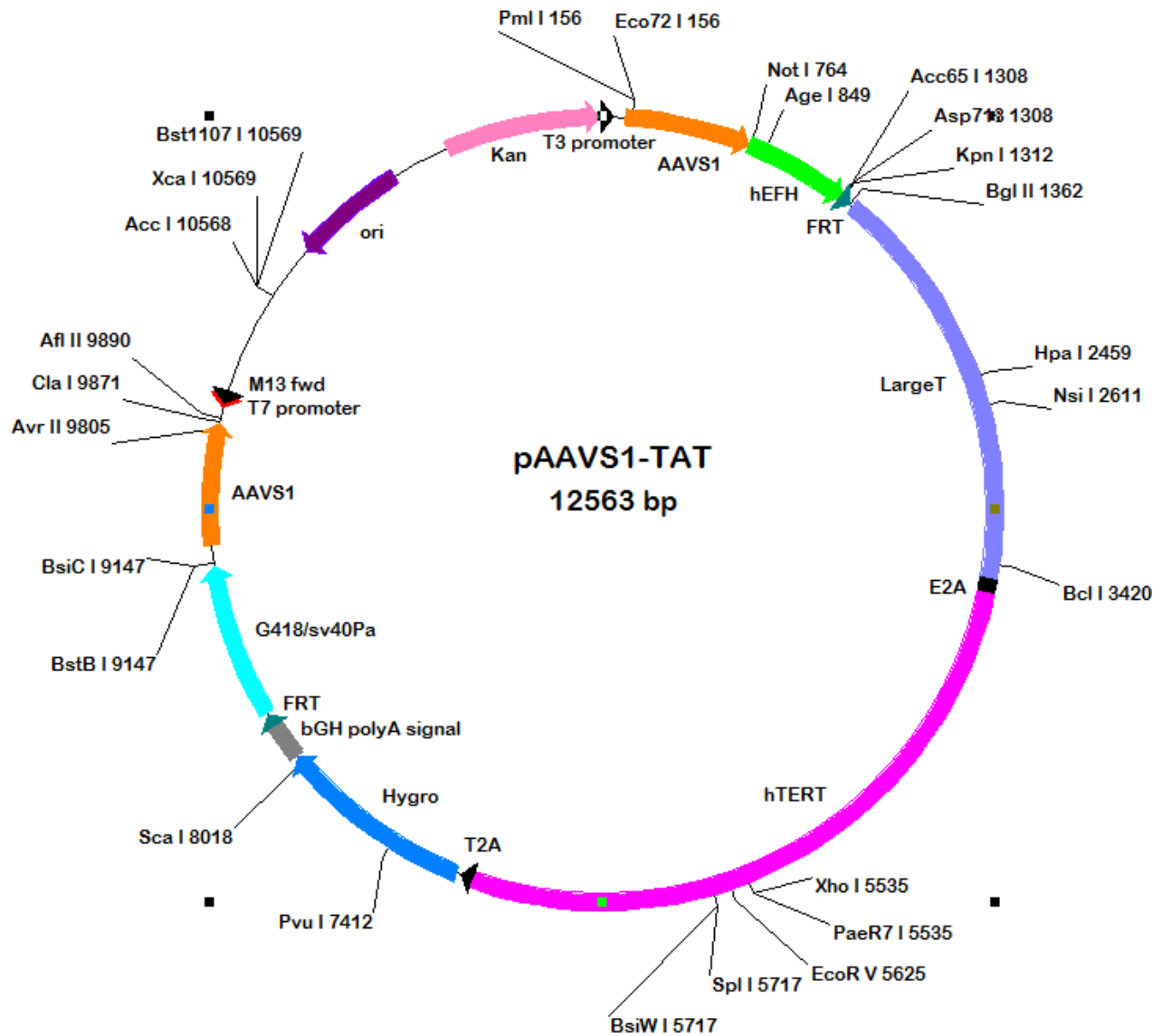


Vector: pAAVS1-TAT

Antibiotic Selection: Kan

Creator(s): Li Li & Xue Hu, Molecular Oncology Lab of The University of Chicago Medical Center

Date of Construction: May, 2016



pAAVS1-TAT Full-Length Sequence

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 Gaatt

Unique enzymes in pAAVS1-TAT:

			1100	1127	2421	3506
			3542	3574	3585	3624
Eco72 I	CAC GTG	156	3637	3654	3678	3692
Eml I	CAC GTG	156	3703	3711	3760	3767
Not I	GC`GGCC,GC	764	3770	3783	3842	3891
Age I	A`CCGG,T	849	3893	3963	3971	3996
Acc65 I	G`GTAC,C	1308	4082	4087	4090	4129
Asp718	G`GTAC,C	1308	4241	4311	4403	4470
Kpn I	G,GTAC`C	1312	4483	4503	4593	4698
Bgl II	A`GATC,T	1362	4710	4737	4810	4822
Hpa I	GTT AAC	2459	4876	4926	4965	5025
Nsi I	A,TGCA`T	2611	5112	5162	5364	5411
Bcl I	T`GATC,A	3420	5433	5460	5505	5574
PaeR7 I	C`TCGA,G	5535	5580	5661	5674	5677
Xho I	C`TCGA,G	5535	5819	5835	5923	6064
EcoR V	GAT ATC	5625	6133	6144	6270	6362
BsiW I	C`GTAC,G	5717	6453	6455	6504	6752
Spl I	C`GTAC,G	5717	6920	6966	6977	7067
Pvu I	CG,AT`CG	7412	7191	7256	7323	7373
Sca I	AGT ACT	8018	7393	7417	7439	7459
BsiC I	TT`CG,AA	9147	7636	7674	7684	7797
BstB I	TT`CG,AA	9147	7825	7827	7848	7977
Avr II	C`CTAG,G	9805	7987	8329	8374	8437
Cla I	AT`CG,AT	9871	8531	8595	8696	8699
Afl II	C`TTAA,G	9890	8939	8979	8984	9034
Acc I	GT`MK,AC	10568	9050	9076	9132	9191
Bst1107 I	GTA TAC	10569	9538	9828	10087	10090
Xca I	GTA TAC	10569	10101	10257	10273	10328
Number of enzymes = 26			10384	10469	10508	10518
			10560	10585	10623	10636

