <mark>SAAKFA</mark> SFIT F <mark>SATKFA</mark> SFIT FN <mark>QS</mark> KLNSFIT FNKDKLNSFIT	QYSTGQVSVEIE QYSTGQVSVEIE QYSTGQVSVEIE QYSTGQVSVEIE
SCH9	WELQKENSKRWN AAV9 Block 8	PEIQYTSNYYF	KSNNVEFAVNTEC	YSEPRPIG	RYLTRNL				
SCH2	WELOKENSKRWN AAV9 Block 8	IPEIQYTSNYYF	KSNNVEFAVNTEG	GVYSEPRPIGI	TRYLTRNL				
AAV2 AAV6 AAV8 AAV9	WELQKENSKRWN WELQKENSKRWN WELQKENSKRWN WELQKENSKRWN	IPEIQYTSNY <mark>N</mark> F IPE M QYTSNY N F IPEIQYTSNYYF IPEIQYTSNYYF	KSMNVDFTVDTN KSANVDFTVDNN KSTSVDFAVNTEG KSNNVEFAVNTEG	GVYSEPRPIG TYTEPRPIG GVYSEPRPIG GVYSEPRPIG GVYSEPRPIG	TR YL TRNL TR YL TR <mark>P</mark> L TR YL TRNL TR YL TRNL				

Figure S4. Viral genomic yield of recombinant self-complementary AAV vectors. Data are normalized to the cell culture surface area and are presented as mean \pm SD, n=3.



Figure S5. GFP expression in the cerebellum three weeks after unilateral injection of recombinant AAV1 or SCH9 into the deep cerebellar nuclei. Coronal sections were stained for GFP (green) and the Purkinje cell marker calbindin (purple). Scale bars indicate 500 µm.



Figure S6. Confocal analysis of GFP expression in the striatum three weeks after injection of recombinant AAV1 or SCH9. Coronal sections were stained for GFP (green), the astrocyte marker GFAP (), and the neuronal marker NeuN (red). Scale bars indicate 25 μ m. Image analysis was performed by counting colocalized cells in ImageJ (over 225 cells counted per mouse).



Figure S7. SCH2 and SCH9 are unable to infect a HeLa AAVR knockout cell line. The infectivity of SCH2 and SCH9 was compared with AAV2, a control that is known to utilize AAVR. All three variants efficiently transduce wild type HeLa cells, but not the AAVR knockout line. Data are presented as mean \pm SEM, n = 6. *, statistical difference of P < 0.005 by two-tailed Student's t-test.



Table S1. Neutralizing IVIG titers of SCH9 and the parent serotypes from which it is derived. The neutralizing titers represent the first IVIG concentration at which 50% or greater reduction in GFP expression was observed.

Variant	Neutralizing IVIG Concentration	SCH9 Fold Improvement
	(mg/mL)	
SCH9	0.20	N/A
AAV2	0.10	2
AAV6	0.10	2
AAV8	0.10	2
AAV9	0.02	10

Primer name	Primer sequence (5'-3')				
QC_pBluescript_Fwd	GCTGCAATGATACCGCGAAACCCACGCTC				
QC_pBluescript_Rev	GAGCGTGGGTTTCGCGGTATCATTGCAGC				
QC_AAV4_Fwd	GCTCCTGGAAAGAAGAGGCCGTTGATTGAATCCCC				
QC_AAV4_Rev	GGGGATTCAATCAACGGCCTCTTCTTTCCAGGAGC				
QC_AAV5_Fwd	GACCCGGAAACGGACTCGATCGAGGAG				
QC_AAV5_Rev	CTCCTCGATCGAGTCCGTTTCCGGGTC				
QC_AAV6_Fwd	GTTTAGCCGGGGGCTCTCCAGCTGGC				
QC_AAV6_Rev	GCCAGCTGGAGAGCCCCGGCTAAAC				
QC_AAV8_Fwd	CTCCTGGAAAGAAGAGGCCGGTAGAGCCATCAC				
QC_AAV8_Rev	GTGATGGCTCTACCGGCCTCTTCTTTCCAGGAG				
BglIIFwd	CAAGCGGCCGCGTAAGCTTAGATCTCTGACGTCGATGGCTG CG				
BglIIRev	CGCAGCCATCGACGTCAGAGATCTAAGCTTACGCGGCCGCT TG				
Lox66Fwd	GATCTATAACTTCGTATAGCATACATTATACGAACGGTACG				
Lox66Rev	CGTACCGTTCGTATAATGTATGCTATACGAAGTTATTTCGA				
XhoIFwd	CCGCTTGTTAATCAATAAACCGTTTAATTCGTTTCAGTTGAC				
	TCGAGGTCTCTGCGTATTTCTTTCT				
XhoIRev	AGAAAGAAATACGCAGAGACCTCGAGTCAACTGAAACGAA				
	TTAAACGGTTTATTGATTAACAAGCGG				
KpnIFwd	CGTAGATAAGTAGCATGGCGGGGTTAATCAGGTACCACAAG GAACCCCTAG				
KpnIRev	CTAGGGGTTCCTTGTGGTACCTGATTAACCCGCCATGCTACT				
I T	TATCTACG				
SOELox71Fwd	GTCAGCCTCGAGATAACTTCGTATAATGTATGCTATACGAA				
	CGGTACTGTGGTCGTCATTGGCAACTACACCTGTTCG				
SOELox71Rev	CGTCACGGTACCTGTGGAATTGTGAGCGCTCACAATTCCAC				
	AGCTAGCCTATTTACCGATACCACACGAACAGGTGTAGTTG				
	CCAATGACG				
Lox71Fwd	GTCAGCCTCGAGATAACTTCG				
Lox71Rev	CGTCACGGTACCTGTGG				
Cap_ISF	CATGGAAACTAGATAAGAAAGA				
Cap_NSF	GGTACGAAGCTTCGATCAACTACGCAG				
Cap_R	AGCTAGCCTATTTACCGATAC				
Internal_Cap_ISF	AAGTTCAACTGAAACGAATTA				
Internal_Cap_R	CACACGAACAGGTGTAGTT				

Table S2. Primer sequences used in this study to design constructs and amplify the AAV *cap* gene.

Table S3. Primer sequences designed in j5 to amplify each sequence block for combinatorial golden gate assembly of the SCHEMA AAV library.

D-i	D-i
Primer name	
DO_02_(Vector_Backbone)_forward	
DO_03_(vector_Backbone)_reverse	
DO_04_(AAV2_b1)_lorward	
$DO_{05}(AAV2_{01})$ reverse	
$DO_{00}(AAV_2b_2)$ forward	
$DO_07_(AAV2_b2)$ reverse $DO_08_(AAV2_b3)$ forward	
$DO_{00} (AAV_2 b_3)$ reverse	CACACCAGGTCTCAAAAGACCTGAACCGTGCTGG
$DO_{0} = (AAV_2 b_3)$ reverse	CACACCAGGTCTCACAAAGACCTGAACCGTGCTGG
$DO_{10}(AAV_2b4)$ forward	CACACCAGGTCTCACTTACTGACTCGGAGTACCAGC
$DO_{12} (AAV2_b5)$ forward	CACACCAGGTCTCACTACACTTTTGAGGACGTCC
$DO_{12}(AAV_2 b5)$ reverse	CACACCAGGTCTCAAGTTCCTAGACTGGTCCCGAATG
$DO_{14} (AAV_2 b6)$ forward	CACACCAGGTCTCAAACTGGCTTCCTGGACCCTG
$DO_{15} (AAV_{2} b6)$ reverse	CACACCAGGTCTCAGTCTCTGTCCTGCCAGACCATG
DO 16 (AAV2 b7) forward	CACACCAGGTCTCAAGACGTGTACCTTCAGGGGC
DO 17 (AAV2 b7) reverse	CACACCAGGTCTCAATGAAGGAAGCAAACTTTGCCG
DO 18 (AAV2 b8) forward	CACACCAGGTCTCATCATCACAGAGTACTCCACGG
DO 19 (AAV2 b8) reverse	CACACCAGGTCTCAGCAAGCGCGCAATTAACCCTC
DO 20 (AAV4 b1) reverse	CACACCAGGTCTCAGTTCAAGAACCCTCTTTTTGGC
DO 21 (AAV4 b2) forward	CACACCAGGTCTCAGAACCTCTTGGTCTGGTTGAG
DO 22 (AAV4 b2) reverse	CACACCAGGTCTCAACCCCCAGGGGGGGGGGAGAAT
DO 23 (AAV4 b3) forward	CACACCAGGTCTCAGGGTATTTTGACTTCAACCGCTTCC
DO 24 (AAV4 b3) reverse	CACACCAGGTCTCAAAAGATCTGAACCGTGCTGG
DO 25 (AAV4 b4) forward	CACACCAGGTCTCACTTTGCGGACTCGTCGTACG
DO_26_(AAV4_b4)_reverse	CACACCAGGTCTCAGTAGGTAATTTCAAAGTTGTTGCC
DO_27_(AAV4_b5)_forward	CACACCAGGTCTCACTACAGTTTTGAGAAGGTGCCT
DO_28_(AAV4_b5)_reverse	CACACCAGGTCTCAAGTTCTTTTTTAAAGTTGGAAAAGTTGGT
DO_29_(AAV4_b6)_forward	CACACCAGGTCTCAAACTGGCTGCCCGGGCCTTC
DO_30_(AAV4_b6)_reverse	CACACCAGGTCTCAGTCTCTGTTTTGCCAGACCATTC
DO_31_(AAV4_b7)_forward	CACACCAGGTCTCAAGACATTTACTACCAGGGTCCC
DO_32_(AAV4_b7)_reverse	CACACCAGGTCTCAATGAAGGAGTTTACCGGAGTAGAG
DO_33_(AAV4_b8)_forward	CACACCAGGTCTCATCATTACTCAGTACAGCACTGGC
DO_34_(AAV4_b8)_reverse	CACACCAGGTCTCAGCAAGCGCGCAATTAACCCTCACTAAAGG
DO_35_(AAV5_b1)_reverse	CACACCAGGTCTCAGTTCGAGAACCCTTTTCTTGGC
DO_36_(AAV5_b2)_forward	CACACCAGGTCTCAGAACCTTTTGGCCTGGTTGAA
DO_37_(AAV5_b2)_reverse	CACACCAGGTCTCAACCCCCAGGGGGGGGGGTGCTGTAT
DO_38_(AAV5_b3)_forward	CACACCAGGTCTCAGGGTATTTTGACTTTAACCGCTTCC
DO_39_(AAV5_b3)_reverse	CACACCAGGTCTCAAAAGACTTGGACGGTGGAGG
DO_40_(AAV5_b4)_forward	CACACCAGGTCTCACTTTACGGACGACGACTACC
DO_41_(AAV5_b4)_reverse	CACACCAGGICICAGIAGGIAAACICAAAGIIGIIGCC
DO_42_(AAV5_b5)_forward	CACACCAGGICICACIACAACITIGAGGAGGIGCC
DO_43_(AAV5_b5)_reverse	
$DO_{44}(AAV5_{b6})$ forward	
$DO_{45}(AAV5_{00})$ [everse]	
