

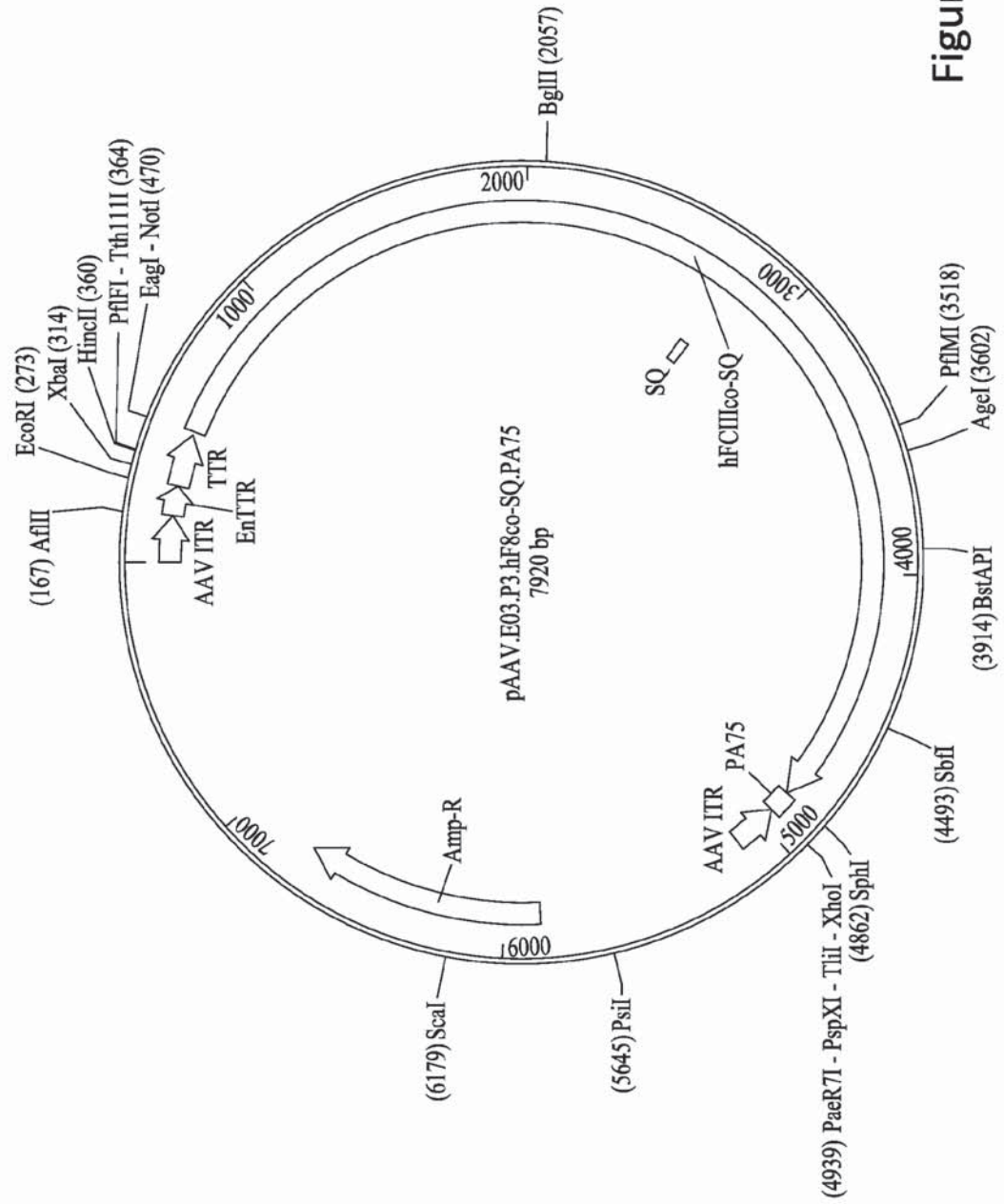


Figure 1



Figure 2

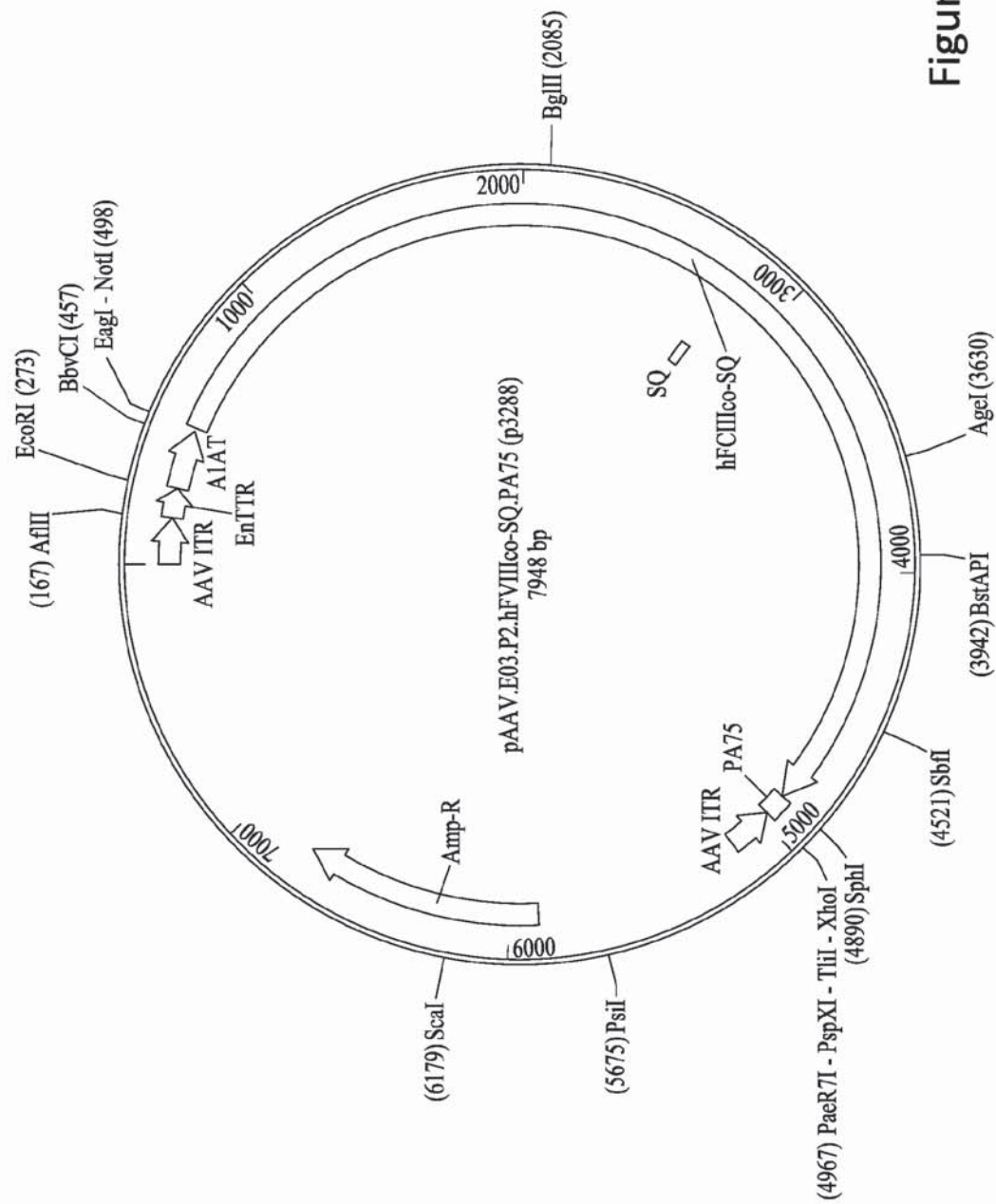


Figure 3