The following enzymes do not cut in pAAVS1-TAT:

			10662	10679	10722	10729
			10750	10841	10869	10996
Asc I	Fse I	Nru I	Sal I	Sfi I		
					11015	11136
					11246	11381
					11390	11709
					11788	11851
pAAVS1-TAT: sites sorted by name:					11945	12009
					12110	12113
					12353	12393
					12398	12448
					12464	12490
Aat II	(3)	5425	5993	7075		
Acc I	(1)	10568			Afl II	(1)
Acc65 I	(1)	1308			Afl III	(4)
Aci I	(158)	171	333	763	767	4354
		770	871	908	988	5780
		1044	1047	1062	1093	9245
						10796
					Age I	(1)
					Aha II	(14)
						1300
						3657
						4155
						4315
						5422
						5583
						5600
						5990

pAAVS1-TAT Vector

		6749	7072	8040	8465		11218	11424	11952	11994	
		9167	11879				12515				
Ahd I	(4)	6826	7029	11689	12549	Bbv II	(10)	577	1780	3292	3346
Alu I	(69)	9	31	64	495			3524	5986	6279	6304
		531	574	579	661			8256	12546		
		1001	1007	1011	1149	Bcl I	(1)	3420			
		1290	1413	1879	2033	Bcn I	(34)	201	600	601	1164
		2190	2413	2686	2716			3564	3701	4123	4201
		2757	2767	3807	3932			4226	4227	4346	4347
		4064	4101	4590	4613			4538	4852	4853	5589
		4755	4819	4920	5076			6382	6421	6893	6894
		5091	5235	5361	5370			6932	7041	7835	7951
		5685	5954	6126	6413			8470	8630	9483	9989
		6624	6813	6876	6888			10137	10443	10478	11177
		7014	7128	7160	7202			11884	12044		
		7587	7812	7877	7906	Bfa I	(22)	518	528	580	750
		8571	9029	9527	9576			857	1008	1134	1196
		9934	10321	10378	10389			1342	1426	1709	2087
		10438	10457	10738	10964			2444	2758	4139	8077
		11054	11100	11357	11985			8305	9290	9667	9806
		12443						11291	11544		
Alw I	(30)	169	180	640	651	Bgl I	(10)	4001	4117	4278	4323
		1278	2087	5182	6055			4634	5003	5454	5597
		6066	6574	7508	7826			6916	6931		
		7935	8321	8332	8643	Bgl II	(1)	1362			
		8710	8889	9419	9430	Blp I	(2)	405	575		
		9556	9997	11358	11444	Bpm I	(16)	102	623	2564	2831
		11444	11541	11542	12057			4771	4992	5331	5860
		12124	12303					6393	6409	6535	6934
AlwN I	(10)	2518	3732	3831	4679			7716	7770	9385	10325
		4943	5091	5636	6786	Bsa I	(5)	1152	4543	4648	5257
		9522	11212					5908			
Apa I	(7)	605	3668	3891	3901	BsaA I	(6)	156	5783	6837	8769
		4341	4489	5667				10550	12183		
ApaL I	(6)	6561	6990	7328	7630	BsaB I	(3)	2147	3425	9995	
		10612	11110			BsaH I	(14)	1300	3657	4155	4315
Apo I	(3)	116	2257	7291				5422	5583	5600	5990
Ase I	(2)	2000	2849					6749	7072	8040	8465
Asp718	(1)	1308						9167	11879		
Ava I	(12)	598	656	816	918	BsaJ I	(81)	87	399	560	598
		3815	3904	4224	4344			640	680	681	919
		4850	4882	5535	6891			1183	1376	1445	1781
Ava II	(23)	191	565	665	1419			2735	2943	3378	3660
		2653	3696	4144	4203			3668	3669	3745	3746
		4331	4360	5670	5808			3891	3905	4199	4208
		6224	6231	6383	6422			4209	4223	4224	4282
		6963	7456	7997	8981			4334	4344	4371	4463
		9634	10083	12395				4516	4517	4535	4678
Avr II	(1)	9805						4687	4850	4862	4863
BamH I	(5)	173	644	6059	8325			4883	4942	4992	5057
		9423						5058	5139	5140	5586
Ban I	(17)	777	852	1108	1299			5595	5666	5732	5804
		1308	3656	4986	5582			5823	6054	6227	6234
		5599	6748	7622	8133			6308	6309	6342	6355
		8464	8499	11637	11878			6386	6453	6743	6770
		11913						6846	6891	6892	6911
Ban II	(16)	576	605	1023	3668			7038	7400	7601	7756
		3891	3901	4341	4489			7825	8125	8628	8897
		4870	5008	5140	5667			9427	9805	10956	12042
		5956	6073	8830	12244			12311			
Bbe I	(7)	1303	3660	5586	5603	BsaW I	(11)	125	774	849	5297
		6752	8468	11882				7269	7806	7942	8496
Bbs I	(10)	576	1781	3293	3347			11002	11149	11910	
		3523	5985	6280	6305	BseR I	(14)	200	1529	1739	3568
		8257	12545					4248	4560	4783	4900
Bbv I	(33)	504	1422	2695	3626			4903	5197	5946	9271
		3699	3941	4599	4846			9610	9771		
		4929	4949	5370	5403	Bsg I	(9)	133	967	1865	3706
		6107	6633	6885	6934			4936	5188	5377	6415
		7137	7395	7788	7915			6799			
		8538	8580	9101	9585	BsiC I	(1)	9147			
		10398	10447	10544	11215	BsiE I	(13)	767	3760	5162	5464