$DO_{47} (AAV5 b7)$ reverse	
$DO_{48} (AAV5_b8)$ forward	CACACCAGGTCTCATCATCACCCAGTACAGCACC
$DO_{49} (AAV6 b1)$ reverse	CACACCAGGTCTCAGTTCGAGAACCCTCTTCTTCG
$DO_{50} (AAV6_b2)$ forward	CACACCAGGTCTCAGAACCTTTTGGTCTGGTTGAGG
DO_51 (AAV6 b2) reverse	CACACCAGGTCTCAACCCCCAGGGGGGTGCTGTAGC
DO 52 (AAV6 b3) forward	CACACCAGGTCTCAGGGTATTTTGATTTCAACAGATTCCACTGC
DO 53 (AAV6 b3) reverse	CACACCAGGTCTCAAAAGACTTGAACCGTGCTGG
DO 54 (AAV6 b4) forward	CACACCAGGTCTCACTTTTCGGACTCGGAGTACC
DO 55 (AAV6 b4) reverse	CACACCAGGTCTCAGTAGCTGAAGGTAAAGTTATTGCC
DO 56 (AAV6 b5) forward	CACACCAGGTCTCACTACACCTTCGAGGACGTGC
DO 57 (AAV6 b5) reverse	CACACCAGGTCTCAAGTTTTTGGGCTGAACAGACATGC
DO 58 (AAV6 b6) forward	CACACCAGGTCTCAAACTGGCTACCTGGACCCTG
DO 59 (AAV6 b6) reverse	CACACCAGGTCTCAGTCTCTGTCTTGCCACACCATTC
DO_60_(AAV6_b7)_forward	CACACCAGGTCTCAAGACGTATACCTGCAGGGTCC
DO_61_(AAV6_b7)_reverse	CACACCAGGTCTCAATGAATGAAGCAAACTTTGTAGCC
DO_62_(AAV6_b8)_forward	CACACCAGGTCTCATCATCACCCAGTATTCCACAGG
DO_63_(AAV8_b1)_reverse	CACACCAGGTCTCAGTTCGAGAACCCGCTTCTTGG
DO_64_(AAV8_b2)_forward	CACACCAGGTCTCAGAACCTCTCGGTCTGGTTGAG
DO_65_(AAV8_b2)_reverse	CACACCAGGTCTCAACCCCCAGGGGGGGGGGTGCTGTAG
DO_66_(AAV8_b3)_forward	CACACCAGGTCTCAGGGTATTTTGACTTTAACAGATTCCACTGC
DO_67_(AAV8_b3)_reverse	CACACCAGGTCTCAAAAGACCTGGATGGTGCTGG
DO_68_(AAV8_b4)_forward	CACACCAGGTCTCACTTTACGGACTCGGAGTACC
DO_69_(AAV8_b4)_reverse	CACACCAGGTCTCAGTAGGTAAACTGGAAGTTGTTGC
DO_70_(AAV8_b5)_reverse	CACACCAGGTCTCAAGTTCTTTGCCTGATTGGCC
DO_71_(AAV8_b6)_forward	CACACCAGGTCTCAAACTGGCTGCCAGGACCCTG
DO_72_(AAV8_b6)_reverse	CACACCAGGICICAGICICGGITCIGCCAGACCATAC
DO_/3_(AAV8_b/)_forward	CACAGGAGGTCTCAAGACGTGTACCTGCAGGGTCC
DO_74_(AAV8_D/)_reverse	
$DO_{75}(AAV8_{08})$ forward	
$DO_{77} (AAV9 b2)$ forward	
$DO_{78} (AAV9 h3)$ reverse	CACACCAGGTCTCAAAAGACCTCGACCCTCGCTCCTGG
DO 79 (AAV9 hd) forward	CACACCAGGTCTCACTTTACGGACTCAGACTATCAGC
DO 80 (AAV9 hd) reverse	CACACCAGGTCTCAGTAGCTGAACTGGAAGTTGTTACC
DO 81 (AAV9 b5) forward	CACACCAGGTCTCACTACGAGTTTGAGAACGTACC
DO 82 (AAV9 b5) reverse	CACACCAGGTCTCAAGTTTCTTCCCTGGACAGCC
DO 83 (AAV9 b6) forward	CACACCAGGTCTCAAACTACATACCTGGACCCAGC
DO 84 (AAV9 b6) reverse	CACACCAGGTCTCAGTCTCTGTCCTGCCAAACCATACC
DO_85_(AAV9_b7) forward	CACACCAGGTCTCAAGACGTGTACCTGCAAGGAC
DO_86_(AAV9_b7)_reverse	CACACCAGGTCTCAATGAAAGAGTTCAGCTTGTCCTTG
DO_87_(AAV9_b8)_forward	CACACCAGGTCTCATCATCACCCAGTATTCTACTGGC

0 pBlaescript SK+ DO (2) (Vector Backbone) Inverse 243 1 AAV2 DO (4, AAV2, D). Jorward DO (5, (AAV2, D). previse 491 2 AAV2 DO (6, (AAV2, D). Jorward DO (7, (AAV2, D). previse 491 3 AAV2 DO (6, (AAV2, D). Jorward DO (7, (AAV2, D). previse 220 4 AAV2 DO (1, (AAV2, D). Jorward DO (1, (AAV2, D). previse 423 6 AAV2 DO (1, (AAV2, D). Jorward DO (1, (AAV2, D). previse 433 7 AAV2 DO (1, (AAV2, D). Jorward DO (1, (AAV2, D). previse 288 9 AAV4 DO (2, (AAV2, D). Jorward DO (2, (AAV4, D). previse 281 10 AAV4 DO (2, (AAV2, D). previse 477 11 AAV4 DO (2, (AAV4, D). previse 212 11 AAV4 DO (2, (AAV4, D). previse 211 13 14 AAV4 DO (2, (AAV4, D). previse 211 13 AAV4 DO (2, (AAV4, D). previse 205 14 4AV4 DO (3, (AAV4, D). previse 211	Block ID Number	Primary Template	Forward Primer	Reverse Primer	Amplicon length (bp)
1 AAV2 DO. 04 (AAV2 D), forward DO. 05 (AAV2 D), previse 784 3 AAV2 DO. 06 (AAV2 D), forward DO. 09 (AAV2 D), previse 220 4 AAV2 DO. 01 (AAV2 D), forward DO. 01 (AAV2 D), previse 222 5 AAV2 DO. 12 (AAV2 D), forward DO. 13 (AAV2 D), previse 222 6 AAV2 DO. 14 (AAV2 D), forward DO. 15 (AAV2 D), previse 211 8 AAV2 DO. 16 (AAV2 D), forward DO. 17 (AAV2 D), previse 211 8 AAV2 DO. 16 (AAV2 D), forward DO. 22 (AAV4 B), previse 784 10 AAV4 DO. 21 (AAV2 D), forward DO. 24 (AAV4 D), previse 784 11 AAV4 DO. 25 (AAV4 D), forward DO. 26 (AAV4 D), previse 225 13 AAV4 DO. 27 (AAV4 D), forward DO. 28 (AAV4 D), previse 211 14 AAV4 DO. 29 (AAV4 D), forward DO. 35 (AAV4 D), previse 211 16 AAV4 DO. 31 (AAV4 D), forward DO. 37 (AAV3 D), revise 211 16 AAV5 <	0	pBluescript SK +	DO_02_(Vector_Backbone)_forward	DO_03_(Vector_Backbone)_reverse	2843
2 AAV2 D0 06 (AAV2 b) forward D0 07 (AAV2 b) previse 491 3 AAV2 D0 08 (AAV2 b) forward D0 01 (AAV2 b) previse 220 4 AAV2 D0 19 (AAV2 b) forward D0 11 (AAV2 b) previse 222 5 AAV2 D0 12 (AAV2 b) forward D0 15 (AAV2 b) previse 221 6 AAV2 D0 16 (AAV2 b) forward D0 15 (AAV2 b) previse 231 8 AAV2 D0 16 (AAV2 b) forward D0 12 (AAV2 b) previse 211 8 AAV2 D0 18 (AAV2 b) forward D0 22 (AAV4 b) previse 214 10 AAV4 D0 21 (AAV4 b) forward D0 24 (AAV4 b) previse 211 11 AAV4 D0 27 (AAV4 b) forward D0 23 (AAV4 b) previse 211 13 AAV4 D0 27 (AAV4 b) forward D0 23 (AAV4 b) previse 211 14 AAV4 D0 27 (AAV4 b) forward D0 32 (AAV4 b) previse 211 14 AAV4 D0 21 (AAV4 b) forward D0 35 (AAV4 b) previse 228 15 AAV4 D0 31 (AAV4 b) forward D0 3	1	AAV2	DO_04_(AAV2_b1)_forward	DO_05_(AAV2_b1)_reverse	784
3 AAV2 DO. 08 (AAV2 b); forward DO. 09 (AAV2 b); reverse 220 4 AAV2 DO. 12 (AAV2 b); forward DO. 11 (AAV2 b); reverse 242 5 AAV2 DO. 12 (AAV2 b); forward DO. 13 (AAV2 b); reverse 242 6 AAV2 DO. 14 (AAV2 b); forward DO. 17 (AAV2 b); reverse 211 8 AAV2 DO. 16 (AAV2 b); forward DO. 17 (AAV2 b); reverse 281 9 AAV4 DO. 21 (AAV2 b); forward DO. 20 (AAV4 b); reverse 784 10 AAV4 DO. 21 (AAV4 b); forward DO. 24 (AAV4 b); reverse 220 12 AAV4 DO. 25 (AAV4 b); forward DO. 26 (AAV4 b); reverse 221 13 AAV4 DO. 29 (AAV4 b); reverse 225 14 14 AAV4 DO. 29 (AAV4 b); reverse 228 15 16 AAV4 DO. 31 (AAV4 b); reverse 228 11 16 AAV4 DO. 38 (AAV4 b); reverse 228 11 16 AAV4 DO. 38 (AAV4 b); reverse 228 1	2	AAV2	DO_06_(AAV2_b2)_forward	DO_07_(AAV2_b2)_reverse	491
4 AAV2 DO. 10 (AAV2 b) forward DO. 11 (AAV2 b) reverse 242 5 AAV2 DO. 14 (AAV2 b) forward DO. 15 (AAV2 b) reverse 223 6 AAV2 DO. 14 (AAV2 b) forward DO. 15 (AAV2 b) reverse 233 7 AAV2 DO. 16 (AAV2 b) forward DO. 19 (AAV2 b) reverse 231 8 AAV2 DO. 18 (AAV2 b) forward DO. 20 (AAV4 b) reverse 284 9 AAV4 DO. 21 (AAV4 b) reverse 284 10 AAV4 DO. 21 (AAV4 b) reverse 270 11 AAV4 DO. 21 (AAV4 b) reverse 281 12 AAV4 DO. 21 (AAV4 b) reverse 251 13 AAV4 DO. 27 (AAV4 b) reverse 251 14 AAV4 DO. 27 (AAV4 b) reverse 211 16 AAV4 DO. 21 (AAV4 b) reverse 211 17 AAV5 DO. 40 (AAV2 b) forward DO. 32 (AAV4 b) reverse 211 18 AAV5 DO. 30 (AAV4 b) reverse 203 204 (AAV5 b) reverse 220 20	3	AAV2	DO_08_(AAV2_b3)_forward	DO_09_(AAV2_b3)_reverse	220