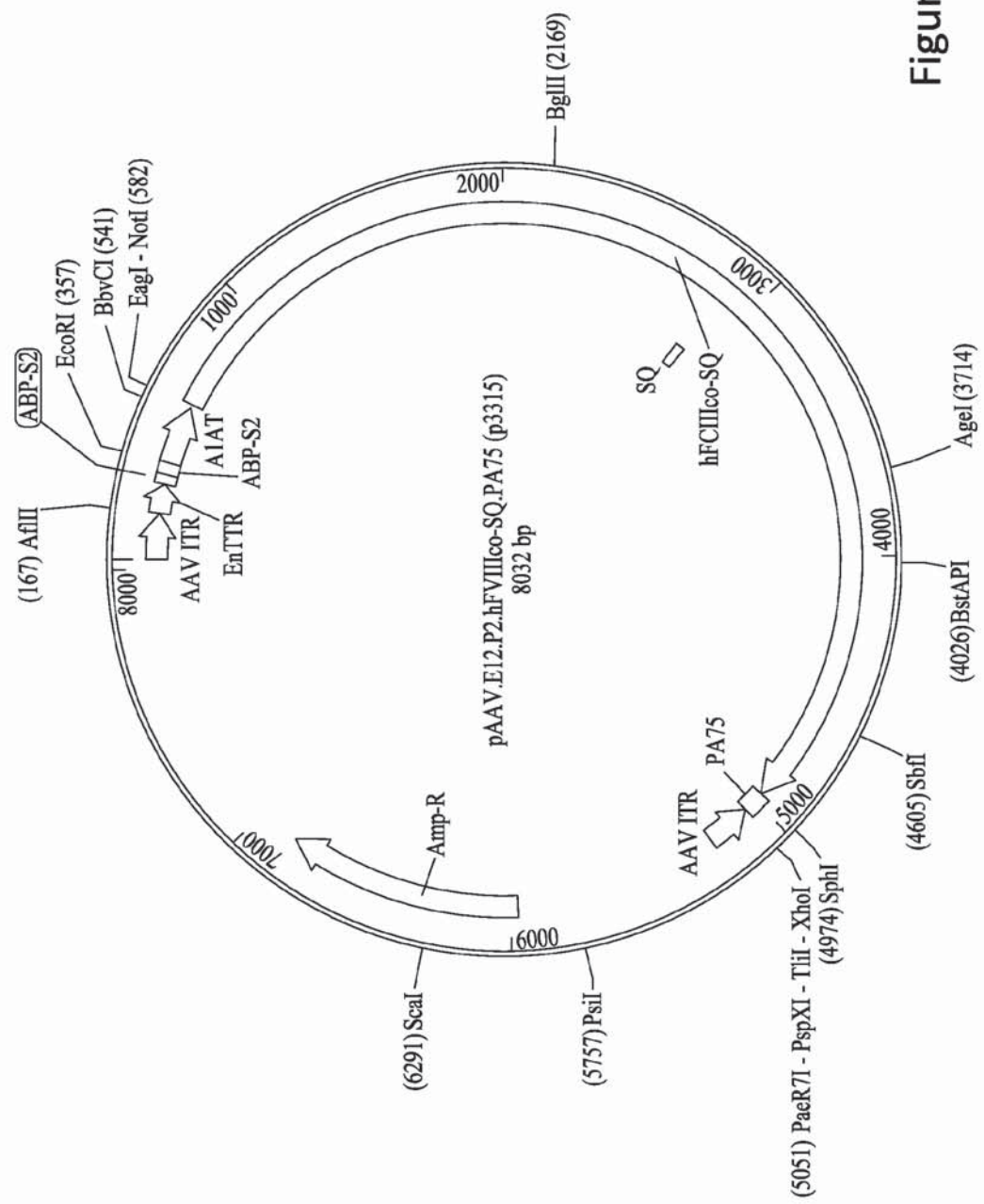


Figure 4

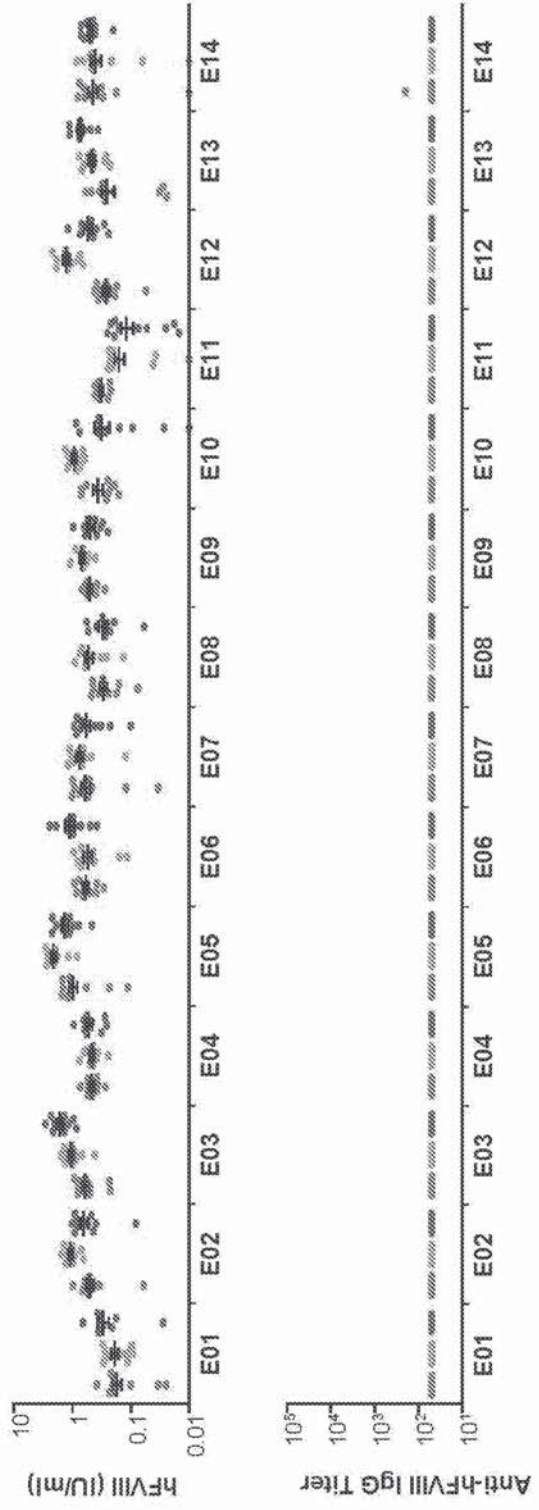


Figure 5

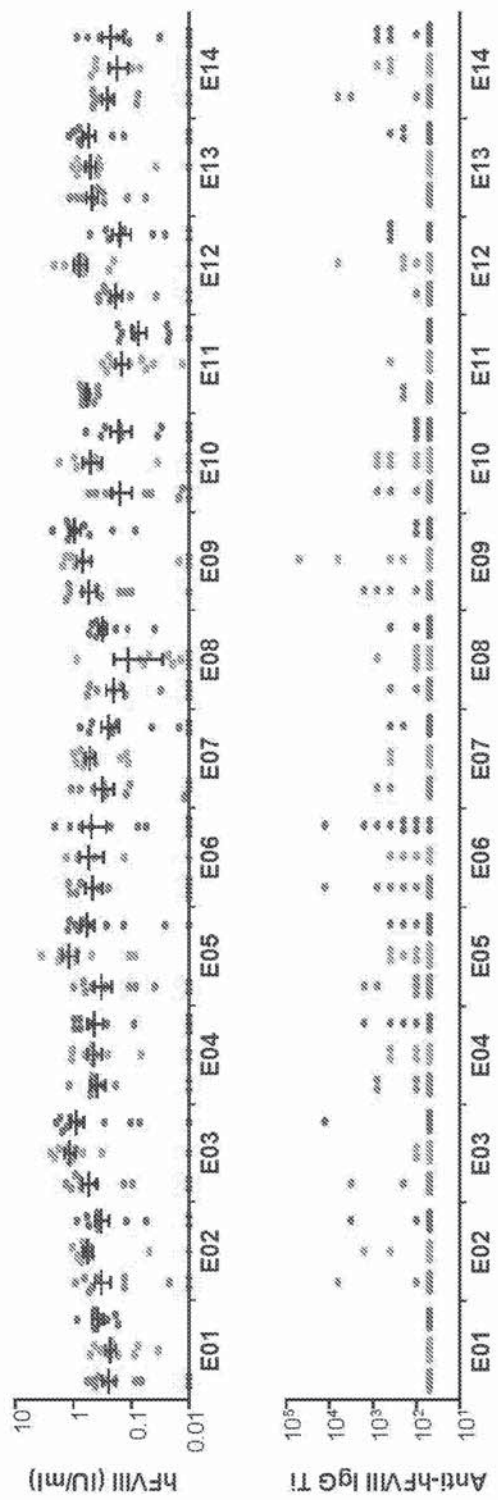


Figure 6.