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		7256	7391	7412	7421		9723	9975	10105	10129
		7991	8374	10712	11136		10544	10575	11203	11216
		11788					11330	11822	12023	
BsiHKA I	(16)	133	576	4793	5171	BsrB I	(12)	171	772	3971 4311
		5564	5956	6565	6994			5574	7439	7797 9078
		7332	7634	8578	8768			9132	10729	11711 12492
		10616	11114	11992	12182	BsrD I	(5)	2213	3039	3092 8698
BsiW I	(1)	5717						12112		
Bsm I	(2)	1668	6799			BsrG I	(2)	1550	2615	
BsmA I	(15)	323	399	1153	4544	BssH II	(4)	3576	3713	4037 8862
		4649	5258	5532	5861	BssS I	(6)	4648	7148	7627 9057
		5909	6444	7115	9297			10969	12471	
		9431	10440	11712		Bst1107 I	(1)	10569		
BsmB I	(5)	400	5533	5862	7116	BstB I	(1)	9147		
		10439				BstE II	(4)	95	466	3948 4824
BsmF I	(22)	315	638	678	709	BstN I	(59)	401	438	561 641
		767	798	3360	3709			682	1446	2123 2184
		3763	4189	4499	4517			2857	2945	3046 3295
		4534	4704	6160	6226			3661	3670	3733 3747
		6909	7965	8616	9148			3787	4075	4176 4210
		10069	12030					4284	4335	4518 4674
BsoF I	(149)	148	493	634	764			4680	4688	4864 4912
		767	770	988	1047			4944	4994	5010 5059
		1062	1093	1411	1880			5141	5191	5406 5596
		2348	2684	2687	3507			5617	5637	5668 5734
		3574	3588	3610	3615			6055	6229	6310 6357
		3634	3637	3655	3679			6388	6847	6913 6961
		3688	3704	3760	3770			8127	8852	9364 9428
		3823	3843	3877	3930			9565	9740	9818 10824
		3985	3988	3991	3996			10945	10958	12266
		4035	4065	4087	4090	BstU I	(52)	871	1040	1085 3497
		4109	4295	4470	4504			3506	3576	3578 3626
		4588	4591	4594	4738			3692	3713	3715 3842
		4756	4813	4820	4835			3847	3874	3893 3998
		4877	4918	4921	4938			4039	4241	4356 4446
		5025	5083	5118	5128			4483	4503	4771 5580
		5162	5236	5359	5362			5716	6208	6455 6671
		5392	5458	5461	5581			6968	6977	7069 7258
		5653	5677	5819	6088			7393	7504	7570 7636
		6096	6154	6255	6363			7785	7827	7987 8531
		6370	6456	6505	6589			8832	8864	9247 9538
		6619	6622	6752	6874			10328	10397	10399 10502
		6920	6923	6978	7126			10843	11424	11945 12246
		7203	7256	7384	7415	BstX I	(5)	4422	4517	4665 5000
		7418	7674	7777	7825			9186		
		7828	7904	7988	8374	BstY I	(19)	173	644	1282 1362
		8426	8437	8527	8532			2091	5186	6059 6578
		8569	8610	8697	8700			8325	8636	8882 9423
		8703	8939	9035	9076			9990	11437	11448 11534
		9090	9191	9528	9539			11546	12050	12296
		9571	9574	9828	10009	Bsu36 I	(5)	1056	4572	5032 6220
		10090	10387	10390	10436			9273		
		10533	10586	10702	10720	Cac8 I	(87)	354	529	1009 1023
		10723	10841	10996	11139			1044	1207	1235 1848
		11204	11207	11413	11788			2990	3578	3641 3676
		11840	11851	11941	11946			3715	3742	3838 3860
		11983	12024	12111	12114			3891	3925	4028 4032
		12117	12353	12449	12490			4039	4084	4216 4220
		12504						4254	4444	4474 4485
Bsp120 I	(7)	601	3664	3887	3897			4714	4810	4817 4930
		4337	4485	5663				4967	4971	4975 4981
Bsp1286 I	(4)	133	5171	8768	12182			5069	5110	5411 5560
BspH I	(3)	3417	11516	11713				5576	5663	5760 5791
BspM I	(14)	3944	4031	4401	4691			5923	5973	6338 6367
		4938	5915	6528	7361			6593	6756	7016 7020
		8352	8733	9183	9485			7373	7574	7634 7814
		11766	12147					7977	8085	8262 8266
BspM II	(4)	125	7269	7806	7942			8359	8545	8764 8830
Bsr I	(27)	884	905	2643	2776			8836	8864	8868 8909
		2813	3727	4637	4731			8913	8967	10013 10055
		5211	6049	6438	6988			10273	10727	10813 10850
		7533	7698	8408	8609			11410	11773	11959 12178