5 AAV2 DO, 12 (AAV2, 5b) forward DO, 15 (AAV2, 5b) reverse 222 6 AAV2 DO, 14 (AAV2, 5b) forward DO, 15 (AAV2, 5b) reverse 211 7 AAV2 DO, 16 (AAV2, 5b) forward DO, 17 (AAV2, 5b) reverse 211 8 AAV2 DO, 18 (AAV2, 1b) forward DO, 20 (AAV4, 1b) forward DO 20 (AAV4, 1b) forward DO 20 (AAV4, 1b) forward DO 22 (AAV4, 1b) forward DO 26 (AAV4, 1b) reverse 221 12 AAV4 DO 29 (AAV4, 1b) forward DO 28 (AAV4, 1b) reverse 211 14 AAV4 DO 29 (AAV4, 1b) forward DO 32 (AAV4, 1b) reverse 211 16 AAV4 DO 31 (AAV4, 1b) forward DO 32 (AAV4, 1b) reverse 288 17 AAV5 DO 36 (AAV4, 1b) reverse 218 204 203 (AAV4, 1b) reverse 284 18 AAV5 DO 36 (AAV5, 1b) reverse 246 240 240 240 20	4	AAV2	DO 10 (AAV2 b4) forward	DO 11 (AAV2 b4) reverse	242
6 AAV2 DO, 14 (AAV2, b6) forward DO, 15 (AAV2, b7) reverse 433 7 AAV2 DO, 15 (AAV2, b7) forward DO, 17 (AAV2, b7) reverse 211 8 AAV2 DO, 18 (AAV2, b7) forward DO, 17 (AAV2, b7) reverse 284 9 AAV4 DO, 41 (AAV2, b1) forward DO, 22 (AAV4, b3) reverse 287 10 AAV4 DO, 21 (AAV4, b3) forward DO, 24 (AAV4, b3) reverse 220 11 AAV4 DO, 27 (AAV4, b3) forward DO, 26 (AAV4, b3) reverse 221 13 AAV4 DO, 27 (AAV4, b5) forward DO, 26 (AAV4, b5) reverse 225 14 AAV4 DO, 27 (AAV4, b5) forward DO, 31 (AAV4, b5) reverse 211 16 AAV4 DO, 31 (AAV4, b7) forward DO, 35 (AAV4, b5) reverse 216 17 AAV5 DO, 44 (AAV2, b1) reverse 276 204 204 (AAV4, b5) reverse 228 18 AAV5 DO, 26 (AAV5, b1) forward DO, 37 (AAV4, b5) reverse 204 20 AAV5 DO, 26 (AAV5, b1) forward DO, 37 (AAV4, b5) reverse 211	5	AAV2	DO_12_(AAV2_b5) forward	DO_13_(AAV2_b5)_reverse	222
7 AAV2 DO_16 (AAV2, E)7, forward DO_17 (AAV2, E)7, reverse 211 8 AAV4 DO_4 (AAV2, E)7, forward DO_19 (AAV2, E)7, reverse 298 9 AAV4 DO_4 (AAV2, E)7, forward DO_20, (AAV4, E)1, reverse 284 10 AAV4 DO_21, (AAV4, E)7, forward DO_22, (AAV4, E)7, reverse 467 11 AAV4 DO_22, (AAV4, E)7, forward DO_24, (AAV4, E)7, reverse 221 12 AAV4 DO_25, (AAV4, E)7, forward DO_28, (AAV4, E)7, reverse 225 14 AAV4 DO.22, (AAV4, E)7, forward DO_31, (AAV4, E)7, reverse 221 16 AAV4 DO.23, (AAV4, E)7, reverse 298 298 17 AAV5 DO.34, (AAV2, E)7, reverse 298 20 18 AAV5 DO.35, (AAV5, E)7, forward DO_37, (AAV4, E)7, reverse 298 20 AAV5 DO.38, (AAV5, E)7, forward DO_37, (AAV5, E)7, reverse 220 20 AAV5 DO,36, (AAV5, E)7, reverse 204 204 2045 204 2045 2045	6	AAV2	DO_14_(AAV2_b6)_forward	DO_15_(AAV2_b6)_reverse	433
8 AAV2 DO 15 (AAV2 B8) forward DO 19 (AAV2 b8) reverse 298 9 AAV4 DO 02 (AAV2 B) reverse 744 10 AAV4 DO 21 (AAV4 b2) forward DO 22 (AAV4 b3) reverse 747 11 AAV4 DO 21 (AAV4 b3) forward DO 24 (AAV4 b3) reverse 220 12 AAV4 DO 27 (AAV4 b3) forward DO 26 (AAV4 b5) reverse 221 13 AAV4 DO 27 (AAV4 b3) reverse 221 14 AAV4 DO 27 (AAV4 b5) reverse 221 15 AAV4 DO 31 (AAV4 b7) reverse 225 16 AAV4 DO 31 (AAV4 b7) forward DO 32 (AAV4 b7) reverse 211 16 AAV4 DO 31 (AAV4 b7) forward DO 32 (AAV4 b7) reverse 298 17 AAV5 DO 36 (AAV5 b1) forward DO 37 (AAV4 b7) reverse 216 18 AAV5 DO 36 (AAV5 b7) forward DO 37 (AAV4 b7) reverse 220 20 AAV5 DO 42 (AAV5 b7) forward DO 41 (AAV5 b7) reverse 220 21 AAV5 DO 44 (AAV5 b7)	7	AAV2	DO_16_(AAV2_b7)_forward	DO_17_(AAV2_b7)_reverse	211
9AAV4DODODOLorvardDODOZOLAAV4b1reverse78410AAV4DO21(AAV4b3)forwardDO22(AAV4b3)reverse22011AAV4DO23(AAV4b3)forwardDO24(AAV4b3)reverse22112AAV4DO25(AAV4b4)forwardDO26(AAV4b5)reverse22514AAV4DO27(AAV4b5)forwardDO26(AAV4b5)reverse22116AAV4DO31(AAV4b5)forwardDO32(AAV4b5)reverse27116AAV4DO31(AAV4b5)forwardDO32(AAV4b5)reverse27817AAV5DO30(AAV4b5)forwardDO35(AAV5b5)reverse27818AAV5DO36(AAV5b5)forwardDO37(AAV5b5)reverse24820AAV5DO36(AAV5b5)forwardDO37(AAV5b5)reverse24821AAV5DO46(AAV5b5)forwardDO47(AAV5b5)reverse24821AAV5DO46(AAV5b5)forwardDO47(AAV5b5)	8	AAV2	DO 18 (AAV2 b8) forward	DO 19 (AAV2 b8) reverse	298
10 AAV4 Do 21 (AAV4 b2) forward Do 22 (AAV4 b2) reverse 467 11 AAV4 Do 23 (AAV4 b3) forward Do 24 (AAV4 b3) reverse 220 12 AAV4 Do 25 (AAV4 b4) forward Do 26 (AAV4 b5) reverse 221 13 AAV4 Do 27 (AAV4 b5) forward Do 26 (AAV4 b5) reverse 221 14 AAV4 Do 21 (AAV4 b7) forward Do 30 (AAV4 b7) reverse 211 16 AAV4 DO 31 (AAV4 b7) forward DO 35 (AAV4 b7) reverse 218 17 AAV5 DO 4 (AAV2 b1) forward DO 35 (AAV5 b1) reverse 787 18 AAV5 DO 36 (AAV5 b3) reverse 220 20 AAV5 DO 4 (AAV2 b1) forward DO 37 (AAV5 b1) reverse 214 20 AAV5 DO 40 (AAV5 b7) forward DO 41 (AAV5 b7) reverse 214 21 AAV5 DO 44 (AAV5 b7) forward DO 47 (AAV5 b5) reverse 214 22 AAV5 DO 46 (AAV5 b7) forward DO 47 (AAV5 b2) reverse 218 22 AAV5 DO 46 (AAV2 b1) forward DO 47 (AAV5 b2) reverse	9	AAV4	DO 04 (AAV2 b1) forward	DO 20 (AAV4 b1) reverse	784
11AAV4DODO23 (AAV4 B3) forwardDO24 (AAV4 B3) reverse22012AAV4DO25 (AAV4 B4) forwardDODO26 (AAV4 b5) reverse25113AAV4DO27 (AAV4 B5) forwardDO28 (AAV4 b5) reverse22514AAV4DO27 (AAV4 B5) forwardDO32 (AAV4 b5) reverse24116AAV4DO31 (AAV4 J5) forwardDO32 (AAV4 b5) reverse29817AAV5DO30 (AAV4 D2) forwardDO35 (AAV5 D1) reverse26818AAV5DO36 (AAV5 D2) forwardDO35 (AAV5 D2) reverse24620AAV5DO38 (AAV5 D2) forwardDO41 (AAV5 D2) reverse24821AAV5DO38 (AAV5 D4) forwardDO41 (AAV5 D4) reverse24822AAV5DO42 (AAV5 D6) forwardDO45 (AAV5 D6) reverse20423AAV5DO44 (AAV5 D6) forwardDO41 (AAV5 D6) reverse20824AAV5DO46 (AAV5 D7) forwardDO41 (AAV5 D6) reverse20825AAV6DO50 (AAV6 D5) forwardDO51 (AAV6 D5) reverse20826AAV6DO50 (AAV6 D5) forwardDO51 (AAV6 D5) reverse21827AAV6DO50 (AAV6 D5) forwardDO51 (AAV6 D5) reverse22228AAV6DO50 (AAV6 D5) forwardDO51 (AAV6 D5) reverse22229	10	AAV4	DO_21_(AAV4_b2)_forward	DO 22 (AAV4 b2) reverse	467
12 AAV4 D0_27_(AAV4_b4) forward D0_26_(AAV4_b5) reverse 251 13 AAV4 D0_27_(AAV4_b5) forward D0_30_(AAV4_b5) reverse 225 14 AAV4 D0_29_(AAV4_b5) forward D0_30_(AAV4_b5) reverse 225 15 AAV4 D0_31_(AAV4_b5) forward D0_32_(AAV4_b5) reverse 211 16 AAV4 D0_31_(AAV4_b5) forward D0_34_(AAV4_b5) reverse 298 17 AAV5 D0_4_(AAV2_b1) forward D0_37_(AAV5_b2) reverse 467 19 AAV5 D0_36_(AAV5_b3) reverse 220 20 AAV5 D0_40_(AAV5_b1) reverse 248 21 AAV5 D0_41_(AAV5_b6) forward D0_41_(AAV5_b1) reverse 248 23 AAV5 D0_48_(AAV5_b1) forward D0_47_(AAV5_b1) reverse 298 24 AAV5 D0_48_(AAV5_b1) forward D0_9_4_(AAV5_b1) reverse 298 24 AAV6 D0_50_(AAV6_b1) forward D0_47_(AAV6_b1) reverse 298 25 AAV6 D0_50_(AAV6_b1) forward D0_57_1_AAV6_b1) reverse 220	11	AAV4	DO 23 (AAV4 b3) forward	DO 24 (AAV4 b3) reverse	220