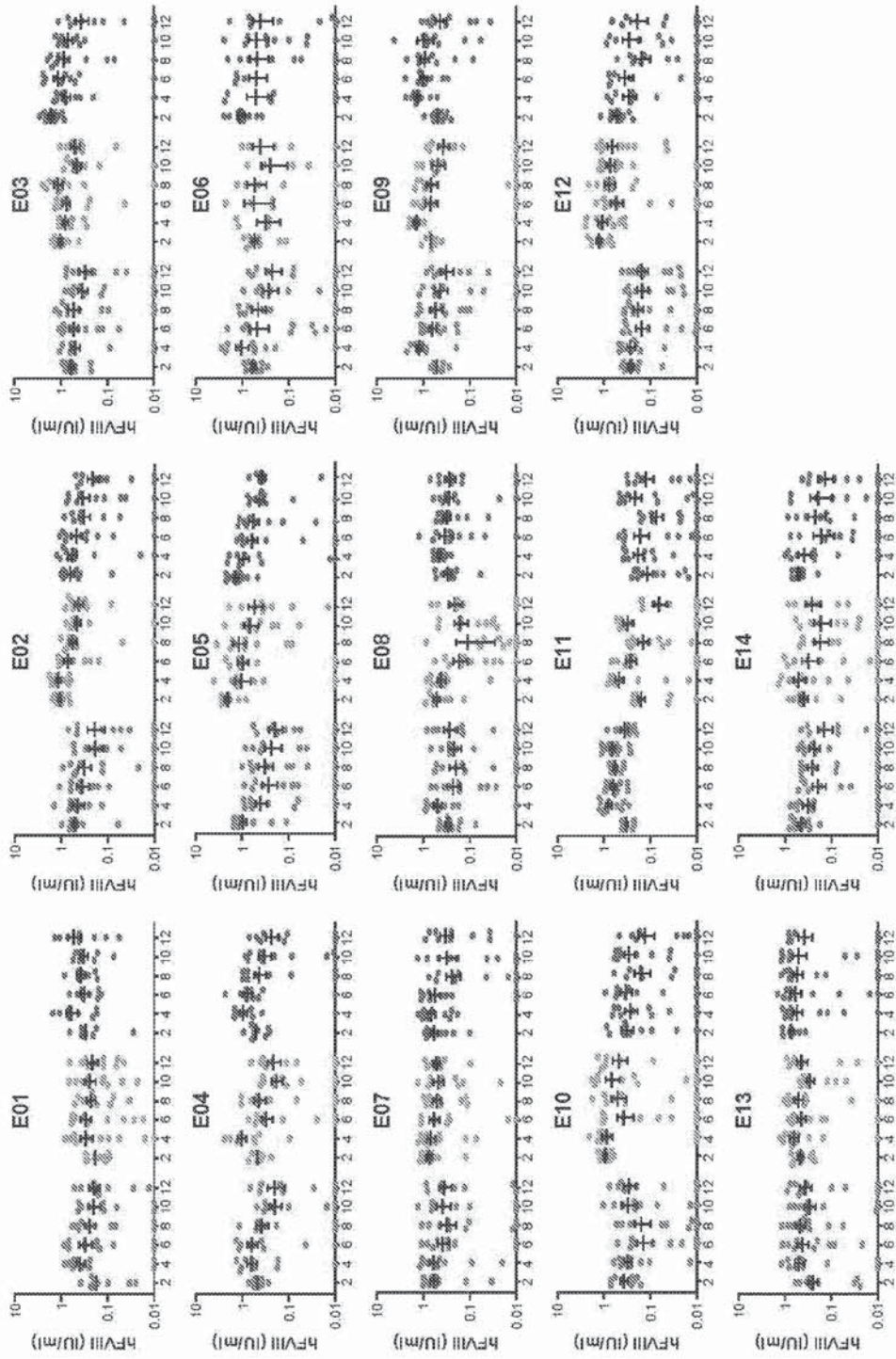


FIGURE 7

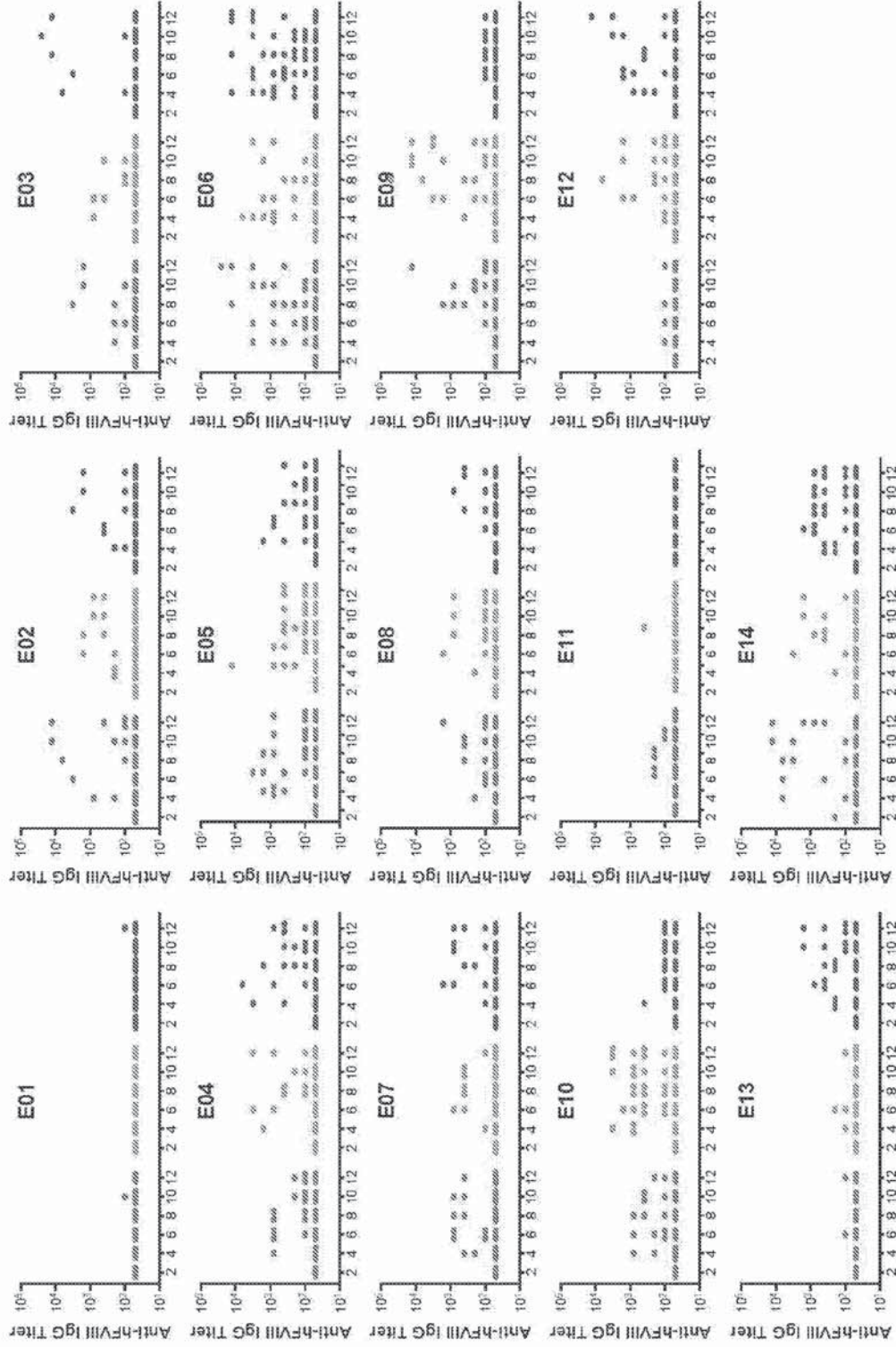


FIGURE 8

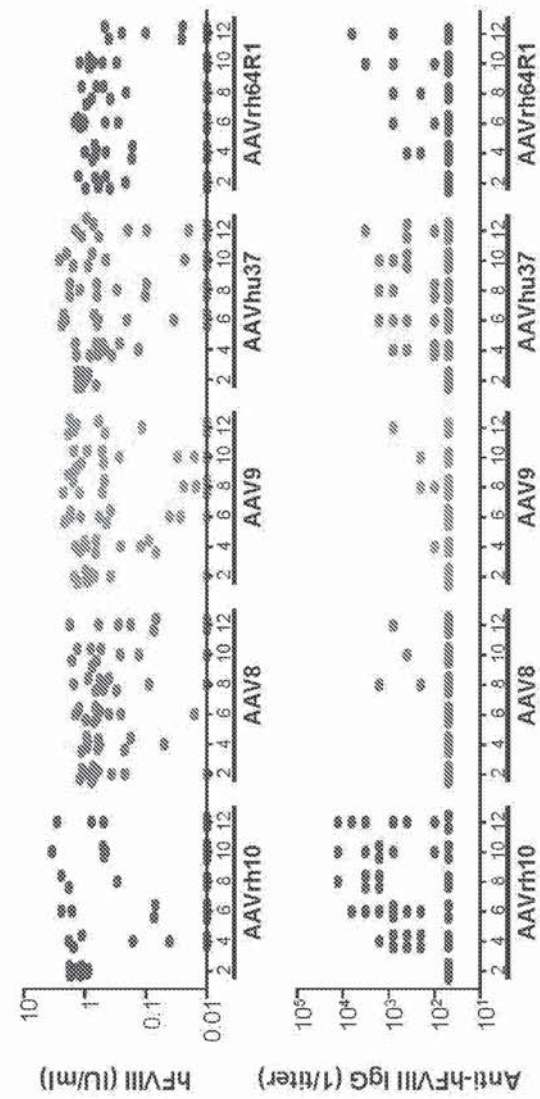


FIGURE 9

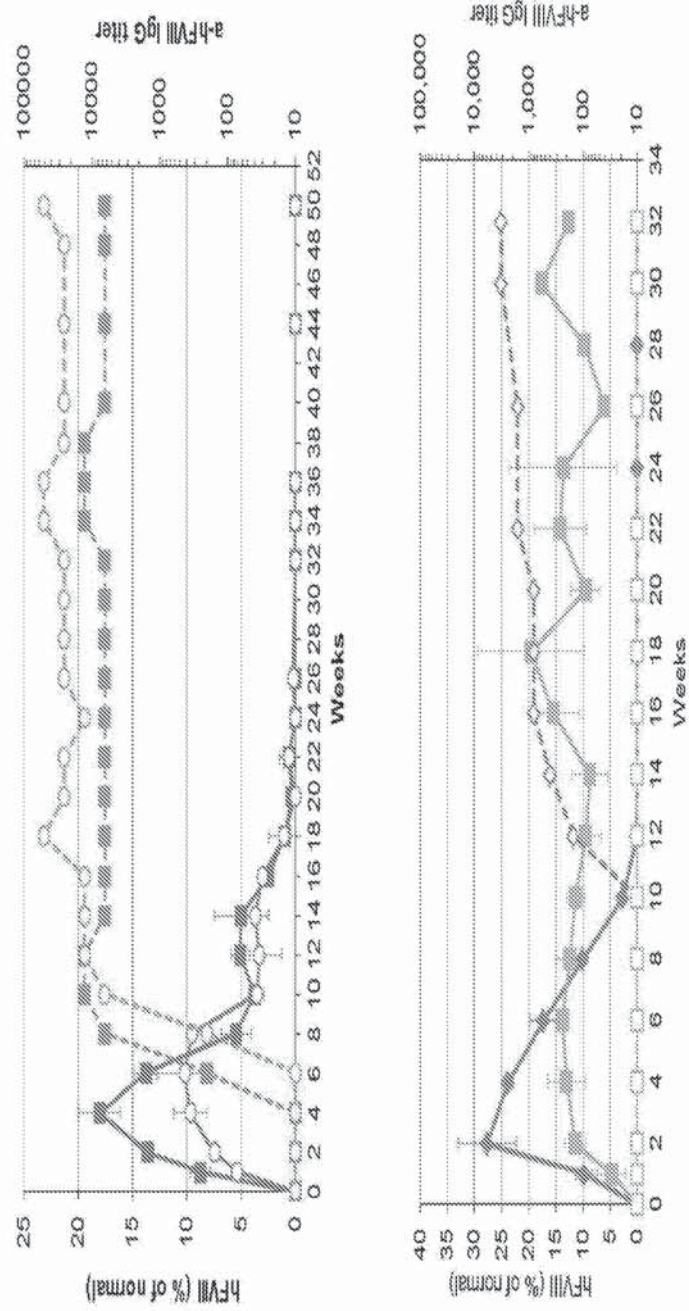