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		12244	12250	12278	12282		8610	9042	11343	12024
		12323	12327	12381			12456			
Cfr10 I	(15)	686	849	1073	1205	Eco72 I	(1)	156		
		1296	4837	4979	6336	EcoN I	(7)	860	1055	1508 2739
		6754	7018	7386	8784			5965	6219	6589
		8965	12198	12379		EcoO109 I	(18)	191	272	602 3393
Cla I	(1)	9871						3664	3665	3696 3887
Csp6 I	(27)	68	388	712	899			3897	3898	4203 4331
		1309	1551	2024	2250			4486	4676	5633 5670
		2265	2322	2616	2967			6224	6306	
		3120	4095	4542	4953	EcoR I	(2)	116	7291	
		5223	5688	5718	5784	EcoR II	(59)	399	436	559 639
		5883	6597	7964	8017			680	1444	2121 2182
		8770	10603	12184				2855	2943	3044 3293
Dde I	(42)	167	294	405	575			3659	3668	3731 3745
		1056	1150	1201	1619			3785	4073	4174 4208
		1692	1804	2901	3134			4282	4333	4516 4672
		3262	3345	3398	4115			4678	4686	4862 4910
		4301	4572	4609	4618			4942	4992	5008 5057
		5032	5239	5681	5926			5139	5189	5404 5594
		6220	6245	6856	6877			5615	5635	5666 5732
		6942	7426	8187	9128			6053	6227	6308 6355
		9273	9394	9488	9523			6386	6845	6911 6959
		9638	10066	10606	11071			8125	8850	9362 9426
		11480	11646					9563	9738	9816 10822
Dpn I	(38)	175	646	1284	1364			10943	10956	12264
		2093	2477	3422	5188	EcoR V	(1)	5625		
		6061	6580	7093	7226	Ehe I	(7)	1301	3658	5584 5601
		7411	7424	7514	7821			6750	8466	11880
		7941	8327	8638	8716					
		8797	8806	8884	9425	Esp I	(2)	405	575	
		9562	9992	11364	11439	Fnu4H I	(149)	148	493	634 764
		11450	11458	11536	11548			767	770	988 1047
		11653	12052	12130	12211			1062	1093	1411 1880
		12220	12298					2348	2684	2687 3507
DpnII	(38)	173	644	1282	1362			3574	3588	3610 3615
		2091	2475	3420	5186			3634	3637	3655 3679
		6059	6578	7091	7224			3688	3704	3760 3770
		7409	7422	7512	7819			3823	3843	3877 3930
		7939	8325	8636	8714			3985	3988	3991 3996
		8795	8804	8882	9423			4035	4065	4087 4090
		9560	9990	11362	11437			4109	4295	4470 4504
		11448	11456	11534	11546			4588	4591	4594 4738
		11651	12050	12128	12209			4756	4813	4820 4835
		12218	12296					4877	4918	4921 4938
Dra I	(14)	105	1145	1369	1391			5025	5083	5118 5128
		1481	2285	2603	2649			5162	5236	5359 5362
		2720	3035	3465	9879			5392	5458	5461 5581
		11555	11574					5653	5677	5819 6088
Dra III	(4)	156	6021	7336	7629			6096	6154	6255 6363
Drd I	(7)	7552	7933	8492	9541			6370	6456	6505 6589
		10491	10904	11906				6619	6622	6752 6874
Dsa I	(14)	87	1376	3891	4371			6920	6923	6978 7126
		4463	5804	5823	6342			7203	7256	7384 7415
		6453	7400	7756	7825			7418	7674	7777 7825
		8897	12311					7828	7904	7988 8374
Eae I	(25)	764	3641	3757	4504			8426	8437	8527 8532
		5159	5192	5461	6984			8569	8610	8697 8700
		7016	7253	7418	7671			8703	8939	9035 9076
		7988	8371	8545	8936			9090	9191	9528 9539
		8963	9188	9493	9825			9571	9574	9828 10009
		9973	11785	11959	12350			10090	10387	10390 10436
		12377						10533	10586	10702 10720
Eag I	(9)	764	3757	5159	5461			10723	10841	10996 11139
		7253	7418	7988	8371			11204	11207	11413 11788
		11785						11840	11851	11941 11946
Ear I	(11)	538	1756	5296	5344			11983	12024	12111 12114
		5989	8809	9019	9661			12117	12353	12449 12490
		10680	12223	12433				12504		
Eco47 III	(2)	4723	10052			Fok I	(42)	311	328	404 772
Eco57 I	(13)	601	1022	1344	1779			1052	1487	1624 2259
		2820	3819	6528	7029			2502	2550	2809 2893
								4175	4446	4479 4695

