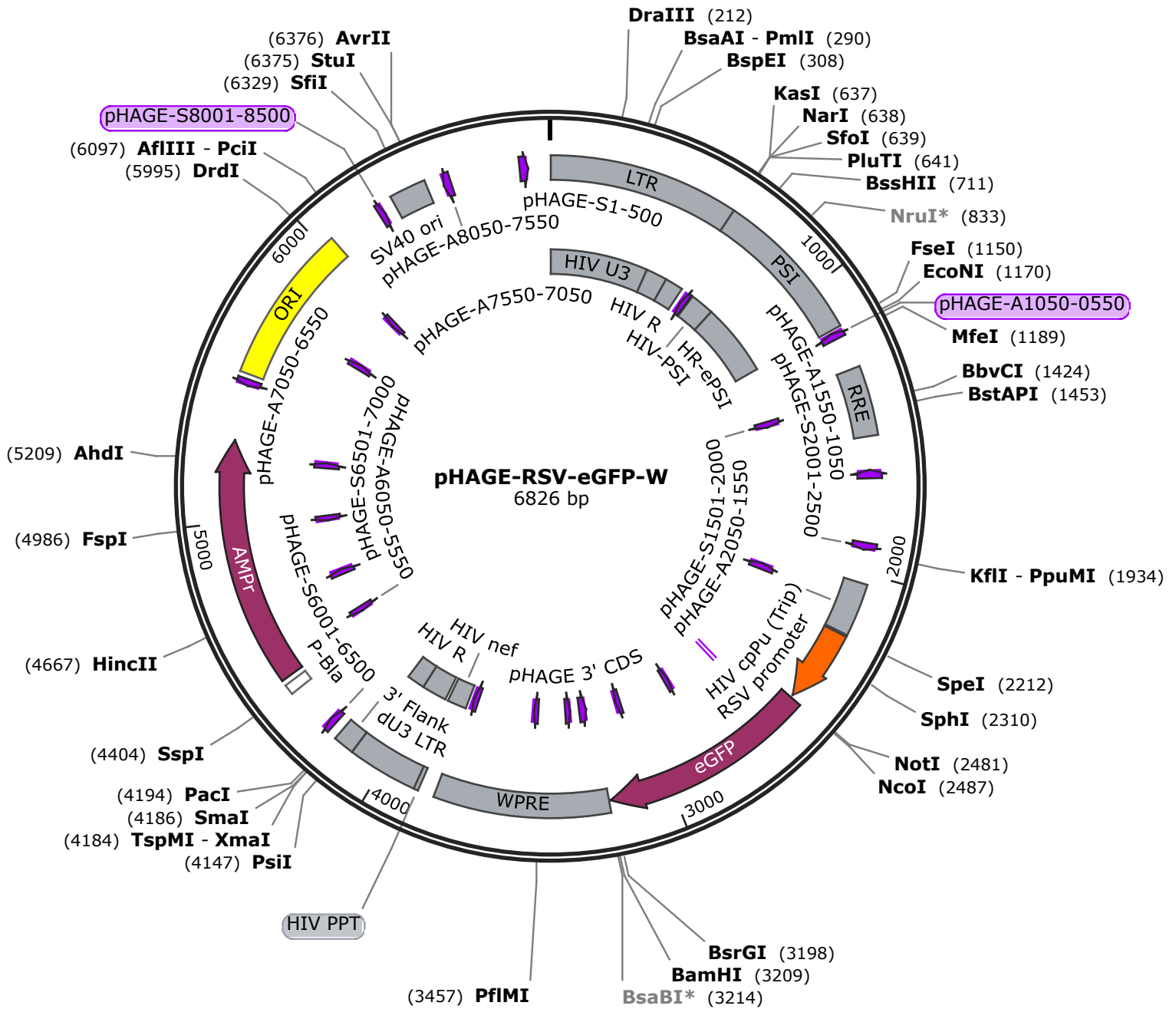


plasmid HIV Alex George Enhanced.