FIGURE 10

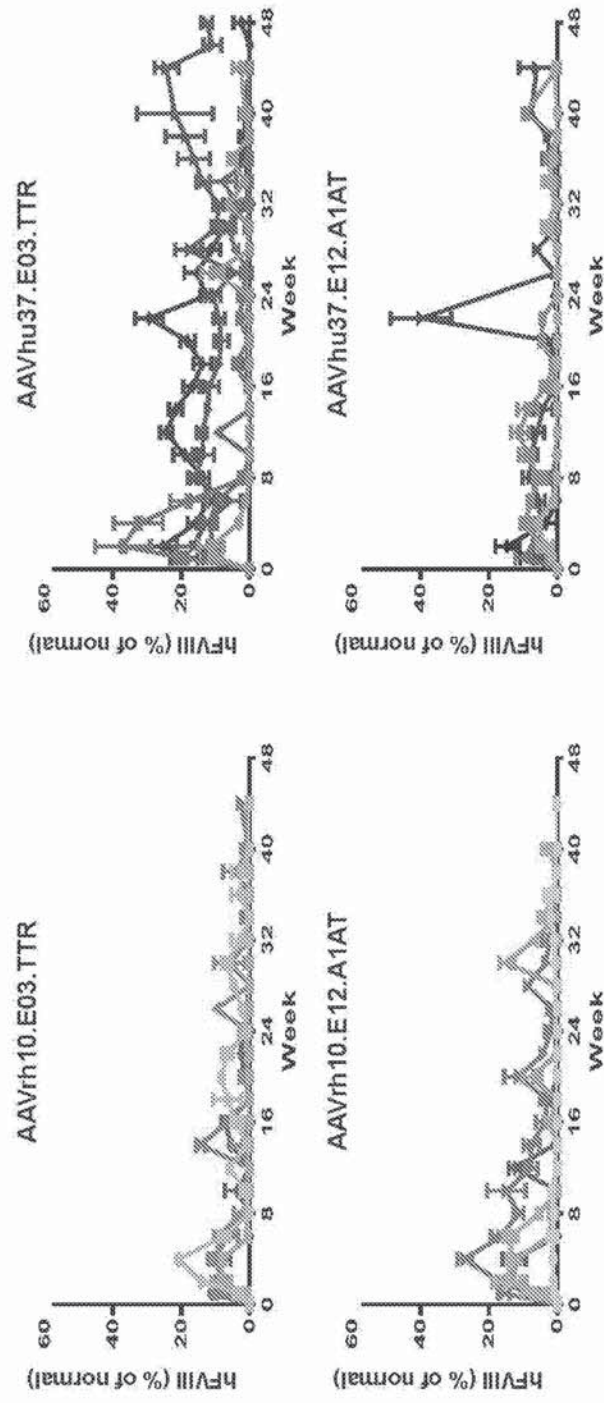


FIGURE 11

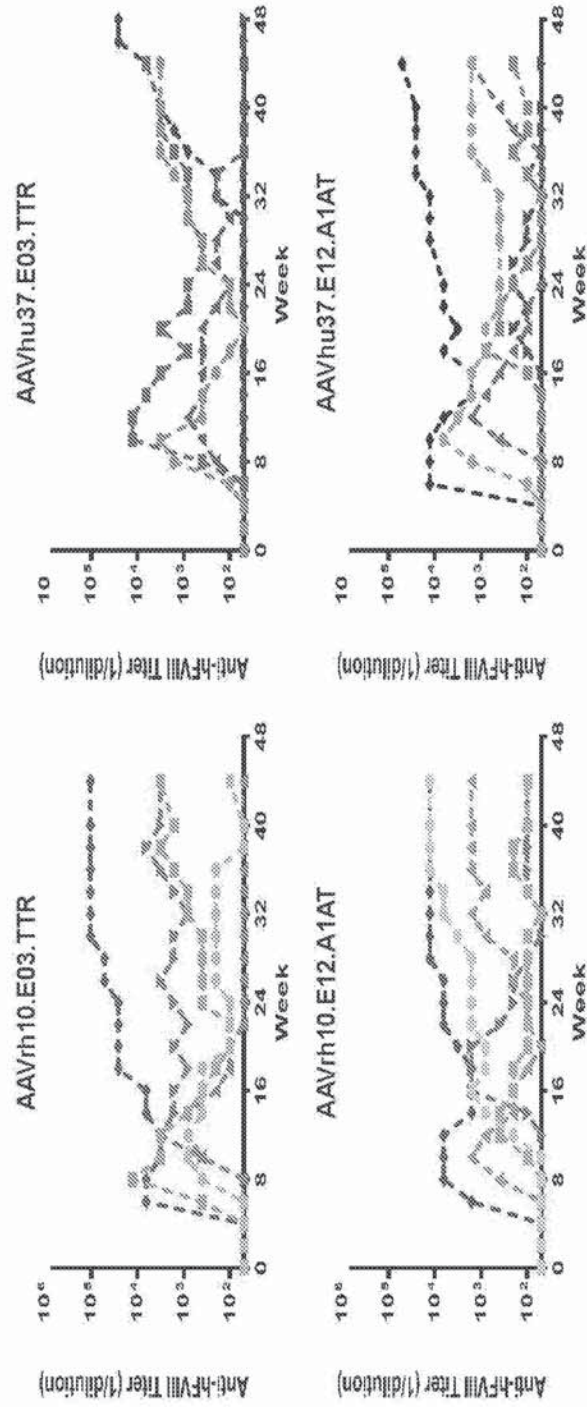


FIGURE 12

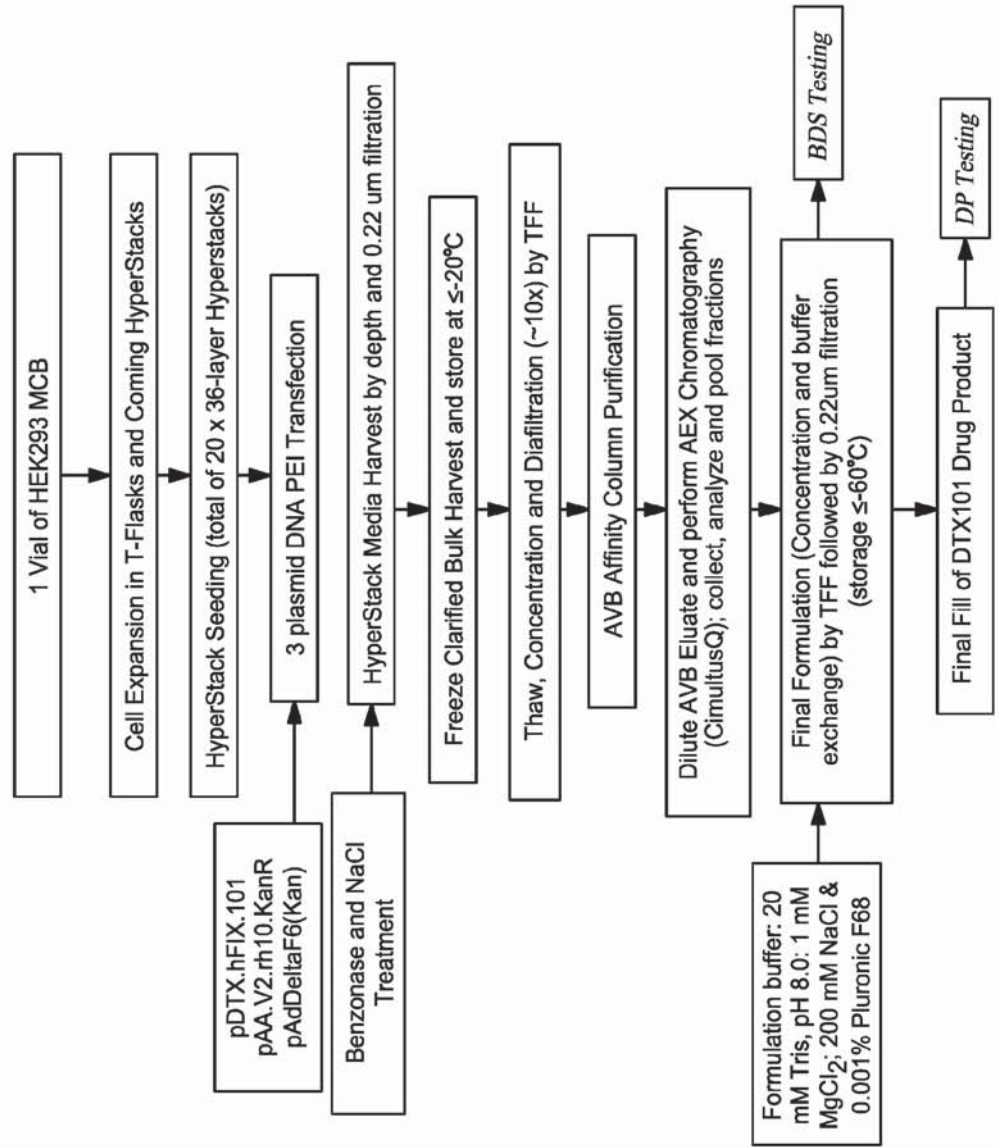
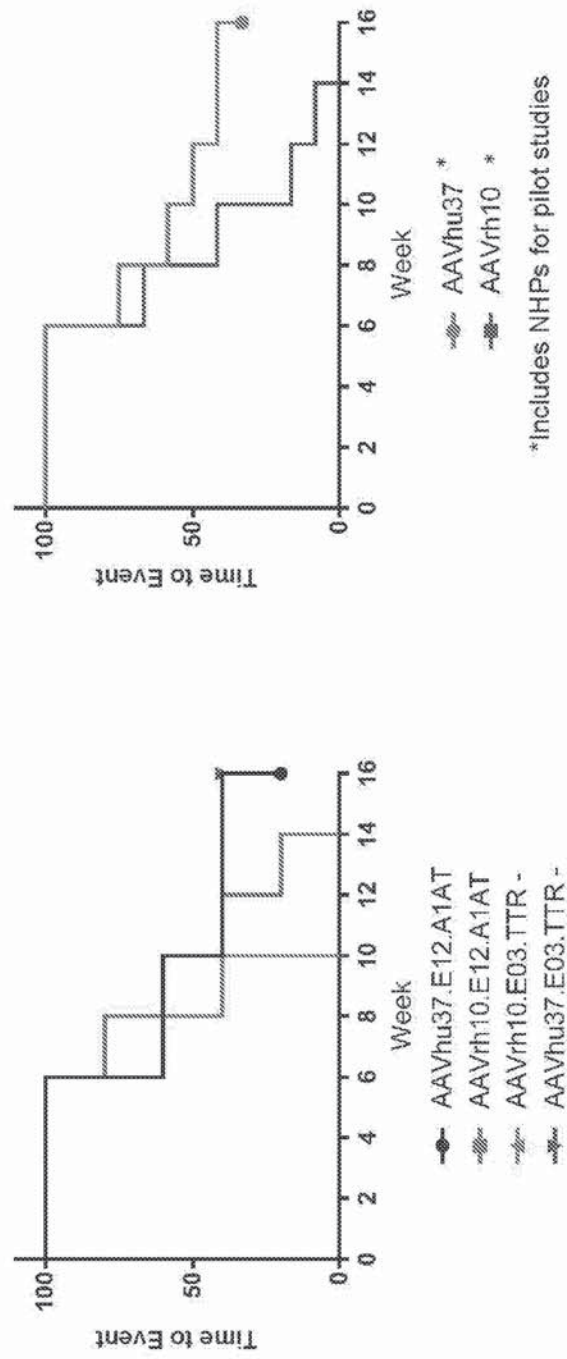