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		5425	5713	5716	5944			3929	3995	4039	4041
		6061	6184	6691	6741			4069	4108	4241	4294
		6943	7417	7790	8286			4434	4448	4639	4724
		8789	8814	9255	9480			4773	4979	5122	5132
		9840	9844	10017	10079			5580	5585	5602	5642
		10157	10343	10484	11655			5716	6026	6671	6751
		12203	12228					6970	6977	7207	7260
Fsp I	(6)	3613	3928	5131	6025			7504	7572	7787	7914
		8567	11981					7987	8459	8467	8531
Gdi II	(29)	763	765	3756	3758			8568	8834	8864	8866
		4505	5158	5160	5460			9094	9505	10053	10399
		5462	6985	7015	7252			10502	10532	10673	10706
		7254	7417	7419	7670			10976	11043	11143	11317
		7987	7989	8370	8372			11426	11873	11881	11945
		8935	8962	9187	9824			11982	12248	12508	
		9972	11784	11786	12349		HinC II	(2)	2459	7884	
		12376					Hind II	(2)	2459	7884	
Gsu I	(16)	101	624	2563	2830		HinD III	(2)	2188	2714	
		4770	4993	5330	5861		Hinf I	(35)	460	1080	1199 1402
		6394	6408	6536	6933			1623	1732	1815	2581
		7715	7769	9384	10324			2818	3343	3367	3558
Hae I	(22)	112	303	352	2992			4692	5333	5429	6138
		3643	3862	3910	4997			6816	6879	7030	7144
		5194	5842	5971	5981			7266	7466	7717	8950
		7399	8547	9278	9495			9084	9136	9333	9954
		9721	9886	10811	10822			10352	10696	10771	11167
		11274	11961					11684	12364	12498	
Hae II	(16)	148	1180	1303	3660		HinI I	(14)	1300	3657	4155 4315
		4109	4295	4640	4725			5422	5583	5600	5990
		5586	5603	6752	8468			6749	7072	8040	8465
		10054	10674	11044	11882			9167	11879		
Hae III	(94)	112	274	303	352		HinP I	(79)	145	797	869 1040
		603	686	746	766			1177	1272	1300	3497
		1061	1166	2992	3021			3504	3576	3578	3600
		3394	3566	3643	3666			3612	3657	3690	3713
		3724	3759	3814	3862			3715	3840	3845	3874
		3889	3899	3910	4086			3927	3993	4037	4039
		4120	4125	4174	4198			4067	4106	4239	4292
		4214	4281	4339	4469			4432	4446	4637	4722
		4487	4506	4596	4623			4771	4977	5120	5130
		4677	4740	4879	4969			5578	5583	5600	5640
		4997	5161	5194	5409			5714	6024	6669	6749
		5463	5521	5591	5615			6968	6975	7205	7258
		5635	5665	5818	5842			7502	7570	7785	7912
		5971	5981	6307	6340			7985	8457	8465	8529
		6347	6365	6688	6742			8566	8832	8862	8864
		6758	6775	6919	6986			9092	9503	10051	10397
		7018	7043	7255	7399			10500	10530	10671	10704
		7420	7448	7600	7673			10974	11041	11141	11315
		7755	7990	8373	8547			11424	11871	11879	11943
		8938	8965	9190	9278			11980	12246	12506	
		9495	9721	9827	9886		Hpa I	(1)	2459		
		9975	10271	10811	10822		Hpa II	(67)	126	199	599 687
		10840	11274	11787	11961			775	850	1074	1162
		12352	12379					1174	1206	1297	3512
Hga I	(28)	318	1113	3759	3963			3563	3700	4122	4199
		4145	4177	4322	4361			4225	4306	4345	4537
		4808	5516	5783	6470			4838	4851	4980	5158
		6661	6878	6908	7099			5298	5588	6337	6381
		7551	7790	7935	8047			6420	6755	6892	6931
		9174	9543	9686	9791			6983	7019	7040	7270
		10333	10492	10906	11484			7387	7620	7807	7833
HgiA I	(16)	133	576	4793	5171			7943	7949	8370	8447
		5564	5956	6565	6994			8469	8497	8628	8718
		7332	7634	8578	8768			8785	8966	9482	9988
		10616	11114	11992	12182			10135	10442	10476	11003
HgiE II	(3)	8122	10614	11375				11150	11176	11366	11784
Hha I	(79)	147	799	871	1042			11861	11883	11911	12042
		1179	1274	1302	3499			12132	12199	12380	
		3506	3578	3580	3602		Hph I	(33)	106	210	355 461
		3614	3659	3692	3715			2947	3555	3907	3959
		3717	3842	3847	3876			4013	4383	4819	5524

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		5552	5897	6188	6193		5007	5040	5175	5345	
		6197	6272	6293	6436		5376	5510	5531	5543	
		6551	6823	7057	8644		5601	5612	5742	5883	
		9263	9356	9652	9764		5921	5961	5966	5991	
		9807	10417	10426	11533		6087	6202	6207	6228	
		12058					6229	6297	6384	6434	
Kas I	(7)	1299	3656	5582	5599		6464	6558	6591	6698	
		6748	8464	11878			6702	6765	6769	6776	
Kpn I	(1)	1312					6909	6950	7128	7165	
Mae I	(22)	518	528	580	750		7389	7596	7635	7695	
		857	1008	1134	1196		7722	7745	7793	8071	
		1342	1426	1709	2087		8113	8159	8234	8380	
		2444	2758	4139	8077		8516	8873	9065	9288	
		8305	9290	9667	9806		9291	9328	9400	9414	
		11291	11544				9425	9448	9519	9588	
Mae II	(30)	155	964	1247	3548		9698	9749	9752	9840	
		3646	3854	4010	4512		9896	10125	10183	10222	
		5095	5225	5269	5422		10402	10432	10694	10904	
		5483	5500	5782	5831		10977	11228	11628	11794	
		5855	5990	6044	6836		11930	12287	12479		
		7025	7072	7342	8581	Msc I	(5)	3643	5194	8547	9495
		8768	10123	10549	11499		11961				
		11995	12182			Mse I	(41)	39	104	691	1144
Mae III	(35)	95	466	1276	1292		1368	1390	1480	1670	
		1917	2193	2952	3544		1829	2000	2038	2054	
		3948	4366	4388	4824		2131	2147	2284	2294	
		5256	5706	6186	6514		2440	2458	2471	2602	
		6828	6851	7338	8585		2648	2719	2726	2849	
		8891	9252	9345	9472		2866	2891	3034	3112	
		10130	10153	10237	10450		3227	3464	9878	9891	
		10545	11152	11215	11331		10043	10263	10295	10577	
		11614	11999	12305			11502	11554	11559	11573	
Mbo I	(38)	173	644	1282	1362		11626				
		2091	2475	3420	5186	Msl I	(4)	8902	9184	9223	12316
		6059	6578	7091	7224	Msp I	(67)	126	199	599	687
		7409	7422	7512	7819		775	850	1074	1162	
		7939	8325	8636	8714		1174	1206	1297	3512	
		8795	8804	8882	9423		3563	3700	4122	4199	
		9560	9990	11362	11437		4225	4306	4345	4537	
		11448	11456	11534	11546		4838	4851	4980	5158	
		11651	12050	12128	12209		5298	5588	6337	6381	
		12218	12296				6420	6755	6892	6931	
Mbo II	(42)	526	549	577	580		6983	7019	7040	7270	
		1533	1544	1575	1707		7387	7620	7807	7833	
		1772	1785	2166	2541		7943	7949	8370	8447	
		3297	3327	3341	3351		8469	8497	8628	8718	
		3524	3860	4419	5111		8785	8966	9482	9988	
		5312	5360	5977	5986		10135	10442	10476	11003	
		6284	6309	6659	7152		11150	11176	11366	11784	
		7735	7738	8261	8825		11861	11883	11911	12042	
		9035	9117	9649	10668		12132	12199	12380		
		11457	11530	12239	12449	MspA1 I	(23)	1001	2686	3587	3639
		12531	12546				3893	4064	4092	4590	
Mlu I	(2)	4354	9245				4812	4920	5361	5925	
Mme I	(10)	333	617	1650	5355		6455	6876	7375	7684	
		6863	7057	7138	7672		7827	8571	10389	10508	
		11010	11194				11138	11383	11985		
Mnl I	(139)	53	65	173	186	Mun I	(2)	842	2657		
		203	220	224	345	Nae I	(7)	1207	4981	6338	6756
		421	430	480	522		7020	8967	12381		
		600	646	737	825	Nar I	(7)	1300	3657	5583	5600
		914	1009	1051	1105		6749	8465	11879		
		1121	1392	1468	1507	Nci I	(34)	200	599	600	1163
		1594	1668	1713	1759		3563	3700	4122	4200	
		2103	2157	2787	2806		4225	4226	4345	4346	
		3406	3413	3442	3481		4537	4851	4852	5588	
		3490	3502	3510	3517		6381	6420	6892	6893	
		3546	3621	3785	3821		6931	7040	7834	7950	
		3900	4188	4226	4229		8469	8629	9482	9988	
		4271	4419	4427	4572		10136	10442	10477	11176	
		4580	4607	4613	4637		11883	12043			
		4803	4878	4881	4884	Nco I	(6)	87	1376	5823	7400