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55

LTR

HIV U3

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110

LTR

HIV U3

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165

LTR

HIV U3

pHAGE-A0050-8050

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220

LTR

HIV U3

DraIII

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275

LTR

HIV U3

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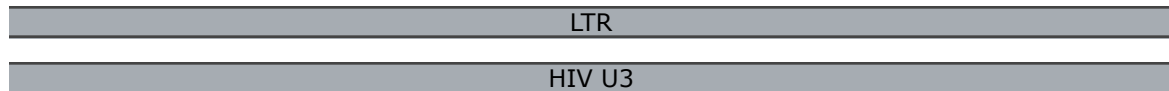
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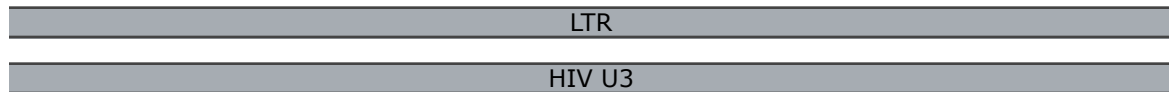
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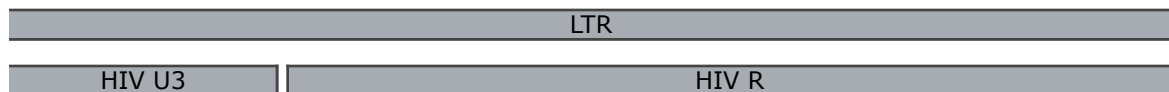
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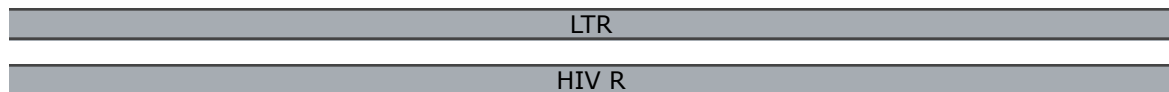
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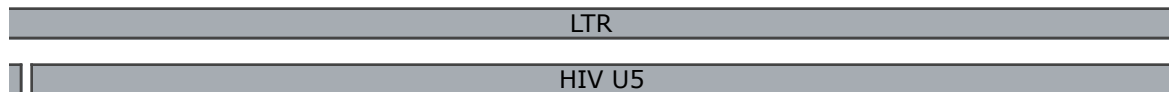
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HIV R



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BssHII

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HIV-PSI

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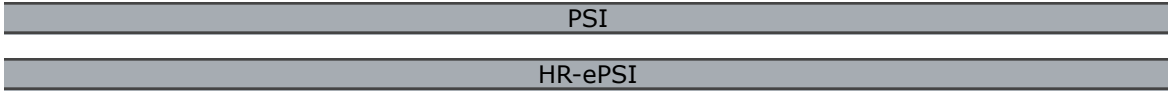
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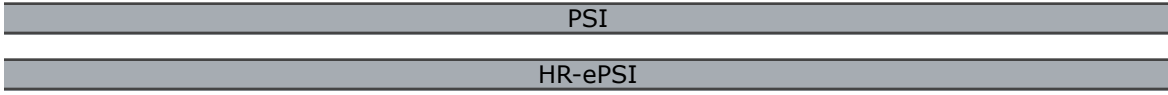


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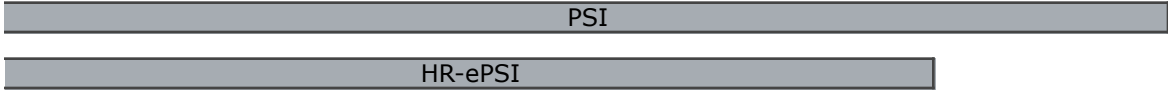


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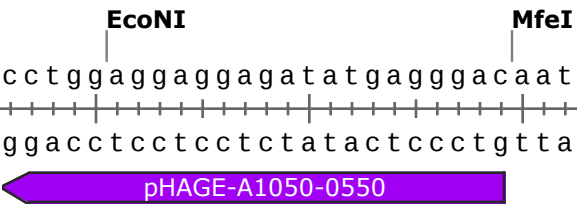


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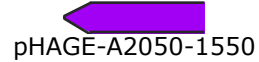
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 RSV promoter