Figure 13

FIGURE 14



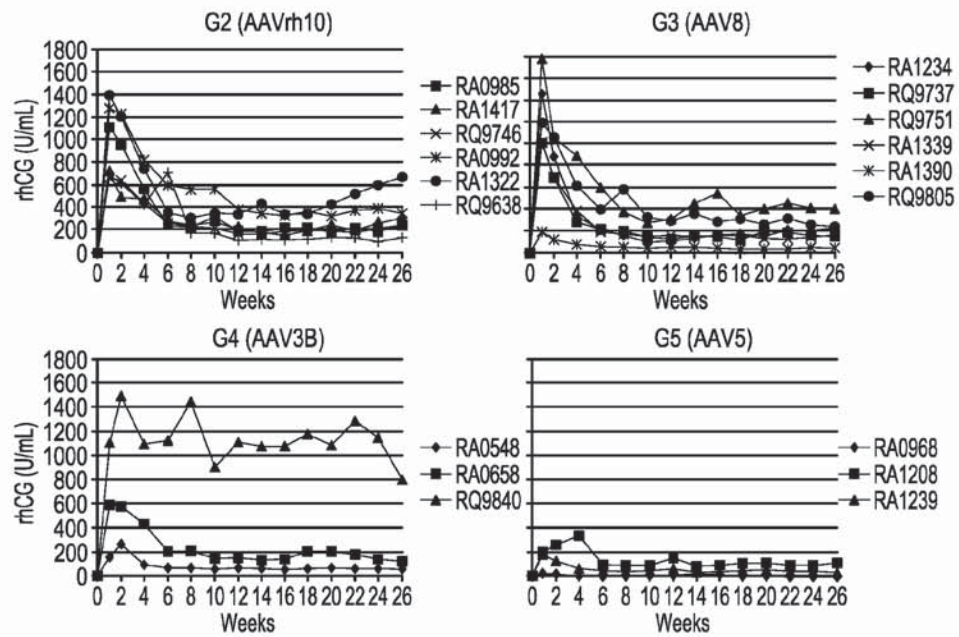


Figure 15

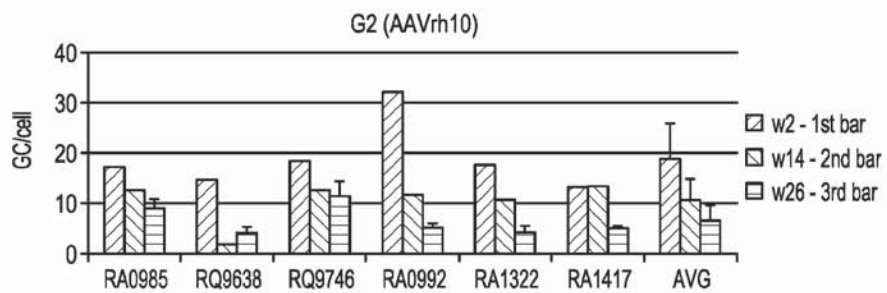


Figure 16A

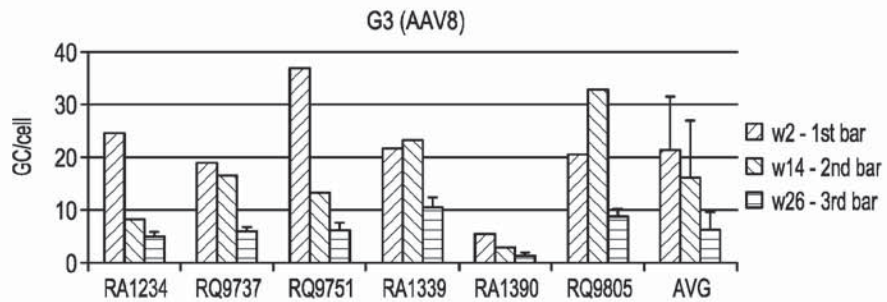


Figure 16B

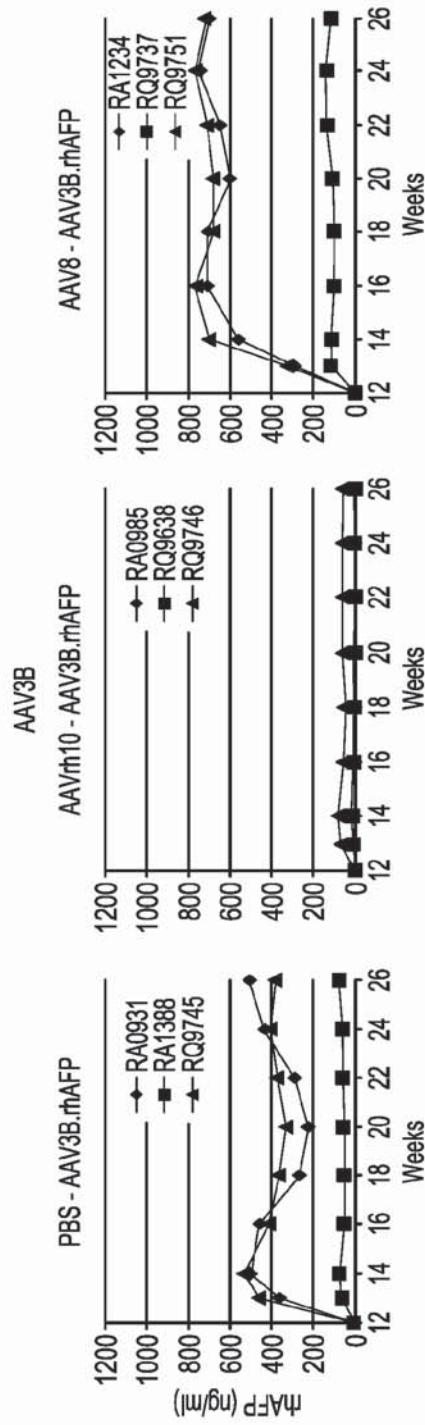


Figure 17A

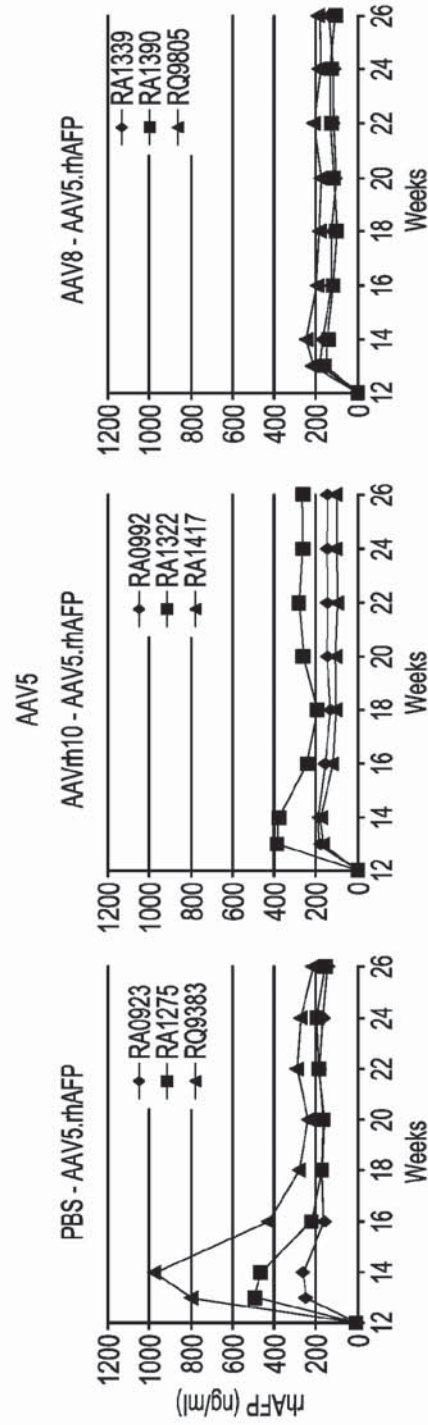


Figure 17B

FIGURE 18A

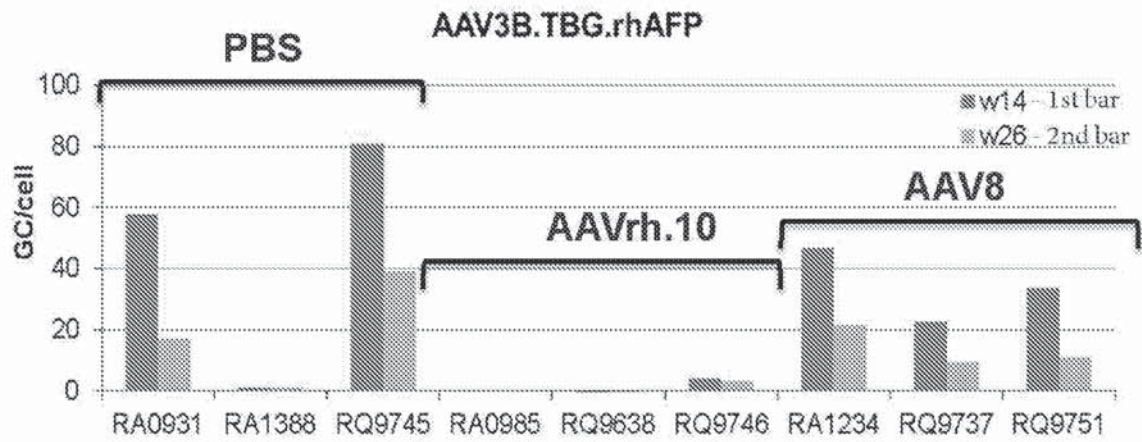
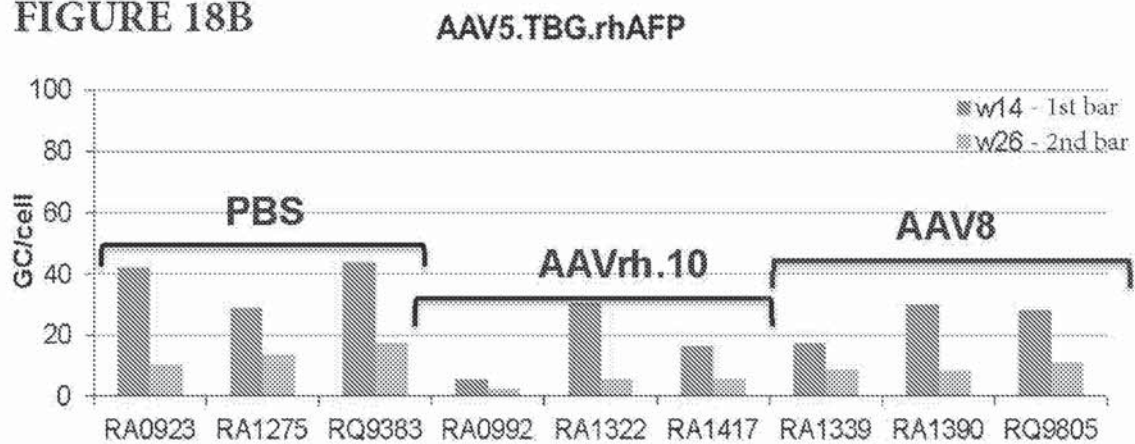