13 AAV4 D0_27_(AAV4_b5)_forward D0_30_(AAV4_b6)_reverse 225 14 AAV4 D0_31_(AAV4_b6)_forward D0_30_(AAV4_b6)_reverse 211 15 AAV4 D0_31_(AAV4_b7)_forward D0_32_(AAV4_b7)_reverse 211 16 AAV4 D0_31_(AAV4_b8)_forward D0_34_(AAV4_b8)_reverse 298 17 AAV5 D0_40_(AAV2_b1)_forward D0_37_(AAV5_b1)_reverse 286 19 AAV5 D0_38_(AAV5_b3)_forward D0_37_(AAV5_b4)_reverse 248 21 AAV5 D0_40_(AAV2_b4)_forward D0_41_(AAV5_b4)_reverse 248 21 AAV5 D0_42_(AAV5_b6)_forward D0_43_(AAV5_b6)_reverse 248 22 AAV5 D0_44_(AAV5_b6)_forward D0_47_(AAV5_b6)_reverse 248 23 AAV5 D0_44_(AAV5_b6)_forward D0_47_(AAV5_b7)_reverse 288 24 AAV5 D0_44_(AAV5_b6)_forward D0_47_(AAV5_b7)_reverse 298 25 AAV6 D0_50_(AAV6_b3)_forward D0_47_(AAV6_b7_b1)_reverse 784 26 AAV6 D0_54_(AAV6_b1)_forward D0_57_(AAV6_b51)_reverse 222 28	12	AAV4	DO_25_(AAV4_b4)_forward	DO_26_(AAV4_b4)_reverse	251
14AAV4DODO20(AAV4 b)DO30(AAV4 b)Porerse44515AAV4DO31(AAV4 b)DO32(AAV4 b)Porerse21116AAV4DO31(AAV4 b)Porerse29829817AAV5DO04(AAV2 b)preverse29818AAV5DO36(AAV5 b)preverse24619AAV5DO36(AAV5 b)preverse24821AAV5DO42(AAV5 b)preverse24822AAV5DO42(AAV5 b)preverse20422AAV5DO44(AAV5 b)preverse20423AAV5DO44(AAV5 b)preverse20824AAV5DO44(AAV5 b)preverse20824AAV5DO44(AAV5 b)preverse29825AAV6DO91(AAV5 b)preverse29826AAV6DO52(AAV6 b)preverse21027AAV6DO52(AAV6 b)preverse21228AAV6DO52(AAV6 b)preverse21129AAV6DO54(AAV6 b)preverse21230AAV6DO56(AAV6 b)preverse21131AAV6DO56(AAV6 b)preverse21333A	13	AAV4	DO 27 (AAV4 b5) forward	DO 28 (AAV4 b5) reverse	225
15AAV4DO_31 (AAV4_b7) forwardDO_32_(AAV4_b8) reverse21116AAV4DO_33 (AAV4_b8) forwardDO_34 (AAV4_b8) reverse29817AAV5DO_04 (AAV2_b1) forwardDO_35 (AAV5_b1) reverse29818AAV5DO_36 (AAV5_b2) forwardDO_37 (AAV5_b1) reverse20020AAV5DO_40 (AAV5_b4) forwardDO 39 (AAV5_b4) reverse24821AAV5DO_40 (AAV5_b4) forwardDO 41 (AAV5_b4) reverse24822AAV5DO 42 (AAV5_b5) forwardDO 43 (AAV5_b5) reverse20423AAV5DO 44 (AAV5_b6) forwardDO 44 (AAV5_b7) reverse20824AAV5DO 46 (AAV5_b7) forwardDO 47 (AAV5_b7) reverse20824AAV5DO 46 (AAV5_b7) forwardDO 49 (AAV5_b7) reverse29825AAV6DO 50 (AAV6_b2) forwardDO 49 (AAV2_b7) reverse29826AAV6DO 50 (AAV6_b2) forwardDO 51 (AAV6_b2) reverse49427AAV6DO 52 (AAV6_b3) forwardDO 53 (AAV6_b3) reverse22028AAV6DO 56 (AAV6_b43) forwardDO 57 (AAV6_b5) reverse22230AAV6DO 60 (AAV6_b5) forwardDO 57 (AAV6_b5) reverse21131AAV6DO 60 (AAV6_b7) forwardDO 61 (AAV6_b5) reverse21833AAV8DO 60 (AAV6_b7) forwardDO 61 (AAV6_b5) reverse21134AAV8DO 60 (AAV6_b7) forwardDO 61 (AAV6_b5) reverse21135AAV8DO 66 (AAV6_b7) forwardDO 61 (AAV	14	AAV4	DO 29 (AAV4 b6) forward	DO 30 (AAV4 b6) reverse	445
16 AAV4 DO_31_(AAV4_8) forward DO_34_(AAV4_b8) reverse 298 17 AAV5 DO_04_(AAV2_b1) forward DO_37_(AAV5_b1) reverse 787 18 AAV5 DO_38_(AAV5_b2) forward DO_37_(AAV5_b1) reverse 220 20 AAV5 DO_40_(AAV5_b2) forward DO_39_(AAV5_b3) reverse 220 20 AAV5 DO_42_(AAV5_b5) forward DO_41_(AAV5_b5) reverse 204 21 AAV5 DO_44_(AAV5_b5) forward DO_45_(AAV5_b5) reverse 204 22 AAV5 DO_44_(AAV5_b5) forward DO_41_(AAV5_b5) reverse 208 24 AAV5 DO_44_(AAV5_b7) forward DO_19_(AAV2_b1) reverse 208 25 AAV6 DO_04_(AAV2_b1) forward DO_19_(AAV6_b1) reverse 298 26 AAV6 DO_52_(AAV6_b2) forward DO_51_(AAV6_b3) reverse 222 28 AAV6 DO_54_(AAV6_b4) forward DO_51_(AAV6_b3) reverse 222 29 AAV6 DO_54_(AAV6_b5) forward DO_57_(AAV6_b5) reverse 222 30 AAV6 DO_56_(AAV6_b5	15	AAV4	DO 31 (AAV4 b7) forward	DO 32 (AAV4 b7) reverse	211
17 AAV5 DO_04_(AAV2_b1)_forward DO_35_(AAV5_b1)_reverse 787 18 AAV5 DO_36_(AAV5_b2)_forward DO_37_(AAV5_b2)_reverse 467 19 AAV5 DO 38_(AAV5_b3)_forward DO_39_(AAV5_b1)_reverse 220 20 AAV5 DO 40_(AAV5_b3)_forward DO_41_(AAV5_b4)_reverse 248 21 AAV5 DO_44_(AAV5_b6)_forward DO_45_(AAV5_b7)_reverse 204 22 AAV5 DO_44_(AAV5_b6)_forward DO_45_(AAV5_b7)_reverse 208 23 AAV5 DO_48_(AAV5_b7)_forward DO_47_(AAV5_b7)_reverse 208 24 AAV5 DO_48_(AAV5_b7)_forward DO_44_(AAV6_b7)_reverse 298 25 AAV6 DO_50_(AAV6_b7)_forward DO_51_(AAV6_b7)_reverse 242 26 AAV6 DO_52_(AAV6_b7)_forward DO_55_(AAV6_b7)_reverse 242 27 AAV6 DO_58_(AAV6_b7)_forward DO_57_(AAV6_b7)_reverse 242 28 AAV6 DO_58_(AAV6_b7)_forward DO_57_(AAV6_b7)_reverse 241 29 AAV6 DO_58_(AAV6_b	16	AAV4	DO 33 (AAV4 b8) forward	DO 34 (AAV4 b8) reverse	298
18AAV5DD_36_(AAV5_b2)_forwardDD_37_(AAV5_b2)_reverse46719AAV5DD_38_(AAV5_b3)_forwardDD_39_(AAV5_b3)_reverse22020AAV5DD_40_(AAV5_b4)_forwardDD_41_(AAV5_b4)_reverse24821AAV5DD_42_(AAV5_b5)_forwardDD_43_(AAV5_b5)_reverse20422AAV5DD_44_(AAV5_b5)_forwardDD_47_(AAV5_b5)_reverse20423AAV5DD_44_(AAV5_b5)_forwardDD_47_(AAV5_b5)_reverse20824AAV5DD_044_(AAV5_b5)_forwardDD_19_(AAV2_b5)_reverse29825AAV6DD_09_0_(AAV6_b1)_forwardDD_51_(AAV6_b1)_reverse78426AAV6DD_52_(AAV6_b3)_forwardDD_51_(AAV6_b2)_reverse29427AAV6DD_52_(AAV6_b3)_forwardDD_51_(AAV6_b3)_reverse22228AAV6DD_54_(AAV6_b4)_forwardDD_57_(AAV6_b5)_reverse22230AAV6DD_58_(AAV6_b6)_forwardDD_57_(AAV6_b6)_reverse22230AAV6DD_60_(AAV6_b7)_forwardDD_61_(AAV6_b6)_reverse24331AAV6DD_60_(AAV6_b7)_forwardDD_61_(AAV6_b6)_reverse29833AAV8DD_64_(AAV6_b1)_forwardDD_65_(AAV8_b1)_reverse29833AAV8DD_66_(AAV6_b3)_forwardDD_61_(AAV8_b1)_reverse22036AAV8DD_66_(AAV6_b3)_forwardDD_61_(AAV8_b1)_reverse22137AAV8DD_66_(AAV6_b3)_forwardDD_61_(AAV8_b1)_reverse22238AAV8DD_71_(AAV8_b3)_forwardDD_71_(A	17	AAV5	DO 04 (AAV2 b1) forward	DO 35 (AAV5 b1) reverse	787
19AAV5D0_38_(AAV5_b3)_forwardD0_30_3(AAV5_b3)_reverse22020AAV5D0_40_(AAV5_b4)_forwardD0_41_(AAV5_b4)_reverse24821AAV5D0_42 (AAV5_b5) forwardD0_43_(AAV5_b5)_reverse24422AAV5D0_44_(AAV5_b6)_forwardD0_45_(AAV5_b5)_reverse24423AAV5D0_44_(AAV5_b7)_forwardD0_47_(AAV5_b7)_reverse29824AAV5D0_44_(AAV5_b7)_forwardD0_49_(AAV6_b1)_reverse29825AAV6D0_04_(AAV5_b1)_forwardD0_49_(AAV6_b1)_reverse78426AAV6D0_50_(AAV6_b2)_forwardD0_51_(AAV6_b2)_reverse24227AAV6D0_52_(AAV6_b3)_forwardD0_55_(AAV6_b3)_reverse22028AAV6D0_54_(AAV6_b4)_forwardD0_57_(AAV6_b4)_reverse24229AAV6D0_56_(AAV6_b5)_forwardD0_57_(AAV6_b4)_reverse24229AAV6D0_56_(AAV6_b5)_forwardD0_59_(AAV6_b6)_reverse43331AAV6D0_60_(AAV6_b7)_forwardD0_61_(AAV6_b7)_reverse21132AAV6D0_60_(AAV6_b7)_forwardD0_61_(AAV6_b7)_reverse29833AAV8D0_64_(AAV2_b1)_forwardD0_65_(AAV8_b1)_reverse78434AAV8D0_66_(AAV8_b12)_forwardD0_65_(AAV8_b12)_reverse22036AAV8D0_66_(AAV8_b13)_forwardD0_67_(AAV8_b12)_reverse22137AAV8D0_66_(AAV8_b13)_forwardD0_67_(AAV8_b12)_reverse22238AAV8D0_75_(AAV8_b13)_forwardD0_	18	AAV5	DO 36 (AAV5 b2) forward	DO 37 (AAV5 b2) reverse	467