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		8897	12311			9495	9721	9827	9886		
Nde I	(3)	2383	7498	10619		9975	10271	10811	10822		
NgoM I	(7)	1205	4979	6336	6754	10840	11274	11787	11961		
		7018	8965	12379		12352	12379				
Nhe I	(2)	527	1007			PflM I	(6)	1633	3732	4679	5146
Nla III	(46)	20	91	231	552			9363	9823		
		629	1380	1822	2143	Ple I	(7)	1088	1823	2826	6887
		2329	2613	2961	3339			7038	9962	11175	
		3355	3421	3542	5071	Pme I	(3)	105	1369	9879	
		5478	5827	5889	6009	Pml I	(1)	156			
		6117	6480	6614	7050	PpuM I	(6)	191	3696	4203	4331
		7404	7487	7522	8268			5670	6224		
		8339	8684	8870	8901	Psp1406 I	(3)	964	5500	10123	
		8927	9923	10143	10207	PspA I	(5)	598	4224	4344	4850
		10270	10435	10540	10800			6891			
		11520	11717	12098	12284	Pst I	(10)	2990	3827	5087	5912
		12315	12341					6097	6593	6623	7385
Nla IV	(77)	85	175	192	250			8518	9575		
		273	566	603	646	Pvu I	(1)	7412			
		666	745	779	854	Pvu II	(10)	1001	2686	4064	4590
		906	1110	1189	1301			4920	5361	6876	8571
		1310	3395	3510	3658			10389	11985		
		3665	3666	3667	3697	Rsa I	(27)	69	389	713	900
		3698	3888	3889	3898			1310	1552	2025	2251
		3899	3900	4058	4126			2266	2323	2617	2968
		4146	4180	4204	4205			3121	4096	4543	4954
		4332	4339	4487	4488			5224	5689	5719	5785
		4671	4741	4765	4880			5884	6598	7965	8018
		4988	5007	5137	5493			8771	10604	12185	
		5584	5601	5665	5672	Rsr II	(3)	7456	8981	12395	
		6061	6072	6226	6385	Sac I	(2)	576	5956		
		6741	6750	6981	7044	Sac II	(3)	3894	6456	7828	
		7624	7647	7831	7947	Sap I	(7)	538	8809	9019	9661
		8135	8327	8466	8501			10680	12223	12433	
		9368	9414	9425	10085	Sau3A I	(38)	173	644	1282	1362
		10828	10867	11639	11880			2091	2475	3420	5186
		11915						6059	6578	7091	7224
Not I	(1)	764						7409	7422	7512	7819
Nsi I	(1)	2611						7939	8325	8636	8714
Nsp7524 I	(12)	625	3538	5067	5885			8795	8804	8882	9423
		6476	6610	8264	8866			9560	9990	11362	11437
		10139	10431	10796	12280			11448	11456	11534	11546
NspB II	(23)	1001	2686	3587	3639			11651	12050	12128	12209
		3893	4064	4092	4590			12218	12296		
		4812	4920	5361	5925	Sau96 I	(71)	191	272	565	601
		6455	6876	7375	7684			602	665	684	744
		7827	8571	10389	10508			1164	1419	2653	3020
		11138	11383	11985				3393	3565	3664	3665
NspH I	(12)	629	3542	5071	5889			3696	3723	3813	3887
		6480	6614	8268	8870			3888	3897	3898	4084
		10143	10435	10800	12284			4119	4124	4144	4172
PaeR7 I	(1)	5535						4203	4212	4280	4331
Pal I	(94)	112	274	303	352			4337	4338	4360	4467
		603	686	746	766			4485	4486	4595	4622
		1061	1166	2992	3021			4676	4739	4878	4967
		3394	3566	3643	3666			5408	5519	5613	5633
		3724	3759	3814	3862			5663	5664	5670	5808
		3889	3899	3910	4086			6224	6231	6306	6339
		4120	4125	4174	4198			6383	6422	6740	6757
		4214	4281	4339	4469			6963	7042	7447	7456
		4487	4506	4596	4623			7598	7997	8981	9634
		4677	4740	4879	4969			10083	10270	12395	
		4997	5161	5194	5409	Sca I	(1)	8018			
		5463	5521	5591	5615	ScrF I	(93)	200	401	438	561
		5635	5665	5818	5842			599	600	641	682
		5971	5981	6307	6340			1163	1446	2123	2184
		6347	6365	6688	6742			2857	2945	3046	3295
		6758	6775	6919	6986			3563	3661	3670	3700
		7018	7043	7255	7399			3733	3747	3787	4075
		7420	7448	7600	7673			4122	4176	4200	4210
		7755	7990	8373	8547			4225	4226	4284	4335
		8938	8965	9190	9278			4345	4346	4518	4537