FIGURE 18B



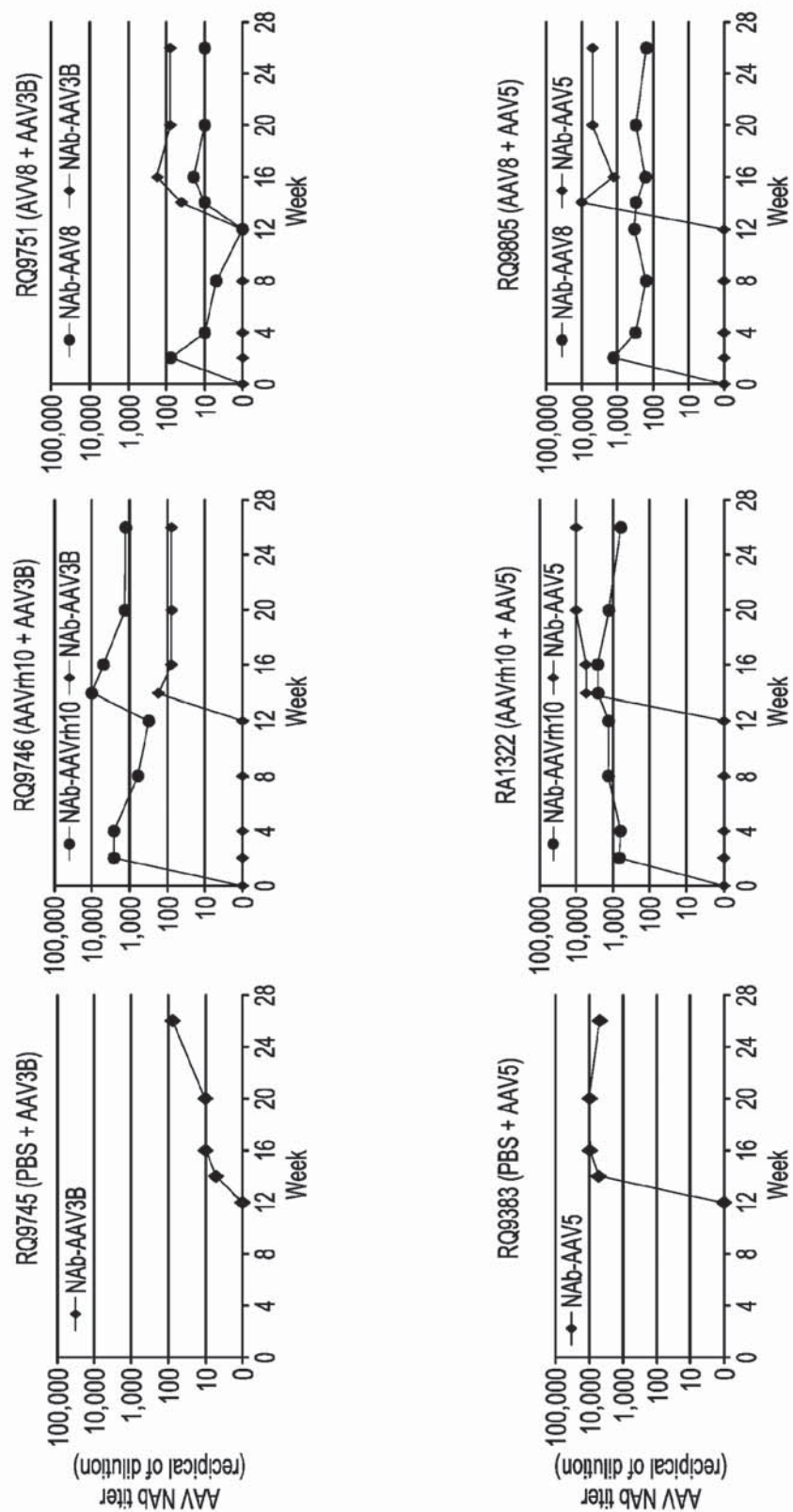


Figure 19

FIGURE 20A

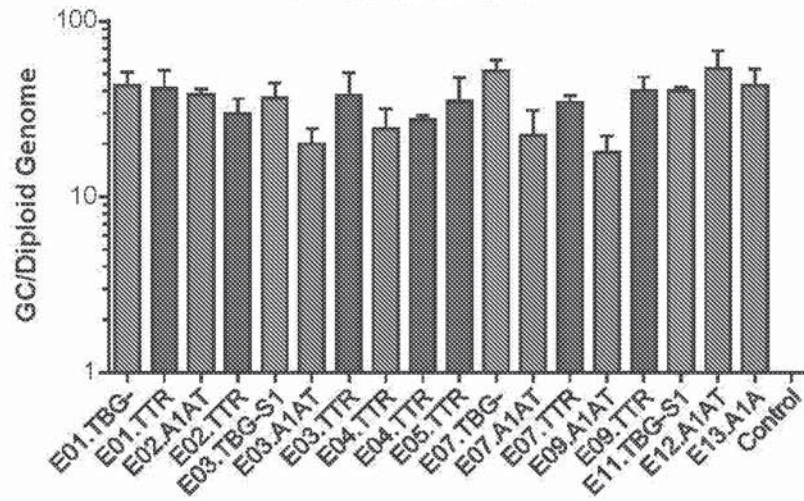
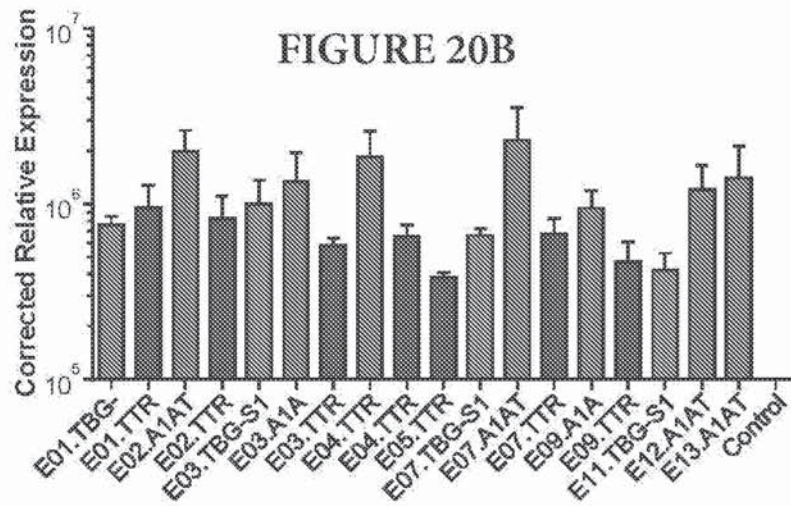


FIGURE 20B



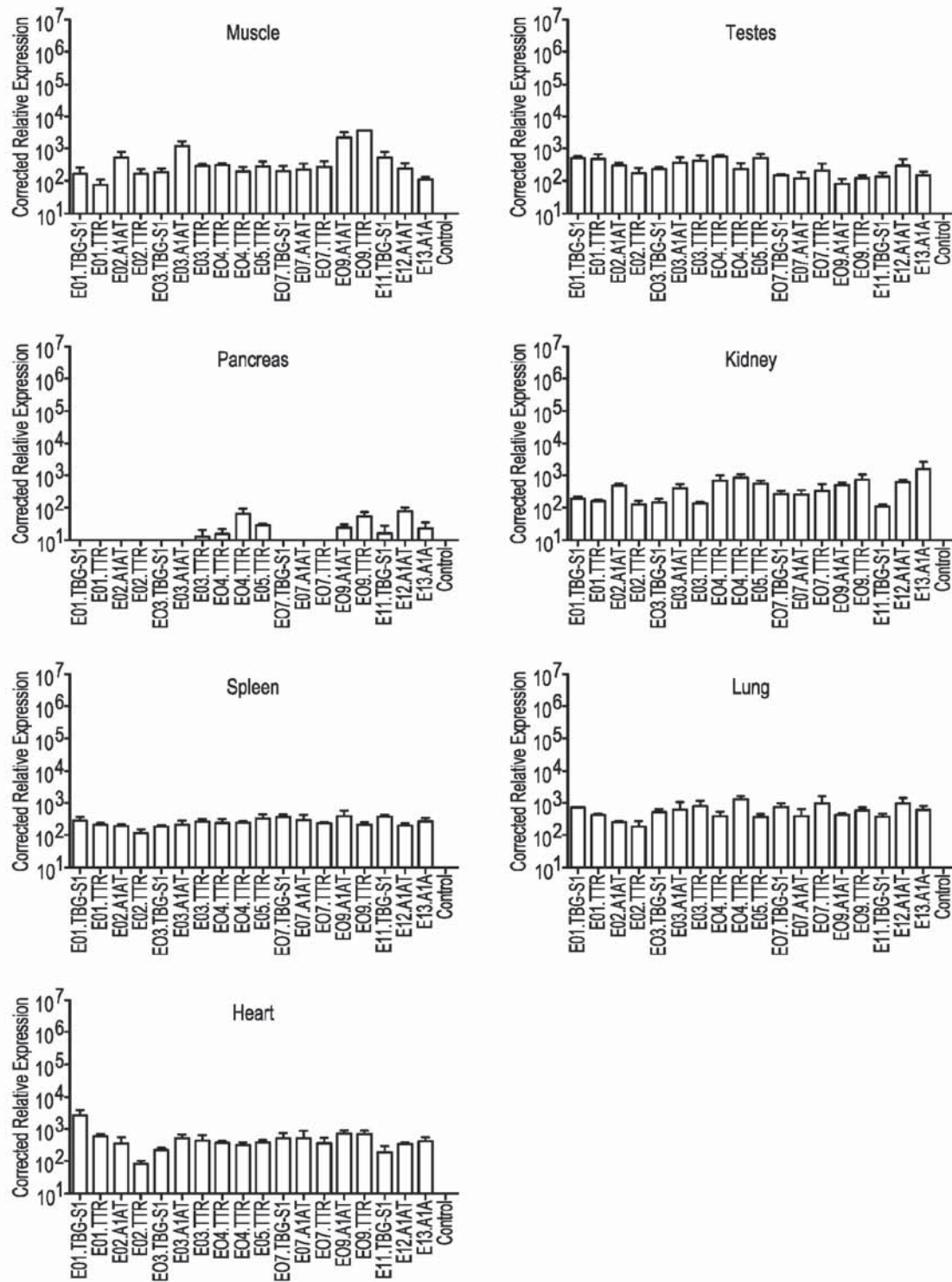


Figure 21

AAVhu37.TBG-S1.hFVIII-SQ.PA75 (3×10^{12} GC/kg)

M11269

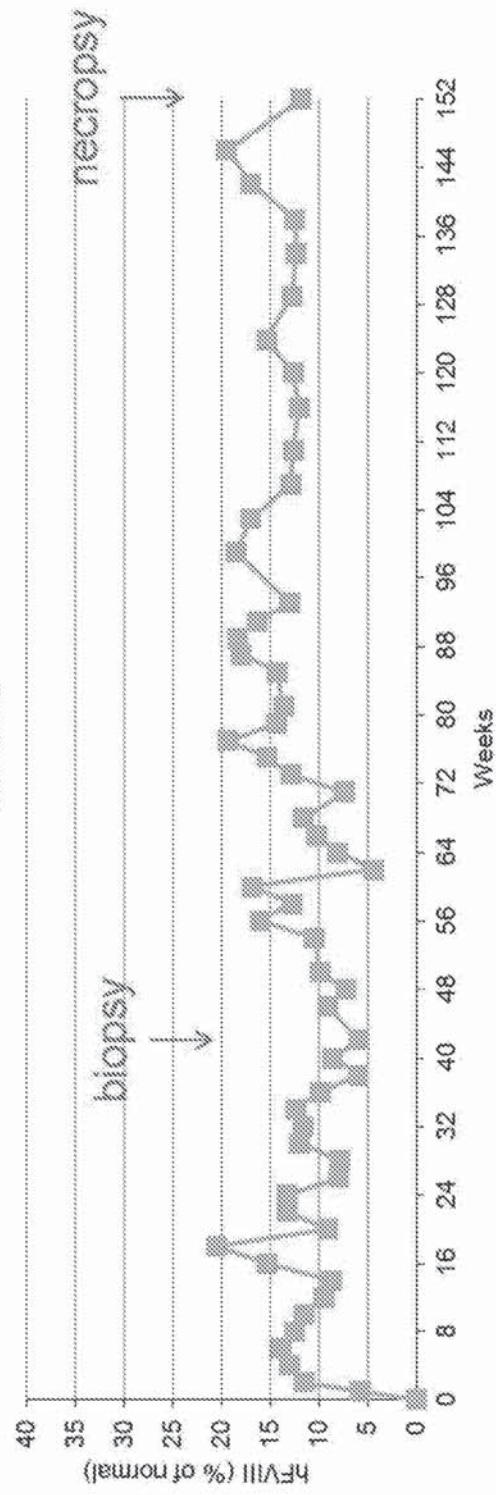


FIGURE 22

AAVhu37.TBG-S1.hFVIII-SQ.PA75 (3×10^{12} GC/kg)