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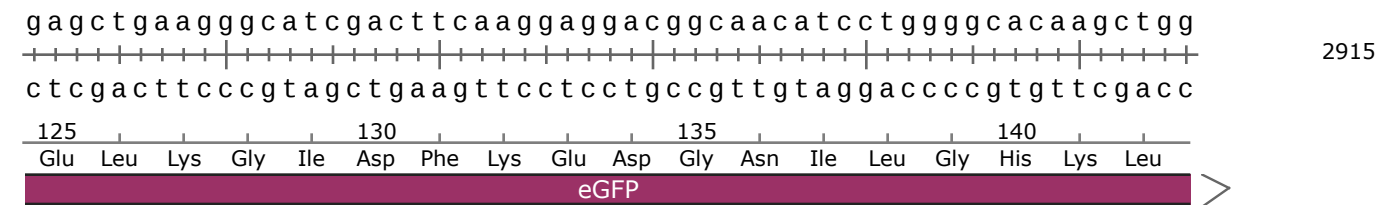
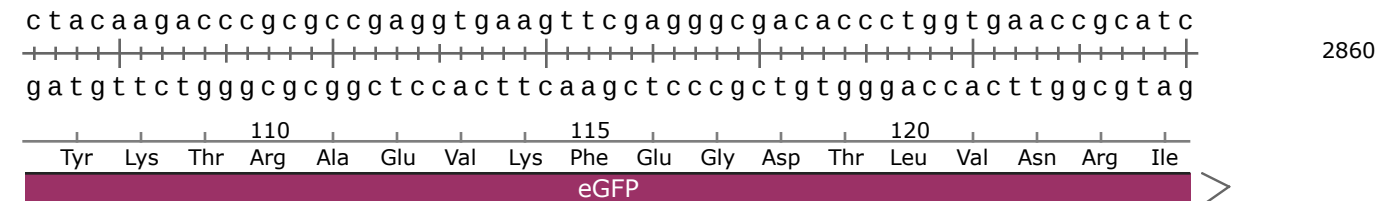
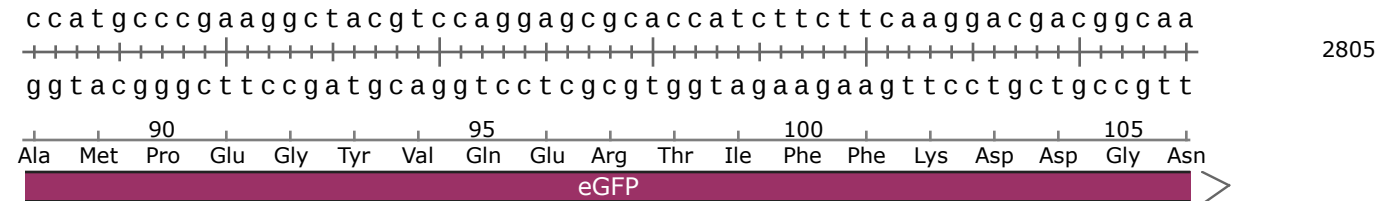
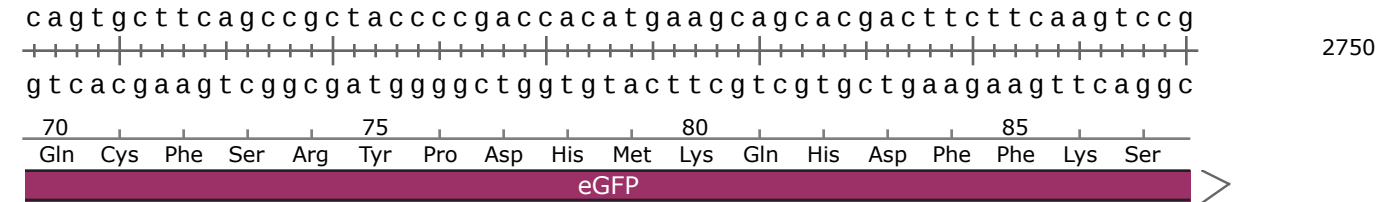
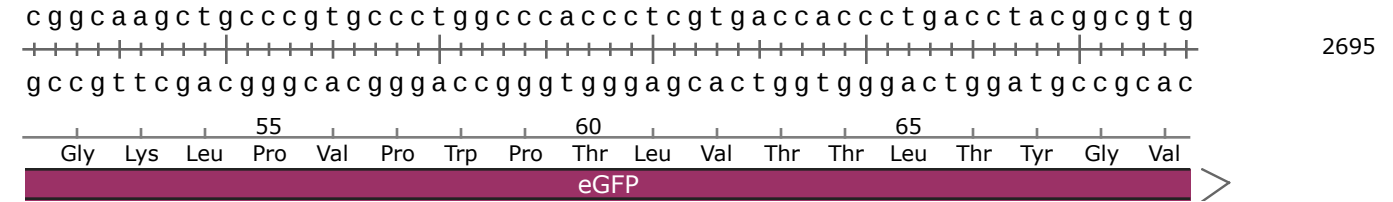
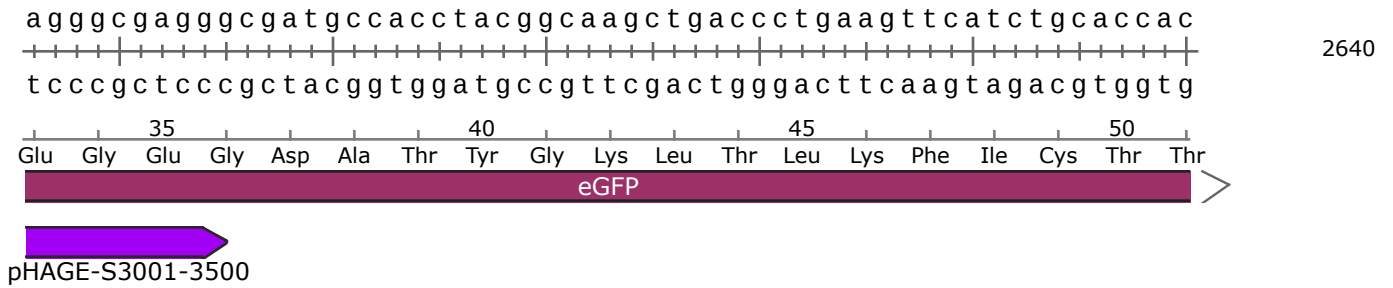
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 RSV promoter eGFP