20AAV5DO $40^{-}(AAV5 b4)^{-}$ forwardDO $41^{-}(AAV5 b4)^{-}$ reverse24821AAV5DO $42^{-}(AAV5 b5)^{-}$ forwardDO $41^{-}(AAV5 b4)^{-}$ reverse20422AAV5DO $42^{-}(AAV5 b5)^{-}$ forwardDO $43^{-}(AAV5 b5)^{-}$ preverse20423AAV5DO $46^{-}(AAV5 b5)^{-}$ forwardDO $43^{-}(AAV5 b5)^{-}$ preverse20824AAV5DO $46^{-}(AAV5 b8)^{-}$ forwardDO $19^{-}(AAV5 b5)^{-}$ reverse29825AAV6DO $04^{-}(AAV5 b3)^{-}$ forwardDO $49^{-}(AAV6 b1)^{-}$ reverse29826AAV6DO $52^{-}(AAV6 b3)^{-}$ forwardDO $53^{-}(AAV6 b3)^{-}$ reverse22028AAV6DO $52^{-}(AAV6 b3)^{-}$ forwardDO $53^{-}(AAV6 b4)^{-}$ reverse22028AAV6DO $52^{-}(AAV6 b5)^{-}$ forwardDO $55^{-}(AAV6 b5)^{-}$ reverse22230AAV6DO $58^{-}(AAV6 b5)^{-}$ forwardDO $59^{-}(AAV6 b5)^{-}$ reverse21122AAV6DO $60^{-}(AAV6 b5)^{-}$ forwardDO $63^{-}(AAV8 b5)^{-}$ reverse21123AAV6DO $60^{-}(AAV6 b5)^{-}$ forwardDO $63^{-}(AAV8 b5)^{-}$ reverse22833AAV8DO $64^{-}(AAV2 b1)^{-}$ forwardDO $63^{-}(AAV8 b1)^{-}$ reverse29833AAV8DO $64^{-}(AAV2 b1)^{-}$ forwardDO $63^{-}(AAV8 b1)^{-}$ reverse29833AAV8DO $68^{-}(AAV8 b2)^{-}$ forwardDO $70^{-}(AAV8 b3)^{-}$ reverse22036AAV8DO $5^{-}(AAV8 b3)^{-}$ forwardDO $70^{-}(AAV8 b45)^{-}$ reverse222 <tr< td=""><td>19</td><td>AAV5</td><td>DO 38 (AAV5 b3) forward</td><td>DO 39 (AAV5 b3) reverse</td><td>220</td></tr<>	19	AAV5	DO 38 (AAV5 b3) forward	DO 39 (AAV5 b3) reverse	220
21AAV5 $DO_{42}^{-}(AAV5_b5)^{-}$ forward $DO_{43}^{-}(AAV5_b5)^{-}$ reverse20422AAV5 $DO_{44}^{-}(AAV5_b6)^{-}$ forward $DO_{43}^{-}(AAV5_b5)^{-}$ reverse24223AAV5 $DO_{46}^{-}(AAV5_b6)^{-}$ forward $DO_{47}^{-}(AAV5_b7)^{-}$ reverse20824AAV5 $DO_{46}^{-}(AAV5_b8)^{-}$ forward $DO_{47}^{-}(AAV5_b8)^{-}$ reverse29825AAV6 $DO_{40}^{-}(AAV5_b8)^{-}$ forward $DO_{49}^{-}(AAV6_b8)^{-}$ reverse29826AAV6 $DO_{50}^{-}(AAV6_b2)^{-}$ forward $DO_{49}^{-}(AAV6_b3)^{-}$ reverse49427AAV6 $DD_{52}^{-}(AAV6_b2)^{-}$ forward $DO_{53}^{-}(AAV6_b3)^{-}$ reverse22028AAV6 $DO_{54}^{-}(AAV6_b5)^{-}$ forward $DO_{57}^{-}(AAV6_b5)^{-}$ reverse22230AAV6 $DD_{56}^{-}(AAV6_b5)^{-}$ forward $DO_{59}^{-}(AAV6_b5)^{-}$ reverse22131AAV6 $DD_{62}^{-}(AAV6_b7)^{-}$ forward $DO_{61}^{-}(AAV6_b5)^{-}$ reverse21132AAV6 $DD_{62}^{-}(AAV6_b8)^{-}$ forward $DO_{61}^{-}(AAV6_b5)^{-}$ reverse29833AAV8 $DO_{64}^{-}(AAV2_b8)^{-}$ forward $DO_{63}^{-}(AAV8_b8)^{-}$ reverse29834AAV8 $DO_{64}^{-}(AAV8_b8)^{-}$ forward $DO_{69}^{-}(AAV8_b8)^{-}$ reverse22036AAV8 $DO_{66}^{-}(AAV8_b8)^{-}$ forward $DO_{69}^{-}(AAV8_b8)^{-}$ reverse24237AAV8 $DO_{66}^{-}(AAV8_b8)^{-}$ forward $DO_{70}^{-}(AAV8_b8)^{-}$ reverse24237AAV8 $DO_{66}^{-}(AAV8_b8)^{-}$ forward<	20	AAV5	DO 40 (AAV5 b4) forward	DO 41 (AAV5 b4) reverse	248
22AAV5DO $44_{-}(AAV5_{-}b6)$ forwardDO $45_{-}(AAV5_{-}b6)$ reverse 442 23AAV5DO $46_{-}(AAV5_{-}b7)$ forwardDO $47_{-}(AAV5_{-}b7)$ reverse20824AAV5DO $48_{-}(AAV5_{-}b8)$ forwardDO $19_{-}(AAV2_{-}b8)$ reverse29825AAV6DO $50_{-}(AAV2_{-}b8)$ forwardDO $40_{-}(AAV2_{-}b8)$ reverse78426AAV6DO $50_{-}(AAV6_{-}b3)$ forwardDO $51_{-}(AAV6_{-}b3)$ reverse22028AAV6DO $52_{-}(AAV6_{-}b3)$ forwardDO $53_{-}(AAV6_{-}b3)$ reverse22028AAV6DO $54_{-}(AAV6_{-}b4)$ forwardDO $55_{-}(AAV6_{-}b5)$ reverse22229AAV6DO $56_{-}(AAV6_{-}b4)$ forwardDO $57_{-}(AAV6_{-}b5)$ reverse21131AAV6DO $60_{-}(AAV2_{-}b1)$ forwardDO $61_{-}(AAV6_{-}b5)$ reverse29833AAV6DO $60_{-}(AAV2_{-}b1)$ forwardDO $61_{-}(AAV8_{-}b2)$ reverse29833AAV6DO $60_{-}(AAV2_{-}b1)$ forwardDO $61_{-}(AAV8_{-}b2)$ reverse29834AAV8DO $00_{-}(AAV2_{-}b1)$ forwardDO $61_{-}(AAV8_{-}b2)$ reverse29835AAV8DO $66_{-}(AAV8_{-}b3)$ forwardDO $61_{-}(AAV8_{-}b3)$ reverse22036AAV8DO $66_{-}(AAV8_{-}b3)$ forwardDO $72_{-}(AAV8_{-}b3)$ reverse22237AAV8DO $66_{-}(AAV8_{-}b3$	21	AAV5	DO 42 (AAV5 b5) forward	DO 43 (AAV5 b5) reverse	204
23AAV5 $DO_46_{-}(AAV5_b7)_{-}$ forward $DO_47_{-}(AAV5_b7)_{-}$ reverse20824AAV5 $DO_48_{-}(AAV5_b8)_{-}$ forward $DO_19_{-}(AAV2_b8)_{-}$ reverse29825AAV6 $DO_04_{-}(AAV5_b8)_{-}$ forward $DO_04_{-}(AAV6_b1)_{-}$ reverse29826AAV6 $DO_{-}00_{-}(AAV6_b2)_{-}$ forward $DO_51_{-}(AAV6_b2)_{-}$ reverse49427AAV6 $DO_52_{-}(AAV6_b2)_{-}$ forward $DO_55_{-}(AAV6_b3)_{-}$ reverse22028AAV6 $DO_56_{-}(AAV6_b4)_{-}$ forward $DO_55_{-}(AAV6_b4)_{-}$ reverse24229AAV6 $DO_56_{-}(AAV6_b5)_{-}$ forward $DO_57_{-}(AAV6_b5)_{-}$ reverse21130AAV6 $DO_60_{-}(AAV6_b7)_{-}$ forward $DO_61_{-}(AAV2_b8)_{-}$ reverse21131AAV6 $DO_{-}60_{-}(AAV6_b7)_{-}$ forward $DO_{-}61_{-}(AAV2_b8)_{-}$ reverse29833AAV8 $DO_60_{-}(AAV2_b1)_{-}$ forward $DO_65_{-}(AAV6_b5)_{-}$ reverse21236AAV8 $DO_66_{-}(AAV8_b3)_{-}$ forward $DO_67_{-}(AAV8_b1)_{-}$ reverse21833AAV8 $DO_66_{-}(AAV8_b3)_{-}$ forward $DO_60_{-}(AAV8_b3)_{-}$ reverse22036AAV8 $DO_{-}66_{-}(AAV8_b3)_{-}$ forward $DO_{-}74_{-}(AAV8_b43)_{-}$ reverse22137AAV8 $DO_{-}66_{-}(AAV8_b5)_{-}$ forward $DO_{-}74_{-}(AAV8_b5)_{-}$ reverse22238AAV8 $DO_{-}71_{-}(AAV8_b7)_{-}$ forward $DO_{-}74_{-}(AAV8_b7)_{-}$ reverse21140AAV8 $DO_{-}71_{-}(AAV8_b1)_{-}$ reverse2114340 <td>22</td> <td>AAV5</td> <td>DO 44 (AAV5 b6) forward</td> <td>DO 45 (AAV5 b6) reverse</td> <td>442</td>	22	AAV5	DO 44 (AAV5 b6) forward	DO 45 (AAV5 b6) reverse	442
24AAV5 $DO_4^{48}(AAV5^{-}b8)^{-}$ forward $DO_1^{-10}(AAV2^{-}b8)^{-}$ reverse29825AAV6 $DO_0^{4}(AAV2^{-}b1)^{-}$ forward $DO_4^{9}(AAV6^{-}b1)^{-}$ reverse78426AAV6 $DO_5^{0}(AAV6^{-}b2)^{-}$ forward $DO_5^{-1}(AAV6^{-}b2)^{-}$ reverse49427AAV6 $DO_5^{0}(AAV6^{-}b2)^{-}$ forward $DO_5^{-1}(AAV6^{-}b2)^{-}$ reverse22028AAV6 $DO_5^{4}(AAV6^{-}b4)^{-}$ forward $DO_5^{5}(AAV6^{-}b4)^{-}$ reverse24229AAV6 $DO_5^{6}(AAV6^{-}b5)^{-}$ forward $DO_5^{-1}(AAV6^{-}b4)^{-}$ reverse21131AAV6 $DO_6^{0}(AAV6^{-}b7)^{-}$ forward $DO_6^{-1}(AAV2^{-}b8)^{-}$ reverse29833AAV6 $DO_6^{0}(AAV6^{-}b7)^{-}$ forward $DO_6^{-1}(AAV2^{-}b8)^{-}$ reverse29833AAV8 $DO_6^{-1}(AAV2^{-}b1)^{-}$ forward $DO_6^{-1}(AAV2^{-}b8)^{-}$ reverse29833AAV8 $DO_6^{-1}(AAV8^{-}b2)^{-}$ forward $DO_6^{-1}(AAV8^{-}b4)^{-}$ reverse22036AAV8 $DO_6^{-1}(AAV8^{-}b4)^{-}$ forward $DO_6^{-1}(AAV8^{-}b4)^{-}$ reverse24237AAV8 $DO_6^{-1}(AAV8^{-}b4)^{-}$ forward $DO_6^{-1}(AAV8^{-}b4)^{-}$ reverse24238AAV8 $DO_7^{-1}(AAV8^{-}b4)^{-}$ forward $DO_7^{-1}(AAV8^{-}b4)^{-}$ reverse24239AAV8 $DO_7^{-1}(AAV8^{-}b4)^{-}$ forward $DO_7^{-1}(AAV8^{-}b4)^{-}$ reverse24237AAV8 $DO_7^{-1}(AAV8^{-}b4)^{-}$ forward $DO_7^{-1}(AAV8^{-}b4)^{-}$ reverse24238AAV8 $DO_7^{-1}(AAV8^{-}b4)^{-}$ forward DO_7	23	AAV5	DO 46 (AAV5 b7) forward	DO 47 (AAV5 b7) reverse	208