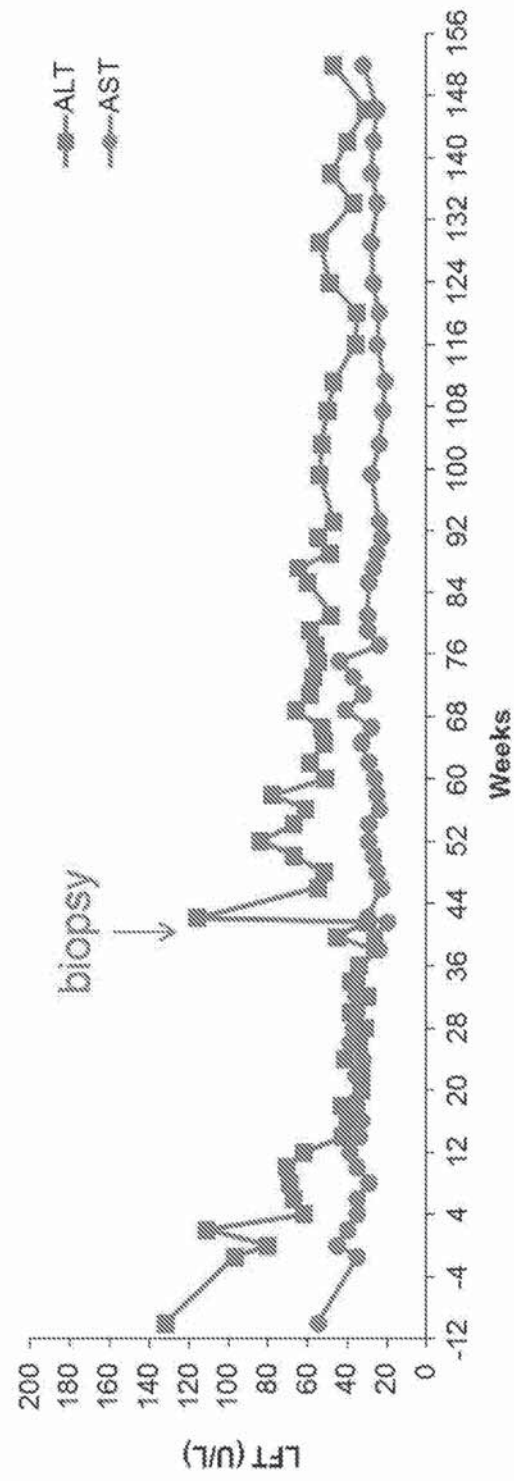


FIGURE 23

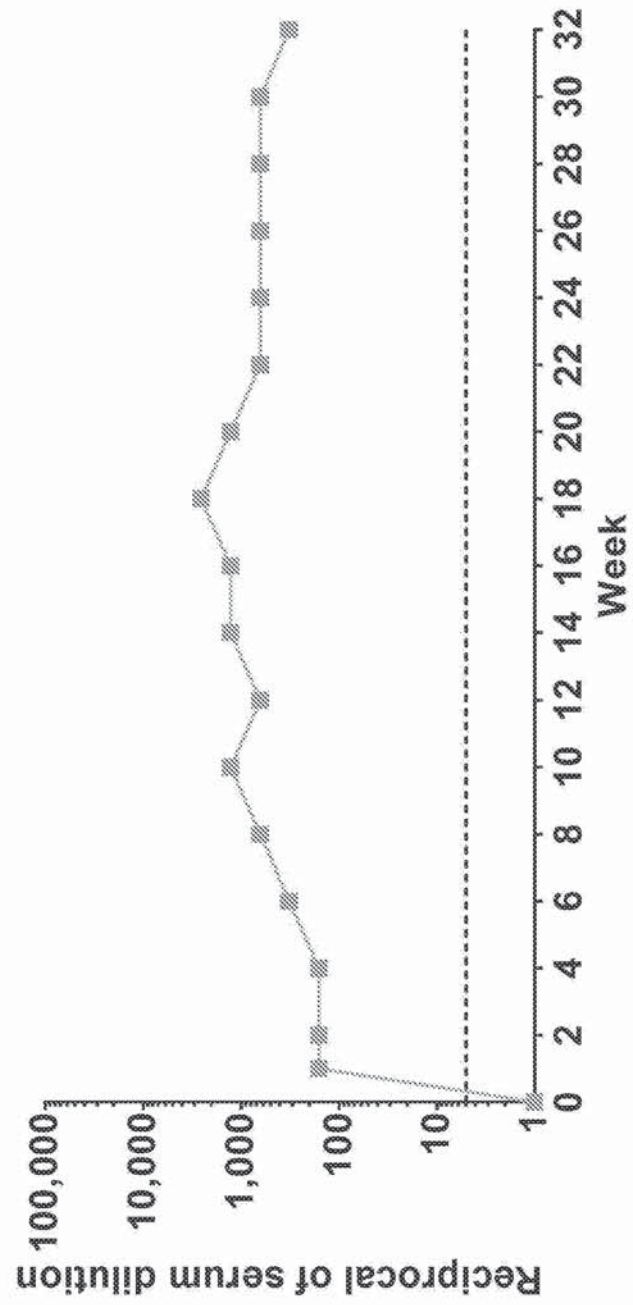


FIGURE 24

Percent Identify Matrix - created by Clustal2.1

1: hfVIIIco	100.00	77.24 (SEQ ID NO: 2)	
2: hfVIII	77.24	100.00 (SEQ ID NO: 1)	
hfVIIIco	atgcagatcgagctgagcacctgcttcttctgtgcctgctgcggttctgcttctccgcc	60	
hfVIII	atgcaaatagagctctccacctgcttcttctgtgccttttgcgattctgcttttagtgcc	60	
	***** ** ***** ***** ***** ***** ***** *****		
hfVIIIco	acccggcggtactacctgggagccgtggagctgagctgggattacatgcagagcgatctg	120	
hfVIII	accagaagatactacctgggtgcagtggaactgtcatgggactatatgcaaagtgatctc	120	
	*** * * ***** ** ***** ** ***** ** ***** ** *****		
hfVIIIco	ggagagctgccagtggtatgcccggttcccaccacgggtgccaaagagcttccattcaac	180	
hfVIII	ggtgagctgcctgtggacgcaagatttctctctagagtgcacaaatctttccattcaac	180	
	** ***** ***** ** * * * * * * * ***** ** *****		
hfVIIIco	accagcgtggtgtacaagaagacctgttctgtggagttcacggatcacctgttcaacatc	240	
hfVIII	acctcagtcgtgtacaaaagactctgtttgtagaattcacggatcaccttttcaacatc	240	
	*** ** ***** ***** ***** ** * * * * * ***** *****		
hfVIIIco	gccaaagccacggccacctggatgggactgctgggaccaacaatccaggccgaggtgtac	300	
hfVIII	gctaagccaaggccacctggatgggtatgctaggtctaccatccaggctgaggtttat	300	
	** ***** ***** ***** ***** ** * * * * * ***** *****		
hfVIIIco	gataccgtggtgatcacctgaagaacatggcctctcatcctgtgtccctgcacgccgtg	360	
hfVIII	gatacagtggtcattacacttaagaacatggccttcccatcctgtcagctctcatgtgtt	360	
	***** ***** ** * * * * * ***** ***** ***** ** * * * *		
hfVIIIco	ggagtgagctactggaagccagcgagggagccgagtacgatgatcagaccagccagcgg	420	
hfVIII	ggtgtatcctactggaagcttctgagggagctgaatatgatgatcagaccagtcacagg	420	
	** ** ***** ** ***** ** * * * * * ***** ***** ** *		
hfVIIIco	gagaaggaggatgataagtggttccaggaggaagccacacctaagtgtggcaggtgctg	480	
hfVIII	gagaagaagatgataaagcttctcctgggtggaagccatacatatgtctggcaggtcctg	480	
	***** ** ***** ** ***** ** ***** ** * * * * * ***** *****		
hfVIIIco	aaggagaacggaccaatggccagcgatccactgtgcctgacctacagctacctgagccac	540	
hfVIII	aaagagaatggtccaatggcctctgacccactgtgccttacctactcatatcttctcat	540	
	** ***** ** ***** ***** ***** ***** ***** ** * * *		
hfVIIIco	gtggatctggtgaaggatctgaacagcggactgatcggagccctgctggtgtgccgggag	600	
hfVIII	gtggacctggtaaaagacttgaattcaggcctcattggagccctactagtatgtagagaa	600	
	***** ***** ** * * * * * ***** ** * * * * * ***** ** * *		
hfVIIIco	ggaagcctggccaaggagaagaccagacctgcacaagttcatcctgtgttcgccgtg	660	
hfVIII	gggagtctggccaaggaaaagacacagaccttgacaaaattatactactttttgctgta	660	
	** * * ***** ***** ***** ***** ***** ** * * * * * *****		
hfVIIIco	ttcgatgagggaaagagctggcacagcgagaccaagaacagcctgatgcaggatcgggat	720	
hfVIII	tttgatgaagggaaggttggcactcagaacaaaagaactccttgatgcaggatagggat	720	
	** ***** ** * * * * * ***** ** * * * * * ***** * ***** *****		
hfVIIIco	gccgccagcggccggcctggccaaagatgcacaccgtgaacggatacgtgaaccggagc	780	
hfVIII	gctgcatctgtcggcctggcctaaaatgcacacagtcaatggttatgtcaacaggctct	780	
	** ** ***** ***** ***** ***** ***** ** * * * * * *****		