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 HIV U5

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 3' Flank

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 AMPr

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 AMPr

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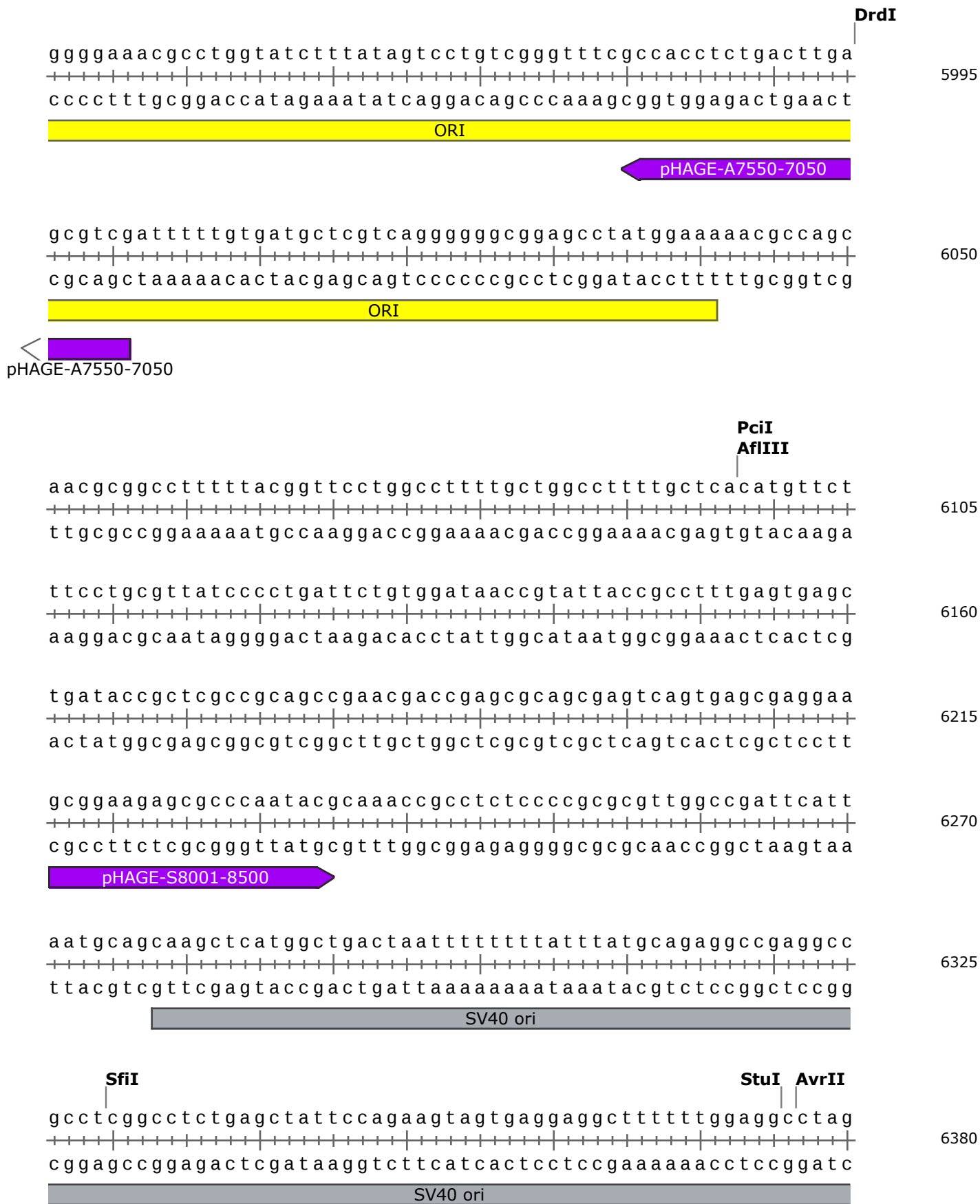
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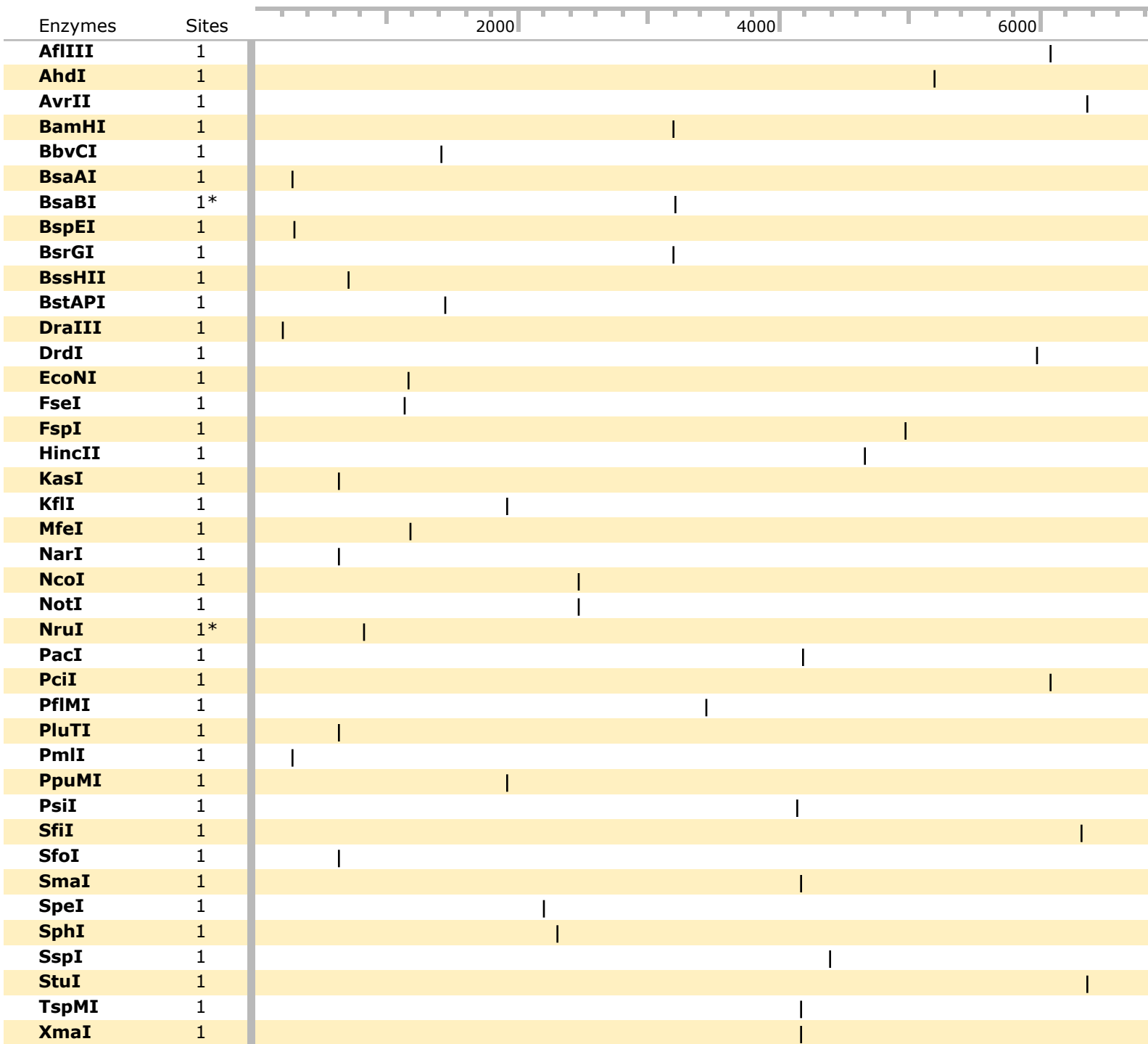
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





































