25AAV6 $DO_0-(AAV2_b1)$ forward $DO_49-(AAV6_b1)$ reverse78426AAV6 DO_50 (AAV6_b2) forward DO_51 (AAV6_b2) reverse49427AAV6 DO_52 (AAV6_b3) forward DO_53 (AAV6_b3) reverse22028AAV6 DO_54 (AAV6_b4) forward DO_55 (AAV6_b4) reverse24229AAV6 DO_56 (AAV6_b5) forward DO_57 (AAV6_b5) reverse22230AAV6 DO_58 (AAV6_b6) forward DO_59 (AAV6_b6) reverse43331AAV6 DO_60 (AAV6_b7) forward DO_19 (AAV2_b8) reverse29833AAV8 DO_60 (AAV6_b8) forward DO_19 (AAV2_b8) reverse29833AAV8 DO_64 (AAV8_b2) forward DO_65 (AAV8_b1) reverse29034AAV8 DO_66 (AAV8_b2) forward DO_67 (AAV8_b1) reverse29833AAV8 DO_66 (AAV8_b2) forward DO_67 (AAV8_b1) reverse24236AAV8 DO_66 (AAV8_b1) forward DO_67 (AAV8_b1) reverse24237AAV8 DO_66 (AAV8_b1) forward DO_70 (AAV8_b1) reverse24238AAV8 DO_71 (AAV8_b6) forward DO_72 (AAV8_b6) reverse29841AAV9 DO_77 (AAV8_b8) forward DO_76 (AAV8_b7) reverse29841AAV9 DO_77 (AAV8_b8) forward DO_76 (AAV8_b1) reverse29841AAV9 DO_77 (AAV8_b8) forward DO_74 (AAV8_b7) reverse29841AAV9 DO_77 (AAV8_b8) forward DO_76 (AAV8_b1) reverse298	24	AAV5	DO 48 (AAV5 b8) forward	DO 19 (AAV2 b8) reverse	298
26AAV6 $DO_50_1(AAV6_b2)_1$ forward $DO_51_1(AAV6_b2)_1$ reverse49427AAV6 $DO_52_1(AAV6_b3)_1$ forward $DO_53_1(AAV6_b3)_1$ reverse22028AAV6 $DD_54_1(AAV6_b4)_1$ forward $DD_55_1(AAV6_b5)_1$ reverse24229AAV6 $DD_56_1(AAV6_b5)_1$ forward $DD_57_1(AAV6_b5)_1$ reverse22230AAV6 $DD_56_1(AAV6_b6)_1$ forward $DD_59_1(AAV6_b6)_1$ reverse23331AAV6 $DD_60_0(AAV6_b6)_1$ forward $DD_05_1(AAV6_b6)_1$ reverse29833AAV6 $DD_06_2(AAV6_b8)_1$ forward $DD_01_9(AAV2_b8)_1$ reverse29833AAV8 $DD_04_1(AAV2_b1)_1$ forward $DD_06_3(AAV8_b1)_1$ reverse78434AAV8 $DD_06_4(AAV8_b2)_1$ forward $DD_06_1(AAV8_b3)_1$ reverse22036AAV8 $DD_06_6(AAV8_b2)_1$ forward $DD_06_1(AAV8_b3)_1$ reverse22138AAV8 $DD_05_1(AAV8_b4)_1$ forward $DD_07_0(AAV8_b5)_1$ reverse21140AAV8 $DD_71_1(AAV8_b6)_1$ forward $DD_74_1(AAV8_b6)_1$ reverse21140AAV8 $DD_75_1(AAV8_b7)_1$ forward $DD_74_1(AAV8_b6)_1$ reverse21141AAV9 $DD_09_0(A(AV2_b1)_1$ forward $DD_78_1(AAV9_b1)_1$ reverse21142AAV9 $DD_09_0(A(AV2_b1)_1$ forward $DD_78_1(AAV8_b1)_1$ reverse22044AAV9 $DD_79_1(AAV8_b2)_1$ forward $DD_78_1(AAV9_b1)_1$ reverse22044AAV9 $DD_79_1(AAV9_b2)_1$ forward $DD_78_1(AAV9_b5)_1$ reverse21146 </td <td>25</td> <td>AAV6</td> <td>DO 04 (AAV2 b1) forward</td> <td>DO 49 (AAV6 b1) reverse</td> <td>784</td>	25	AAV6	DO 04 (AAV2 b1) forward	DO 49 (AAV6 b1) reverse	784
27AAV6DO_52_(AAV6_b3)_forwardDO_53_(AAV6_b3)_reverse22028AAV6DO_54_(AAV6_b4)_forwardDO_55_(AAV6_b4)_reverse24229AAV6DO_56_(AAV6_b5)_forwardDO_57_(AAV6_b5)_reverse22230AAV6DO_58_(AAV6_b5)_forwardDO_59_(AAV6_b6)_reverse43331AAV6DO_60_(AAV6_b7)_forwardDO_61_(AAV6_b7)_reverse29833AAV8DO_62_(AAV6_b8)_forwardDO_63_(AAV8_b1)_reverse29833AAV8DO_64_(AAV2_b1)_forwardDO_65_(AAV8_b2)_reverse20035AAV8DO_66_(AAV8_b3)_forwardDO_67_(AAV8_b3)_reverse22036AAV8DO_66_(AAV8_b3)_forwardDO_69_(AAV8_b4)_reverse24237AAV8DO_55_(AAV6_b5)_forwardDO_70_(AAV8_b4)_reverse24238AAV8DO_71_(AAV8_b6)_forwardDO_72_(AAV8_b6)_reverse21140AAV8DO_75_(AAV8_b8)_forwardDO_74_(AAV8_b7)_reverse21140AAV8DO_75_(AAV8_b8)_forwardDO_76_(AAV8_b7)_reverse29841AAV9DO_79_(AAV8_b8)_forwardDO_76_(AAV9_b1)_reverse24243AAV9DO_79_(AAV9_b2)_forwardDO_78_(AAV9_b1)_reverse24244AAV9DO_79_(AAV9_b5)_forwardDO_78_(AAV9_b5)_reverse21146AAV9DO_81_(AAV9_b5)_forwardDO_82_(AAV9_b5)_reverse21946AAV9DO_81_(AAV9_b5)_forwardDO_84_(AAV9_b6)_reverse21148AAV9DO_85_(AAV9_b5)_forwardDO_84_(AAV4	26	AAV6	DO 50 (AAV6 b2) forward	DO 51 (AAV6 b2) reverse	494
28AAV6DO_54_(AAV6_b4)_forwardDO_55_(AAV6_b4)_reverse24229AAV6DO_56_(AAV6_b5)_forwardDO_57_(AAV6_b5)_reverse22230AAV6DO_88_(AAV6_b6)_forwardDO_59_(AAV6_b5)_reverse23331AAV6DO_60_(AAV6_b7)_forwardDO_61_(AAV6_b7)_reverse21132AAV6DO_62_(AAV6_b8)_forwardDO_19_(AAV2_b8)_reverse29833AAV8DO_04_(AAV2_b1)_forwardDO_63_(AAV8_b1)_reverse78434AAV8DO_64_(AAV8_b2)_forwardDO_65_(AAV8_b3)_reverse20035AAV8DO_66_(AAV8_b3)_forwardDO_67_(AAV8_b3)_reverse22236AAV8DO_66_(AAV8_b4)_forwardDO_70_(AAV8_b5)_reverse22237AAV8DO_55_(AAV8_b6)_forwardDO_72_(AAV8_b5)_reverse22238AAV8DO_73_(AAV8_b6)_forwardDO_74_(AAV8_b7)_reverse21140AAV8DO_75_(AAV8_b8)_forwardDO_74_(AAV2_b8)_reverse29841AAV9DO_76_(AAV8_b1)_forwardDO_76_(AAV9_b1)_reverse78742AAV9DO_79_(AAV9_b2)_forwardDO_76_(AAV9_b1)_reverse78743AAV9DO_79_(AAV9_b4)_forwardDO_78_(AAV9_b5)_reverse22044AAV9DO_79_(AAV9_b4)_forwardDO_82_(AAV9_b5)_reverse22045AAV9DO_81_(AAV9_b5)_forwardDO_82_(AAV9_b5)_reverse21146AAV9DO_83_(AAV9_b6)_forwardDO_84_(AAV9_b6)_reverse21946AAV9DO_85_(AAV9_b5)_forwardDO_84_(AAV9	27	AAV6	DO 52 (AAV6 b3) forward	DO 53 (AAV6 b3) reverse	220
29AAV6 $DO_56^{-}(AAV6_b5)^{-}$ forward $DO_57^{-}(AAV6_b5)^{-}$ reverse22230AAV6 $DO_58^{-}(AAV6_b6)^{-}$ forward $DO_59^{-}(AAV6_b6)^{-}$ reverse43331AAV6 $DO_60^{-}(AAV6_b7)^{-}$ forward $DO_61^{-}(AAV2_b8)^{-}$ reverse21132AAV6 $DO_62^{-}(AAV6_b8)^{-}$ forward $DO_19^{-}(AAV2_b8)^{-}$ reverse29833AAV8 $DO_04^{-}(AAV2_b1)^{-}$ forward $DO_63^{-}(AAV8_b1)^{-}$ reverse29834AAV8 $DO_64^{-}(AAV8_b2)^{-}$ forward $DO_65^{-}(AAV8_b2)^{-}$ reverse50035AAV8 $DO_66^{-}(AAV8_b3)^{-}$ forward $DO_65^{-}(AAV8_b3)^{-}$ reverse22036AAV8 $DO_66^{-}(AAV8_b4)^{-}$ forward $DO_69^{-}(AAV8_b4)^{-}$ reverse24237AAV8 $DO_56^{-}(AAV8_b4)^{-}$ forward $DO_70^{-}(AAV8_b4)^{-}$ reverse22238AAV8 $DO_71^{-}(AAV8_b6)^{-}$ forward $DO_72^{-}(AAV8_b6)^{-}$ reverse21140AAV8 $DO_73^{-}(AAV8_b4)^{-}$ forward $DO_74^{-}(AAV8_b6)^{-}$ reverse21140AAV8 $DO_73^{-}(AAV8_b6)^{-}$ forward $DO_74^{-}(AAV8_b6)^{-}$ reverse21141AAV9 $DO_94^{-}(AAV2_b1)^{-}$ forward $DO_74^{-}(AAV8_b1)^{-}$ reverse21142AAV9 $DO_77^{-}(AAV8_b6)^{-}$ forward $DO_74^{-}(AAV8_b6)^{-}$ reverse21143AAV9 $DO_98^{-}(AAV2_b1)^{-}$ forward $DO_78^{-}(AAV9_b1)^{-}$ reverse21244AAV9 $DO_99^{-}(AAV9_b4)^{-}$ forward $DO_80^{-}(AAV9_b4)^{-}$ reverse214<	28	AAV6	DO 54 (AAV6 b4) forward	DO 55 (AAV6 b4) reverse	242
30 AAV6DO_58_(AAV6_b6)_forwardDO_59_(AAV6_b6)_reverse433 31 AAV6DO_60_(AAV6_b7)_forwardDO_61_(AAV6_b7)_reverse211 32 AAV6DO_62_(AAV6_b8)_forwardDO_19_(AAV2_b8)_reverse298 33 AAV8DO_04_(AAV2_b1)_forwardDO_63_(AAV8_b1)_reverse784 34 AAV8DO_64_(AAV8_b2)_forwardDO_65_(AAV8_b1)_reverse784 34 AAV8DO_64_(AAV8_b2)_forwardDO_67_(AAV8_b1)_reverse200 35 AAV8DO_66_(AAV8_b3)_forwardDO_67_(AAV8_b4)_reverse220 36 AAV8DO_66_(AAV8_b4)_forwardDO_69_(AAV8_b4)_reverse222 37 AAV8DO_56_(AAV6_b5)_forwardDO_70_(AAV8_b5)_reverse222 38 AAV8DO_71_(AAV8_b6)_forwardDO_72_(AAV8_b6)_reverse211 40 AAV8DO_75_(AAV8_b7)_forwardDO_74_(AAV8_b7)_reverse218 41 AAV9DO_75_(AAV8_b8)_forwardDO_76_(AAV9_b1)_reverse298 41 AAV9DO_77_(AAV9_b2)_forwardDO_78_(AAV9_b1)_reverse298 42 AAV9DO_79_(AAV9_b2)_forwardDO_78_(AAV9_b3)_reverse220 44 AAV9DO_99_(AAV2_b3)_forwardDO_80_(AAV9_b4)_reverse221 45 AAV9DO_99_(AAV9_b5)_forwardDO_81_(AAV9_b5)_reverse211 46 AAV9DO_81_(AAV9_b5)_forwardDO_84_(AAV9_b5)_reverse211 48 AAV9DO_87_(AAV9_b7)_forwardDO_84_(AAV9_b5)_reverse211 48 AAV9DO_87	29	AAV6	DO 56 (AAV6 b5) forward	DO 57 (AAV6 b5) reverse	222