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		4674	4680	4688	4851		7144	7266	7466	7717	
		4852	4864	4912	4944		8950	9084	9333	10352	
		4994	5010	5059	5141		10771	12364	12498		
		5191	5406	5588	5596	Tsp45 I	(26) 95	466	1292	2952	
		5617	5637	5668	5734		3544	3948	4366	4388	
		6055	6229	6310	6357		4824	5256	5706	6186	
		6381	6388	6420	6847		6514	6828	6851	7338	
		6892	6893	6913	6931		8585	8891	9252	9345	
		6961	7040	7834	7950		9472	10237	10450	10545	
		8127	8469	8629	8852		11999	12305			
		9364	9428	9482	9565	Tth111 I	(6) 5482	7108	7552	8583	
		9740	9818	9988	10136		10543	11997			
		10442	10477	10824	10945	Tth111 II	(21) 619	1223	1836	2231	
		10958	11176	11883	12043		2477	2492	2541	2554	
		12266					2684	4569	4748	6119	
Sec I	(81)	87	399	560	598		6811	7268	8087	8901	
		640	680	681	919		10258	11385	11394	11424	
		1183	1376	1445	1781		12315				
		2735	2943	3378	3660	Vsp I	(2) 2000	2849			
		3668	3669	3745	3746	Xba I	(3) 1341	8304	9666		
		3891	3905	4199	4208	Xca I	(1) 10569				
		4209	4223	4224	4282	Xcm I	(2) 4514	9736			
		4334	4344	4371	4463	Xho I	(1) 5535				
		4516	4517	4535	4678	Xho II	(19) 173	644	1282	1362	
		4687	4850	4862	4863		2091	5186	6059	6578	
		4883	4942	4992	5057		8325	8636	8882	9423	
		5058	5139	5140	5586		9990	11437	11448	11534	
		5595	5666	5732	5804		11546	12050	12296		
		5823	6054	6227	6234	Xma I	(5) 598	4224	4344	4850	
		6308	6309	6342	6355		6891				
		6386	6453	6743	6770	Xma III	(9) 764	3757	5159	5461	
		6846	6891	6892	6911		7253	7418	7988	8371	
		7038	7400	7601	7756		11785				
		7825	8125	8628	8897	Xmn I	(2) 6214	10356			
		9427	9805	10956	12042						
		12311									
SfaN I	(45)	211	364	561	751						
		1033	1603	4154	4674	Aat II	G,ACGT`C	3	Acc I	GT`MK,AC	1
		5402	5770	5923	6034	Acc65 I	G`GTAC,C	1	Aci I	C`CG,C	158
		6324	7113	7257	7324	Afl II	C`TTAA,G	1	Afl III	A`CRYG,T	4
		7396	7581	7811	7891	Age I	A`CCGG,T	1	Aha II	GR`CG,YC	14
		7913	8183	8424	8679	Ahd I	GACNN,N`NNGTC	4	Alu I	AG CT	69
		8763	8827	8895	9102	Alw I	GGATC 8/9	30	AlwN I	CAG,NNN`CTG	10
		9459	9996	10004	10100	Apa I	G,GGCC`C	7	ApaL I	G`TGCA,C	6
		10178	10240	10463	10596	Apo I	R`AATT,Y	3	Asc I	GG`CGCG,CC	-
		10634	10672	10892	11838	Ase I	AT`TA,AT	2	Asp718	G`GTAC,C	1
		12093	12177	12241	12309	Ava I	C`YCGR,G	12	Ava II	G`GWC,C	23
		12516				Avr II	C`CTAG,G	1	BamH I	G`GATC,C	5
Sfc I	(15)	2510	2986	3823	5083	Ban I	G`GYRC,C	17	Ban II	G,RCY`C	16
		5908	6093	6293	6589	Bbe I	G,GGC`C	7	Bbs I	GAAGAC 8/12	10
		6619	7381	8514	9571	Bbv I	GCAGC 13/17	33	Bbv II	GAAGAC 7/11	10
		9947	11061	11252		Bcl I	T`GATC,A	1	Bcn I	CC,S`GG	34
Sma I	(5)	600	4226	4346	4852	Bfa I	C`TA,G	22	Bgl I	GCCN,NNN`NGGC	10
		6893				Bgl II	A`GATC,T	1	Blp I	GC`TNA,GC	2
Sph I	(4)	5071	8268	8870	12284	Bpm I	CTGGAG 22/20	16	Bsa I	GGTCTC 7/11	5
Spl I	(1)	5717				BsaA I	YAC GTR	6	BsaB I	GATNN NNATC	3
Ssp I	(4)	1455	1912	2065	2936	BsaH I	GR`CG,YC	14	BsaJ I	C`CNNG,G	81
Stu I	(7)	112	352	3910	4997	BsaW I	W`CCGG,W	11	BseI I	GAGGAG 16/14	14
		5842	9278	9886		Bsg I	GTGCAG 22/20	9	BsiC I	TT`CG,AA	1
Sty I	(12)	87	1183	1376	1781	BsiE I	CG,RY`CG	13	BsiHKA I	G,WGCW`C	16
		2735	3378	5823	6743	BsiW I	C`GTAC,G	1	Bsm I	GAATG,C 7	2
		7400	8897	9805	12311	BsmA I	GTCTC`/9	15	BsmB I	CGTCTC 7/11	5
Taq I	(30)	33	1014	1156	5231	BsmF I	GGGAC 15/19	22	BsoF I	GC`N,GC	149
		5536	5945	5987	6819	Bsp120 I	G`GGCC,C	7	Bsp1286 I	G,DGCH`C	4
		7079	7094	7103	7163	BspH I	T`CATG,A	3	BspM I	ACCTGC 10/14	14
		7580	7793	7895	7920	BspM II	T`CCGG,A	4	Bsr I	ACT,GG`	27
		8064	8578	8734	8758	BsrB I	GAG CGG	12	BsrD I	GCAATG, 8	5
		8794	8956	9147	9871	BsrG I	T`GTAC,A	2	BssH II	G`CGCG,C	4
		10896	11992	12148	12172	BssS I	C`TCGT,G	6	Bst1107 I	GTA TAC	1
		12208	12370			BstB I	TT`CG,AA	1	BstE II	G`GTNAC,C	4
Tfi I	(19)	460	1402	1623	2581	BstN I	CC`W,GG	59	BstU I	CG CG	52
		3367	3558	5333	6138	BstX I	CCAN,NNNN`NTGG	5	BstY I	R`GATC,Y	19