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





























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















Enzymes	Sites	
AflIII	1	6097
AhdI	1	5209
AvrII	1	6376
BamHI	1	3209
BbvCI	1	1424
BsaAI	1	290
BsaBI	1*	3214*
BspEI	1	308
BsrGI	1	3198
BssHII	1	711
BstAPI	1	1453
DraIII	1	212
DrdI	1	5995
EcoNI	1	1170
FseI	1	1150
FspI	1	4986
HincII	1	4667
KasI	1	637
KflI	1	1934
MfeI	1	1189
NarI	1	638
NcoI	1	2487
NotI	1	2481
NruI	1*	833*
PacI	1	4194
PciI	1	6097
PfIMI	1	3457
PluTI	1	641
PmlI	1	290
PpuMI	1	1934
PsiI	1	4147
SfiI	1	6329
SfoI	1	639
SmaI	1	4186
SpeI	1	2212
SphI	1	2310
SspI	1	4404
StuI	1	6375
TspMI	1	4184
XmaI	1	4184



Feature	Location	Size (bp)			Type
✓ LTR	1 .. 636	636			misc_feature
/gene	= LTR				
/note	= Long Terminal Repeat				
✓ HIV U3	1 .. 453	453			misc_feature
/note	= Full Length HIV U3				
✓ pHAGE-A0050-8050	158 .. 179	22			primer_bind
✓ pHAGE-S501-1000	401 .. 421	21			primer_bind
✓ HIV R	454 .. 551	98			misc_feature
/note	= HIV Repeat Region				
✓ HIV U5	552 .. 636	85			misc_feature
/note	= HIV U5				
✓ PBS-K	636 .. 658	23			misc_feature
/note	= tRNA binding site for Lysine tRNA				
✓ PSI	637 .. 1155	519			misc_feature
/gene	= psi				
/product	= pbs-gag				
/note	= PSI Packaging Sequence				
✓ pHAGE-A0550-0050	667 .. 690	24			primer_bind
✓ HIV-PSI	697 .. 806	110			misc_feature
✓ HR-ePSI	807 .. 1144	338			misc_feature
✓ pHAGE-S1001-1500	898 .. 919	22			primer_bind
✓ pHAGE-A1050-0550	1166 .. 1189	24			primer_bind
✓ RRE	1303 .. 1536	234			misc_feature
/gene	= rre				
/product	= minimal RRE				
/note	= Rev Responsive Element				
✓ pHAGE-S1501-2000	1391 .. 1417	27			primer_bind
✓ pHAGE-A1550-1050	1650 .. 1678	29			primer_bind