31 AAV6DD_60_(AAV6_b7)_forwardDD_61_(AAV6_b7)_reverse211 32 AAV6DD_62_(AAV6_b8)_forwardDD_19_(AAV2_b8)_reverse298 33 AAV8DD_04_(AAV2_b1)_forwardDD_63_(AAV8_b1)_reverse298 34 AAV8DD_64_(AAV8_b2)_forwardDD_65_(AAV8_b2)_reverse500 35 AAV8DD_66_(AAV8_b3)_forwardDD_67_(AAV8_b3)_reverse220 36 AAV8DD_66_(AAV8_b3)_forwardDD_67_(AAV8_b3)_reverse242 37 AAV8DD_65_(AAV6_b5)_forwardDD_70_(AAV8_b5)_reverse222 38 AAV8DD_71_(AAV8_b6)_forwardDD_72_(AAV8_b5)_reverse211 40 AAV8DD_73_(AAV8_b7)_forwardDD_74_(AAV8_b7)_reverse211 40 AAV8DD_75_(AAV8_b8)_forwardDD_76_(AAV9_b8)_reverse298 41 AAV9DD_04_(AAV2_b1)_forwardDD_76_(AAV9_b1)_reverse787 42 AAV9DD_08_(AAV2_b1)_forwardDD_78_(AAV9_b3) reverse220 44 AAV9DD_79_(AAV9_b4)_forwardDO_80_(AAV9_b4)_reverse242 45 AAV9DO_79_(AAV9_b4)_forwardDO_78_(AAV9_b3) reverse211 46 AAV9DO_81_(AAV9_b5)_forwardDO_82_(AAV9_b5)_reverse219 46 AAV9DO_81_(AAV9_b6)_forwardDO_84_(AAV9_b6)_reverse213 47 AAV9DO_85_(AAV9_b7)_forwardDO_86_(AAV9_b7)_reverse211 48 AAV9DO_87_(AAV9_b8)_forwardDO_84_(AAV4_b8)_reverse298	30	AAV6	DO 58 (AAV6 b6) forward	DO 59 (AAV6 b6) reverse	433
32AAV6 $DO_{-6}^{-2}(AAV6^{-}b8)^{-}$ forward $DO_{-19}^{-}(AAV2^{-}b8)^{-}$ reverse29833AAV8 $DO_{-04}^{-}(AAV2^{-}b1)^{-}$ forward $DO_{-63}^{-}(AAV8^{-}b1)^{-}$ reverse78434AAV8 $DO_{-64}^{-}(AAV8^{-}b2)^{-}$ forward $DO_{-63}^{-}(AAV8^{-}b1)^{-}$ reverse50035AAV8 $DO_{-66}^{-}(AAV8^{-}b2)^{-}$ forward $DO_{-65}^{-}(AAV8^{-}b3)^{-}$ reverse22036AAV8 $DO_{-66}^{-}(AAV8^{-}b4)^{-}$ forward $DO_{-69}^{-}(AAV8^{-}b4)^{-}$ reverse24237AAV8 $DO_{-66}^{-}(AAV8^{-}b4)^{-}$ forward $DO_{-70}^{-}(AAV8^{-}b4)^{-}$ reverse22238AAV8 $DO_{-71}^{-}(AAV8^{-}b5)^{-}$ forward $DO_{-72}^{-}(AAV8^{-}b6)^{-}$ reverse23339AAV8 $DO_{-71}^{-}(AAV8^{-}b4)^{-}$ forward $DO_{-74}^{-}(AAV8^{-}b6)^{-}$ reverse29840AAV8 $DO_{-75}^{-}(AAV8^{-}b4)^{-}$ forward $DO_{-74}^{-}(AAV8^{-}b6)^{-}$ reverse29841AAV9 $DO_{-90}^{-}(AAV2^{-}b1)^{-}$ forward $DO_{-76}^{-}(AAV9^{-}b1)^{-}$ reverse29842AAV9 $DO_{-77}^{-}(AAV9^{-}b2)^{-}$ forward $DO_{-78}^{-}(AAV9^{-}b3)^{-}$ reverse22044AAV9 $DO_{-79}^{-}(AAV9^{-}b4)^{-}$ forward $DO_{-82}^{-}(AAV9^{-}b4)^{-}$ preverse24245AAV9 $DO_{-79}^{-}(AAV9^{-}b4)^{-}$ forward $DO_{-82}^{-}(AAV9^{-}b4)^{-}$ preverse24246AAV9 $DO_{-79}^{-}(AAV9^{-}b4)^{-}$ forward $DO_{-82}^{-}(AAV9^{-}b4)^{-}$ preverse24245AAV9 $DO_{-81}^{-}(AAV9^{-}b6)^{-}$ forward DO_{-84}	31	AAV6	DO 60 (AAV6 b7) forward	DO 61 (AAV6 b7) reverse	211
33AAV8 $DO_0 (AV2_b)$ forward $DO_63 (AAV8_b)$ reverse78434AAV8 $DO_64 (AAV2_b)$ forward $DO_65 (AAV8_b)$ reverse50035AAV8 $DO_66 (AAV8_b3)$ forward $DO_65 (AAV8_b3)$ reverse22036AAV8 $DO_68 (AAV8_b4)$ forward $DO_69 (AAV8_b4)$ reverse24237AAV8 $DO_56 (AAV8_b5)$ forward $DO_70 (AAV8_b5)$ reverse22238AAV8 $DO_71 (AAV8_b6)$ forward $DO_72 (AAV8_b6)$ reverse21140AAV8 $DO_73 (AAV8_b7)$ forward $DO_74 (AAV8_b7)$ reverse29841AAV9 $DO_90 (AAV2_b1)$ forward $DO_76 (AAV9_b1)$ reverse29842AAV9 $DO_97 (AAV9_b2)$ forward $DO_78 (AAV9_b1)$ reverse24243AAV9 $DO_79 (AAV9_b4)$ forward $DO_78 (AAV9_b3)$ reverse21044AAV9 $DO_79 (AAV9_b4)$ forward $DO_80 (AAV9_b4)$ reverse21945AAV9 $DO_81 (AAV9_b4)$ forward $DO_84 (AAV9_b6)$ reverse21946AAV9 $DO_81 (AAV9_b6)$ forward $DO_84 (AAV9_b6)$ reverse21947AAV9 $DO_81 (AAV9_b6)$ forward $DO_84 (AAV9_b6)$ reverse21148AAV9 $DO_85 (AAV9_b7)$ forward $DO_84 (AAV9_b6)$ reverse219	32	AAV6	DO 62 (AAV6 b8) forward	DO 19 (AAV2 b8) reverse	298
34 AAV8DD_64_(AAV8_b2)_forwardDD_65_(AAV8_b2)_reverse500 35 AAV8DD_66_(AAV8_b3)_forwardDD_67_(AAV8_b3)_reverse220 36 AAV8DD_68_(AAV8_b4)_forwardDD_69_(AAV8_b4)_reverse242 37 AAV8DD_56_(AAV6_b5)_forwardDD_70_(AAV8_b5)_reverse222 38 AAV8DD_71_(AAV8_b6)_forwardDD_72_(AAV8_b6)_reverse433 39 AAV8DD_73_(AAV8_b7)_forwardDD_74_(AAV8_b7)_reverse298 40 AAV8DD_75_(AAV8_b8)_forwardDD_19_(AAV2_b8)_reverse298 41 AAV9DD_00_4_(AAV2_b1)_forwardDD_76_(AAV9_b1)_reverse787 42 AAV9DD_77_(AAV9_b2)_forwardDD_78_(AAV9_b3)_reverse220 44 AAV9DD_79_(AAV9_b4)_forwardDD_80_(AAV2_b4)_reverse242 45 AAV9DD_79_(AAV9_b4)_forwardDD_80_(AAV9_b4)_reverse242 46 AAV9DD_81_(AAV9_b5)_forwardDD_84_(AAV9_b6)_reverse211 46 AAV9DD_81_(AAV9_b6)_forwardDD_84_(AAV9_b6)_reverse213 47 AAV9DD_81_(AAV9_b6)_forwardDD_84_(AAV9_b6)_reverse213 48 AAV9DD_85_(AAV9_b8)_forwardDD_84_(AAV4_b8)_reverse214	33	AAV8	DO 04 (AAV2 b1) forward	DO 63 (AAV8 b1) reverse	784
35AAV8DC 66 (AAV8 b3) forwardDC 67 (AAV8 b3) reverse22036AAV8DD 68 (AAV8 b4) forwardDD 69 (AAV8 b4) reverse24237AAV8DD 56 (AAV6 b5) forwardDD 70 (AAV8 b4) reverse22238AAV8DD 71 (AAV8 b6) forwardDD 72 (AAV8 b5) reverse22239AAV8DD 73 (AAV8 b7) forwardDD 74 (AAV8 b6) reverse43339AAV8DD 75 (AAV8 b7) forwardDD 74 (AAV8 b7) reverse29840AAV8DD 75 (AAV8 b8) forwardDD 19 (AAV2 b8) reverse29841AAV9DD 04 (AAV2 b1) forwardDD 76 (AAV9 b1) reverse78742AAV9DD 277 (AAV9 b2) forwardDD 71 (AAV6 b2) reverse49143AAV9DD 08 (AAV2 b3) forwardDD 78 (AAV9 b4) reverse22044AAV9DD 79 (AAV9 b4) forwardDD 82 (AAV9 b4) reverse24245AAV9DD 81 (AAV9 b5) forwardDD 84 (AAV9 b6) reverse21146AAV9DD 83 (AAV9 b6) forwardDD 84 (AAV9 b6) reverse21148AAV9DD 87 (AAV9 b8) forwardDO 86 (AAV4 b8) reverse211	34	AAV8	DO 64 (AAV8 b2) forward	DO 65 (AAV8 b2) reverse	500
36 AAV8DO_68 (AAV8_b4) forwardDO_69 (AAV8_b4) reverse242 37 AAV8DO_56 (AAV6_b5) forwardDO_70 (AAV8_b5) reverse222 38 AAV8DO_71 (AAV8_b6) forwardDO_72 (AAV8_b5) reverse433 39 AAV8DO_73 (AAV8_b7) forwardDO_74 (AAV8_b7) reverse211 40 AAV8DO_75 (AAV8_b8) forwardDO_19 (AAV2_b8) reverse298 41 AAV9DO_04 (AAV2_b1) forwardDO_76 (AAV9_b1) reverse787 42 AAV9DO_77 (AAV9_b2) forwardDO_78 (AAV9_b3) reverse220 44 AAV9DO_98 (AAV2_b3) forwardDO_78 (AAV9_b4) reverse221 45 AAV9DO_79 (AAV9_b4) forwardDO_82 (AAV9_b4) reverse242 46 AAV9DO_81 (AAV9_b5) forwardDO_82 (AAV9_b5) reverse219 46 AAV9DO 83 (AAV9 b6) forwardDO 84 (AAV9_b6) reverse433 47 AAV9DO 83 (AAV9_b7) forwardDO 84 (AAV4_b8) reverse211 48 AAV9DO 87 (AAV9_b8) forwardDO 84 (AAV4_b8) reverse219	35	AAV8	DO 66 (AAV8 b3) forward	DO 67 (AAV8 b3) reverse	220