Site usage in pAAVS1-TAT:

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Bsu36 I	CC`TNA,GG	5	Cac8 I	GCN NGC	87	Nar I	GG`CG,CC	7	Nci I	CC`S,GG	34
Cfr10 I	R`CCGG,Y	15	Cla I	AT`CG,AT	1	Nco I	C`CATG,G	6	Nde I	CA`TA,TG	3
Csp6 I	G`TA,C	27	Dde I	C`TNA,G	42	NgoM I	G`CCGG,C	7	Nhe I	G`CTAG,C	2
Dpn I	GA TC	38	DpnII	`GATC,	38	Nla III	,CATG`	46	Nla IV	GGN NCC	77
Dra I	TTT AAA	14	Dra III	CAC,NNN`GTG	4	Not I	GC`GGCC,GC	1	Nru I	TCG CGA	-
Drd I	GACNN,NN`NNGTC	7	Dsa I	C`CRYG,G	14	Nsi I	A,TGCA`T	1	Nsp7524 I	R`CATG,Y	12
Eae I	Y`GGCC,R	25	Eag I	C`GGCC,G	9	NspB II	CMG CKG	23	NspH I	R,CATG`Y	12
Ear I	CTCTTC 7/10	11	Eco47 III	AGC GCT	2	PaeR7 I	C`TCGA,G	1	Pal I	GG CC	94
Eco57 I	CTGAAG 21/19	13	Eco72 I	CAC GTG	1	PflM I	CCAN,NNN`NTGG	6	Ple I	GAGTC 9/10	7
EcoN I	CCTNN`N,NNAGG	7	Eco109 I	RG`GNC,CY	18	Pme I	CTTT AAAC	3	Pml I	CAC GTG	1
EcoR I	G`AATT,C	2	EcoR II	`CCWGG,	59	PpuM I	RG`GWC,CY	6	Psp1406 I	AA`CG,TT	3
EcoR V	GAT ATC	1	Ehe I	GGC GCC	7	PspA I	C`CCGG,G	5	Pst I	C,TGCA`G	10
Esp I	GC`TNA,GC	2	Fnu4H I	GC`N,GC	149	Pvu I	CG,AT`CG	1	Pvu II	CAG CTG	10
Fok I	GGATG 14/18	42	Fse I	GG,CCGG`CC	-	Rsa I	GT AC	27	Rsr II	CG`GWC,CG	3
Fsp I	TGC GCA	6	Gdi II	`YGGC,CG	29	Sac I	G,AGCT`C	2	Sac II	CC,GC`GG	3
Gsu I	CTGGAG 21/19	16	Hae I	WGG CCW	22	Sal I	G`TCGA,C	-	Sap I	GCTCTTC 8/11	7
Hae II	R,GCGC`Y	16	Hae III	GG CC	94	Sau3A I	`GATC,	38	Sau96 I	G`GNC,C	71
Hga I	GACGC 9/14	28	HgiA I	G,WGCW`C	16	Sca I	AGT ACT	1	ScrF I	CC`N,GG	93
HgiE II	ACCNNNNNNGGT -1/133		Hha I	G,CG`C	79	Sec I	C`CNNG,G	81	SfaN I	GCATC 9/13	45
Hinc II	GTY RAC	2	Hind II	GTY RAC	2	Sfc I	C`TRYA,G	15	Sfi I	GGCCN,NNN`NGGCC	-
Hind III	A`AGCT,T	2	Hinf I	G`ANT,C	35	Sma I	CCC GGG	5	SnaB I	TAC GTA	-
HinI I	GR`CG,YC	14	HinP I	G`CG,C	79	Spe I	A`CTAG,T	-	Sph I	G,CATG`C	4
Hpa I	GTT AAC	1	Hpa II	C`CG,G	67	Spl I	C`GTAC,G	1	Srf I	GCCC GGCC	-
Hph I	GGTGA 12/11	33	Kas I	G`GCGC,C	7	Ssp I	AAT ATT	4	Stu I	AGG CCT	7
Kpn I	G,GTAC`C	1	Mae I	C`TA,G	22	Sty I	C`CWWG,G	12	Taq I	T`CG,A	30
Mae II	A`CG,T	30	Mae III	`GTNAC,	35	Tfi I	G`AWT,C	19	Tsp45 I	`GTSAC,	26
Mbo I	`GATC,	38	Mbo II	GAAGA 12/11	42	Tth111 I	GACN`N,NGTC	6	Tth111 II	CAARCA 16/14	21
Mlu I	A`CGCG,T	2	Mme I	TCCRAC 25/23	10	Vsp I	AT`TA,AT	2	Xba I	T`CTAG,A	3
Mnl I	CCTC 10/10	139	Msc I	TGG CCA	5	Xca I	GTA TAC	1	Xcm I	CCANNNN,N`NNNNTGG2	
Mse I	T`TA,A	41	Msl I	CAYNN NNRTG	4	Xho I	C`TCGA,G	1	Xho II	R`GATC,Y	19
Msp I	C`CG,G	67	MspA1 I	CMG CKG	23	Xma I	C`CCGG,G	5	Xma III	C`GGCC,G	9
Mun I	C`AATT,G	2	Nae I	GCC GGC	7						