Feature	Location	Size (bp)			Type
✓ pHAGE-S2001-2500	1898 .. 1922	25			primer_bind
✓ HIV cpPu (Trip)	2034 .. 2211	178			misc_feature
/gene	= cppt				
/note	= Central Poly Purine Track				
✓ pHAGE-A2050-1550	2084 .. 2112	29			primer_bind
✓ RSV promoter	2218 .. 2479	262			promoter
/note	= Rous sarcoma virus enhancer/promoter				
✓ eGFP	2489 .. 3208	720			CDS
/gene	= eGFP				
/note	= Enhanced Green Fluorescent Protein (Mammalian Codon Optimized)				
/translation	= MVSKGEELFTGVVPIVELDGDVNGHKFSVSGEGEGDATYGKLT LKFICTTGKLPVPWPTLVTTTLTYGVQCFSRYPDI DFFKSAMPEGYVQERTIFFKDDGNYKTRAEVKFEGDTLVNRIELKGI DFKEDGNILGHKLEYNNSHNVYIMADKQK NFKIRHNIEDGSVQLADHYQQNTPIGDGPVLLPDNHYLSTQSALS KDPNEKRDMVLLLEFVTAAGITLGMDELYK*				
	239 amino acids = 26.9 kDa				
✓ pHAGE-S3001-3500	2578 .. 2595	18			primer_bind
✓ pHAGE-A3050-2550	2821 .. 2841	21			primer_bind
✓ pHAGE-S3501-4000	3076 .. 3097	22			primer_bind
✓ WPRE	3215 .. 3806	592			misc_feature
/gene	= WPRE				
/note	= Woodchuck Hepatitis Virus Posttranscriptional Regulatory Element				
✓ pHAGE 3' CDS	3243 .. 3277	35			primer_bind
✓ pHAGE-A3550-3050	3321 .. 3344	24			primer_bind
✓ pHAGE-S4001-4500	3474 .. 3494	21			primer_bind
✓ oligo #91 sequencing sense	3767 .. 3790	24			primer_bind
✓ pHAGE-A4050-3550	3802 .. 3824	23			primer_bind
✓ HIV nef	3812 .. 3900	89			misc_feature
/note	= HIV nef				
✓ HIV PPT	3862 .. 3876	15			misc_feature
/note	= Polypurine Tract (Not degraded by RNaseH so it can serve as a primer for + strand DNA synthesis dur life cycle)				

Feature	Location	Size (bp)			Type
✓ dU3 LTR	3877 .. 4112	236			misc_feature
/gene	= dU3 LTR				
/note	= Deleted U3 Long-Terminal Repeat				
✓ HIV R	3914 .. 4029	116			misc_feature
/note	= HIV Repeat Region				
✓ Difference from 5' LTR	3925 .. 3925	1			modified_base
/note	= This T is a C in the 5' LTR				
✓ HIV U5	4030 .. 4112	83			misc_feature
/note	= HIV U5				
✓ pHAGE-S4501-5000	4110 .. 4141	32			primer_bind
✓ 3' Flank	4113 .. 4183	71			misc_feature
/note	= Chromosomal 3' Flanking Sequence carried over from original HIV integration site				
✓ pHAGE-S6001-6500	4216 .. 4238	23			primer_bind
✓ P-Bla	4387 .. 4421	35			promoter
/note	= Beta Lactamase Promoter				
✓ AMPr	4440 .. 5279	840			CDS
/gene	= AMPr				
/product	= beta-lactamase (mature form)				
/note	= Ampicillin Resistance Gene				
/translation	= RVALIPFFAAAFCLP VF AHPETLVKVKDAEDQLGARVGYIELDLNSGKILESFRPEERFPMMSTFKVLLCGAVLSRVDAGC RIHYSQNDLVEYSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLLTTIGGPKELTAFLHNMGDHVTRLDRWEPELI DERDTTTPVAMATTLRKLTLGELLTLASRQQLIDWMEADK VAGPLLRSALPAGWFIADKSGAGERGSRGIIAALGPD VVIYTTGSQATMDERNRQIAEIGASLIKHW				
	280 amino acids = 30.8 kDa				
✓ pHAGE-A6050-5550	4489 .. 4512	24			primer_bind
✓ pHAGE-S6501-7000	4689 .. 4713	25			primer_bind
✓ pHAGE-A6550-6050	4958 .. 4981	24			primer_bind
✓ pHAGE-S7001-7500	5209 .. 5233	25			primer_bind
✓ pHAGE-A7050-6550	5469 .. 5490	22			primer_bind

Feature	Location	Size (bp)			Type
✓ ORI	5508 .. 6041	534			rep_origin
/gene	= ORI				
/note	= Bacterial Origin of Replication				
✓ pHAGE-S7501-8000	5713 .. 5737	25			primer_bind
✓ pHAGE-A7550-7050	5980 .. 6001	22			primer_bind
✓ pHAGE-S8001-8500	6216 .. 6235	20			primer_bind
✓ SV40 ori	6278 .. 6401	124			misc_feature
/gene	= SV40 ori				
✓ pHAGE-A8050-7550	6456 .. 6482	27			primer_bind
✓ pHAGE-S1-500	6721 .. 6749	29			primer_bind