37 AAV8DO_56 (AAV6 b) forwardDO_70 (AAV8 b) reverse222 38 AAV8DO_71 (AAV8 b) forwardDO_72 (AAV8 b) reverse433 39 AAV8DO_73 (AAV8 b) forwardDO_74 (AAV8 b) reverse211 40 AAV8DO_75 (AAV8 b) forwardDO_19 (AAV2 b) reverse298 41 AAV9DO_04 (AAV2 b) forwardDO_76 (AAV9 b) reverse298 42 AAV9DO_77 (AAV9 b2) forwardDO_78 (AAV9 b1) reverse491 43 AAV9DO_98 (AAV2 b) forwardDO_78 (AAV9 b) reverse220 44 AAV9DO_99 (AAV9 b) forwardDO 80 (AAV9 b) reverse242 45 AAV9DO_81 (AAV9 b) forwardDO 82 (AAV9 b) reverse219 46 AAV9DO 81 (AAV9 b) forwardDO 82 (AAV9 b) reverse433 47 AAV9DO 83 (AAV9 b) forwardDO 84 (AAV9 b) reverse211 48 AAV9DO 87 (AAV9 b) forwardDO 84 (AAV4 b) reverse219	36	AAV8	DO 68 (AAV8 b4) forward	DO 69 (AAV8 b4) reverse	242
38 AAV8 DO_71_(AAV8_b6)_forward DO_72_(AAV8_b6)_reverse 433 39 AAV8 DO_73_(AAV8_b7)_forward DO_74_(AAV8_b7)_reverse 211 40 AAV8 DO_75_(AAV8_b8)_forward DO_19_(AAV2_b8)_reverse 298 41 AAV9 DO_04_(AAV2_b1)_forward DO_76_(AAV9_b1)_reverse 787 42 AAV9 DO_77_(AAV9_b2)_forward DO_71_(AAV6_b2)_reverse 491 43 AAV9 DO_08_(AAV2_b3)_forward DO_78_(AAV9_b3)_reverse 220 44 AAV9 DO_79_(AAV9_b4)_forward DO_80_(AAV9_b4)_reverse 242 45 AAV9 DO_81_(AAV9_b5)_forward DO_82_(AAV9_b5)_reverse 219 46 AAV9 DO_83_(AAV9_b6)_forward DO_84_(AAV9_b6)_reverse 433 47 AAV9 DO_85_(AAV9_b7)_forward DO_86_(AAV9_b7)_reverse 211 48 AAV9 DO_87_(AAV9_b8)_forward DO_84_(AAV4_b8)_reverse 221	37	AAV8	DO 56 (AAV6 b5) forward	DO 70 (AAV8 b5) reverse	222
39 AAV8 DO_73_(AAV8_b7)_forward DO_74_(AAV8_b7)_reverse 211 40 AAV8 DO_75_(AAV8_b8)_forward DO_19_(AAV2_b8)_reverse 298 41 AAV9 DO_04_(AAV2_b1)_forward DO_76_(AAV9_b1)_reverse 787 42 AAV9 DO_77_(AAV9_b2)_forward DO_71_(AAV9_b3)_reverse 491 43 AAV9 DO_08_(AAV2_b3)_forward DO_78_(AAV9_b3)_reverse 220 44 AAV9 DO_79_(AAV9_b4)_forward DO_80_(AAV9_b4)_reverse 242 45 AAV9 DO_79_(AAV9_b5)_forward DO_82_(AAV9_b5)_reverse 219 46 AAV9 DO_81_(AAV9_b5)_forward DO_82_(AAV9_b5)_reverse 433 47 AAV9 DO_85_(AAV9_b7)_forward DO_86_(AAV9_b7)_reverse 211 48 AAV9 DO_87_(AAV9_b8)_forward DO_84_(AAV4_b8)_reverse 298	38	AAV8	DO 71 (AAV8 b6) forward	DO 72 (AAV8 b6) reverse	433
40 AAV8 DO_75_(AAV8_b8)_forward DO_19_(AAV2_b8)_reverse 298 41 AAV9 DO_04_(AAV2_b1)_forward DO_76_(AAV9_b1)_reverse 787 42 AAV9 DO_77_(AAV9_b2)_forward DO_51_(AAV6_b2)_reverse 491 43 AAV9 DO_08_(AAV2_b3)_forward DO_78_(AAV9_b3)_reverse 220 44 AAV9 DO_79_(AAV9_b4)_forward DO_80_(AAV9_b4)_reverse 242 45 AAV9 DO_79_(AAV9_b4)_forward DO_80_(AAV9_b4)_reverse 219 46 AAV9 DO_81_(AAV9_b5)_forward DO_84_(AAV9_b6)_reverse 433 47 AAV9 DO_85_(AAV9_b7)_forward DO_86_(AAV9_b7)_reverse 211 48 AAV9 DO_87_(AAV9_b8)_forward DO_34_(AAV4_b8)_reverse 298	39	AAV8	DO 73 (AAV8 b7) forward	DO 74 (AAV8 b7) reverse	211
41 AAV9 DO_04_(AAV2_b1)_forward DO_76_(AAV9_b1)_reverse 787 42 AAV9 DO_77_(AAV9_b2)_forward DO_51_(AAV6_b2)_reverse 491 43 AAV9 DO_08_(AAV2_b3)_forward DO_78_(AAV9_b3)_reverse 220 44 AAV9 DO_79_(AAV9_b4)_forward DO_80_(AAV9_b4)_reverse 242 45 AAV9 DO_81_(AAV9_b4)_forward DO_82_(AAV9_b5)_reverse 219 46 AAV9 DO_83_(AAV9_b6)_forward DO_84_(AAV9_b6)_reverse 433 47 AAV9 DO_85_(AAV9_b7)_forward DO_86_6(AAV9_b7)_reverse 211 48 AAV9 DO_87_(AAV9_b8)_forward DO_34_(AAV4_b8)_reverse 298	40	AAV8	DO 75 (AAV8 b8) forward	DO 19 (AAV2 b8) reverse	298
42 AAV9 DO 77 (AAV9 b2) forward DO 51 (AAV6 b2) reverse 491 43 AAV9 DO 08 (AAV2 b3) forward DO 78 (AAV9 b3) reverse 220 44 AAV9 DO 79 (AAV9 b4) forward DO 80 (AAV9 b4) reverse 242 45 AAV9 DO 81 (AAV9 b5) forward DO 82 (AAV9 b5) reverse 219 46 AAV9 DO 83 (AAV9 b6) forward DO 84 (AAV9 b6) reverse 433 47 AAV9 DO 85 (AAV9 b7) forward DO 86 (AAV9 b7) reverse 211 48 AAV9 DO 87 (AAV9 b8) forward DO 34 (AAV4 b8) reverse 298	41	AAV9	DO 04 (AAV2 b1) forward	DO 76 (AAV9 b1) reverse	787
43 AAV9 DO_08 (AAV2 b3) forward DO_78 (AAV9 b3) reverse 220 44 AAV9 DO_79 (AAV9 b4) forward DO_80 (AAV9 b4) reverse 242 45 AAV9 DO_81 (AAV9 b5) forward DO 82 (AAV9 b5) reverse 219 46 AAV9 DO_83 (AAV9 b6) forward DO 84 (AAV9 b6) reverse 433 47 AAV9 DO_85 (AAV9 b7) forward DO 86 (AAV9 b7) reverse 211 48 AAV9 DO_87 (AAV9 b8) forward DO_34 (AAV4 b8) reverse 298	42	AAV9	DO 77 (AAV9 b2) forward	DO 51 (AAV6 b2) reverse	491
44 AAV9 DO 79 (AAV9 b4) forward DO 80 (AAV9 b4) reverse 242 45 AAV9 DO 81 (AAV9 b5) forward DO 82 (AAV9 b5) reverse 219 46 AAV9 DO 83 (AAV9 b6) forward DO 84 (AAV9 b6) reverse 433 47 AAV9 DO 85 (AAV9 b7) forward DO 86 (AAV9 b7) reverse 211 48 AAV9 DO 87 (AAV9 b8) forward DO 34 (AAV4 b8) reverse 298	43	AAV9	DO 08 (AAV2 b3) forward	DO 78 (AAV9 b3) reverse	220
45 AAV9 DO_81 (AAV9 b5) forward DO_82 (AAV9 b5) reverse 219 46 AAV9 DO_83 (AAV9 b6) forward DO_84 (AAV9 b6) reverse 433 47 AAV9 DO_85 (AAV9 b7) forward DO_86 (AAV9 b7) reverse 211 48 AAV9 DO_87 (AAV9 b8) forward DO_34 (AAV4 b8) reverse 298	44	AAV9	DO 79 (AAV9 b4) forward	DO 80 (AAV9 b4) reverse	242
46 AAV9 DO 83 (AAV9 b6) forward DO 84 (AAV9 b6) reverse 433 47 AAV9 DO 85 (AAV9 b7) forward DO 86 (AAV9 b7) reverse 211 48 AAV9 DO 87 (AAV9 b8) forward DO 34 (AAV4 b8) reverse 298	45	AAV9	DO 81 (AAV9 b5) forward	DO 82 (AAV9 b5) reverse	219
47 AAV9 DO 85 (AAV9 b7) forward DO 86 (AAV9 b7) reverse 211 48 AAV9 DO 87 (AAV9 b8) forward DO 34 (AAV4 b8) reverse 298	46	AAV9	DO 83 (AAV9 b6) forward	DO 84 (AAV9 b6) reverse	433
48 AAV9 DO_87_(AAV9_b8)_forward DO_34_(AAV4_b8)_reverse 298	47	AAV9	DO 85 (AAV9 b7) forward	DO 86 (AAV9 b7) reverse	211
	48	AAV9	DO_87_(AAV9_b8)_forward	DO_34_(AAV4_b8)_reverse	298

Table S4. PCR reactions for combinatorial golden gate cloning of the SCHEMA AAV library.

Table S5. Unique block junctures specified during primer design to ensure efficient golden gate assembly.

Block Identity	Overhang with Previous Block	Overhang with Next Block
(Vector_Backbone)	TTGC	ATAA
(AAV2_b1)	ATAA	GAAC
(AAV2_b2)	GAAC	GGGT
(AAV2_b3)	GGGT	CTTT
(AAV2 b4)	CTTT	CTAC
(AAV2 b5)	CTAC	AACT
(AAV2 b6)	AACT	AGAC
(AAV2 b7)	AGAC	TCAT
(AAV2 b8)	TCAT	TTGC
(AAV4 b1)	ATAA	GAAC
(AAV4 b2)	GAAC	GGGT
(AAV4 b3)	GGGT	CTTT
(AAV4 b4)	CTTT	CTAC
(AAV4 b5)	CTAC	AACT
(AAV4 b6)	AACT	AGAC
(AAV4 b7)	AGAC	TCAT
(AAV4 b8)	TCAT	TTGC
(AAV5 bl)	ATAA	GAAC
(AAV5_b2)	GAAC	GGGT
(AAV5_b3)	GGGT	CTTT
(AAV5 b4)	CTTT	CTAC
(AAV5_b5)	CTAC	AACT
(AAV5_b6)	AACT	AGAC
(AAV5_b7)	AGAC	TCAT
(AAV5_b8)	TCAT	TTGC
(AAV6_b1)	ATAA	GAAC
(AAV6_b2)	GAAC	GGGT
(AAV6_b3)	GGGT	CTTT
(AAV6_b4)	CTTT	CTAC
(AAV6_b5)	CTAC	AACT
(AAV6_b6)	AACT	AGAC
(AAV6_b7)	AGAC	TCAT
(AAV6_b8)	TCAT	TTGC
(AAV8_b1)	ATAA	GAAC
(AAV8_b2)	GAAC	GGGT
(AAV8_b3)	GGGT	CTTT
(AAV8_b4)	CTTT	CTAC
(AAV8_b5)	CTAC	AACT
(AAV8_b6)	AACT	AGAC
(AAV8_b7)	AGAC	TCAT
(AAV8_b8)	TCAT	TTGC
(AAV9_b1)	ATAA	GAAC
(AAV9_b2)	GAAC	GGGT
(AAV9_b3)	GGGT	CTTT
(AAV9_b4)	CTTT	CTAC
(AAV9_b5)	CTAC	AACT
(AAV9_b6)	AACT	AGAC
(AAV9_b7)	AGAC	TCAT
(AAV9_b8)	TCAT	TTGC