Figure 25

hfVIIIco	ctgccaggactgatcggtgccaccggaagagcgtgtactggcacgtgatcggaatggga	840
hfVIII	ctgccaggctctgattggatgccaccggaatcagtgattggcatgtgattggaatgggc	840
	***** **	
hfVIIIco	accaccccagaggtgcactctatcttctggaggacacacctttctggtgcggaaccac	900
hfVIII	accactcctgaagtgcactcaatattcctcgaaggtcacacatttctgtgaggaaccat	900
	***** **	
hfVIIIco	cggcaggccagcctggagatcagcccaatcaccttctgaccgcccagaccctgctgatg	960
hfVIII	cgccaggcgycccttgaaatctcgccaataactttccttactgctcaaacactcttgatg	960
	** ***** *	
hfVIIIco	gatctgggacagttcctgctgttctgccatatcagcagccaccagcacgatggaatggag	1020
hfVIII	gaccttgagacagtttctaattgtttgtcatatctcttcccaccaacatgatggcatggaa	1020
	** ** ***** ** *****	
hfVIIIco	gcctacgtgagggtgatagctgccagaggagccacagctgcggctgaagaacaacgag	1080
hfVIII	gcttatgtcaaagtagacagctgtccagaggaaacccaactacgaatgaaaaataatgaa	1080
	** ** * * * * *	
hfVIIIco	gaggccgaggattacgatgatgatctgaccgatagcgagatggatgtggtgcggttcgat	1140
hfVIII	gaagcgaagactatgatgatgatcttactgattctgaaatggatgtggtcagggttgat	1140
	** ** * * * * *	
hfVIIIco	gatgataacagcccaagcttcacatccagatccggagcgtggccaagaagcacccaaagacc	1200
hfVIII	gatgacaactctccttctttatccaaattcgctcagttgccaagaagcatcctaaaact	1200
	***** **	
hfVIIIco	tgggtgcactacatcgccgcccaggaggagattgggattacgccccactggtgctggcc	1260
hfVIII	tgggtacattacattgctgctgaagaggaggactgggactatgctcccttagtctcgcc	1260
	***** ** *****	
hfVIIIco	cctgatgatcggagctacaagagccagtagctgaacaacggaccacagcggatcggacgg	1320
hfVIII	cccgatgacagaagtataaaagtcaatatttgaacaatggccctcagcggattggtagg	1320
	** ***** *	
hfVIIIco	aagtaccccaaagtgcggttcatggcctacaccgatgagaccttcaagaccgggaggcc	1380
hfVIII	aagtacaaaaaagtcggatttatggcatacacagatgaaacctttaagactcgtgaagct	1380
	***** **	
hfVIIIco	atccagcacgagagcggaatcctgggaccactgctgtacggagaggtgggagataccctg	1440
hfVIII	attcagcatgaatcaggaatcttgggaccttactttatggggaagttggagacacactg	1440
	** *****	
hfVIIIco	ctgatcatcttcaagaaccagccagccgccataacaatctaccacacggaatcacc	1500
hfVIII	ttgattatatttaagaatcaagcaagcagaccatataacatctaccctcacggaatcact	1500
	**** * * *	
hfVIIIco	gatgtgcggccactgtacagccggcggtgccaaagggagtgaagcacctgaaggatttc	1560
hfVIII	gatgtccgtccttctgtattcaaggagattacaaaagggtgaaaacatttgaaggatttc	1560
	***** **	
hfVIIIco	ccaatcctgccaggagagatcttcaagtacaagtggacagtgcagtgaggatggacca	1620
hfVIII	ccaattctgccaggagaaatattcaaataaaatggacagtgcagtgtagaagatgggcca	1620
	***** *****	
hfVIIIco	accaagtctgatccaagatgcctgaccagatactacagcagctttgtgaacatggagaga	1680
hfVIII	actaaatcagatcctcggtgcctgacccgctattactctagtttcgttaatatggagaga	1680
	** ** * * *	

Figure 25 (cont'd)

hfVIIIco	gacctggcctctggactgattggaccactgctgatctgctacccggagtctgtggatcag	1740
hfVIII	gatctagcttcaggactcattggccctctcctcatctgctacaaagaatctgtagctcaa	1740
	** ** *	
hfVIIIco	agaggaaaccagatcatgtctgataagagaaatgtgatcctgttctctgtgtttgatgag	1800
hfVIII	agaggaaaccagataatgtcagacaagaggaatgtcatcctgttttctgtatttgatgag	1800
	***** *	
hfVIIIco	aacagaagctggtacctgacagagaacatccagagattcctgccaaaccagccggagtg	1860
hfVIII	aaccgaagctggtacctcacagagaatatacaacgctttctcccaatccagctggagtg	1860
	*** *	
hfVIIIco	cagctggaggatccagagttccaggccagcaacatcatgcacagcatcaacggatacgtg	1920
hfVIII	cagcttgaggatccagagttccaagcctccaacatcatgcacagcatcaatggctatgtt	1920
	***** *	
hfVIIIco	ttcgatagcctgcagctgagcgtgtgcctgcaggaggtggcctattggtatatcctgagc	1980
hfVIII	tttgatagtttgagttgtcagttgtttgttcagtgaggtggcacttggtacattctaagc	1980
	** ***** *	
hfVIIIco	atcggagcccagaccgatttctgagcgtgttcttcagcggatacaccttcaagcacaag	2040
hfVIII	attggagcacagactgacttctcttctgtcttcttctctggatataccttcaaacacaaa	2040
	** ***** *	
hfVIIIco	atgggtgtacgaggataccctgaccctgttcccattctccggagagaccgtgttcatgagc	2100
hfVIII	atgggtctatgaagacacactcaccctattcccattctcaggagaaactgtcttcatgtcg	2100
	***** *	
hfVIIIco	atggagaaccagagactgtggatcctgggatgccacaactctgatttcagaaacagagga	2160
hfVIII	atggaaaaccaggtctatggattctggggtgccacaactcagactttcggaaacagaggc	2160
	***** *	
hfVIIIco	atgactgccctgctgaaagtgtccagctgtgataagaacactggagattactatgaggat	2220
hfVIII	atgaccgccttactgaagggtttctcggttgacaagaacactgggtgattcttaacaggagc	2220
	***** *	
hfVIIIco	agctatgaggatatctctgcctacctgctgagcaagaacaatgccattgagccaagaagc	2280
hfVIII	agttatgaagatatttcagcatacttgctgagtaaaaaaatgccattgaaccaagaagc	2280
	** ***** *	
hfVIIIco	ttcagccagaaccaccagtgctgaagagacaccagagagagatcaccagaaccaccctg	2340
hfVIII	ttctcccagaatccaccagtttgaaacgcatcaacgggaaataactcgtactactctt	2340
	*** *	
hfVIIIco	cagtcctgatcaggaggagattgattatgatgataccatctctgtggagatgaagaaggag	2400
hfVIII	cagtcagatcaagaggaaattgactatgatgataccatatcagttgaaatgaagaaggaa	2400
	***** *	
hfVIIIco	gattttgatattctatgatgaggatgagaaccagagcccaagaagcttcagagaagaagacc	2460
hfVIII	gattttgacattttatgatgaggatgaaaatcagagccccgcagctttcaaaagaaaaca	2460
	***** *	
hfVIIIco	agacactacttcatcgctgcagtgaggagactgtgggattatggaatgagcagcagccca	2520
hfVIII	cgacactattttattgctgcagtgaggagggctctggattatgggatgagtagctcccca	2520
	***** *	
hfVIIIco	cacgtgctgagaaacagagcccagagcggatctgtgccacagttcaagaaggtggtgttc	2580
hfVIII	catgttctaagaacagggctcagagtggcagtgctccctcagttcaagaaggtgttttc	2580
	** ** *	

Figure 25 (cont'd)

hfVIIIco	caggagttcaccgatggaagcttcacccagccactgtaccggggagagctgaacgagcac	2640
hfVIII	caggaatttactgatggctcctttactcagcccttataccgtggagaactaaatgaacat	2640
	***** ** ** ***** ** ** ***** * ***** ***** ** ** ** *	
hfVIIIco	ctgggactgctgggaccatacatocgggcccaggtggaggataacatcatggtgaccttc	2700
hfVIII	ttgggactcctggggccatataaagagcagaagttgaagataatatcatggtgaactttc	2700
	***** ***** ***** ** * ** ** ** ** ** ***** ***** ** ** *	
hfVIIIco	cggaaccaggccagccggccatacagcttctacagcagcctgatcagctacgaggaggat	2760
hfVIII	agaaatcaggcctctcgtccctattccttctattctagccttatttcttatgaggaagat	2760
	* ** ***** ** ** ** ***** ***** ** ***** ** *	
hfVIIIco	cagcggcagggagccgagccacggaagaacttcgtgaagccaaacgagaccaagacctac	2820
hfVIII	cagaggcaaggagcagaacctagaaaaaactttgtcaagcctaataaaccaaaacttac	2820
	*** ***** ** ** * ** ***** ** ***** ** ** ***** ** ** *	
hfVIIIco	ttctggaaggtgcagcaccacatggccccaaccaaggatgagttcgattgcaaggcctgg	2880
hfVIII	ttttgaaagtgcacatcatatggcaccactaaagatgagtttgactgcaaaagcctgg	2880
	** ***** ***** ** ** ***** ** ** ** ***** ***** ** *****	
hfVIIIco	gcctacttcagcgtgtggatctggagaaggatgtgcacagcggactgatcggaccactg	2940
hfVIII	gcttatttctctgatgttgacttgaaaaagatgtgcactcaggcctgattggaaccctt	2940
	** ** ** ***** ** ***** ** ***** ***** ** ***** ***** **	
hfVIIIco	ctggtgtgccacaccaacacctgaaccagccacggaaggcaggtgacctgacaggag	3000
hfVIII	ctggtctgccactaacaactgaacctgctcatgggagacaagtgcagtacaggaa	3000
	***** ***** ***** ***** ***** ** ** * ** ***** ** *****	
hfVIIIco	ttcgccctgttcttcaccatcttcgatgagaccaagagctggtacttcaccgagaacatg	3060
hfVIII	tttgctctgttttccaccatctttgatgagacaaaagctggtacttcactgaaaatatg	3060
	** ** ***** ***** ***** ***** ***** ***** ***** ** ** **	
hfVIIIco	gagcggaaactgccgggccccttgcaacatccagatggaggatccaaccttcaaggagaac	3120
hfVIII	gaaagaaactgcagggtcccttgcaatatccagatggaagatcccacttttaagagaat	3120
	** * ***** ***** ** ***** ***** ***** ***** ** ** ** *****	
hfVIIIco	taccggttcacgccatcaacggatacatcatggataccctgccaggactggtgatggcc	3180
hfVIII	tatcgcttccatgcaatcaatggctacataatggatacactacctggcttagtaatggct	3180
	** ** ***** ** ***** ** ***** ***** ***** ***** ** ** * ** *****	
hfVIIIco	caggatcagcggatccggtggtacctgctgagcatgggaagcaacgagaacatccacagc	3240
hfVIII	caggatcaaaggattcgatggtatctgctcagcatgggcagcaatgaaaacatccattct	3240
	***** ***** ** ***** ***** ***** ***** ***** ** *****	
hfVIIIco	atccacttcagcggacacgtgttcaccgtgcggaagaaggaggagtacaagatggccctg	3300
hfVIII	attcatttcagtggacatgtgttcactgtacgaaaaaaggaggagtataaaatggcactg	3300
	** ** ***** ***** ***** ***** ** ** ** ***** ***** *****	
hfVIIIco	tacaacctgtaccagcaggtgttcgagaccgtggagatgctgccaagcaaggccggaatc	3360
hfVIII	tacaatctctatccaggtgttttgagacagtggaaatgttaccatccaaagctggaatt	3360
	***** ** ** ***** ** ** ***** ***** ***** * ** ***** ** *****	
hfVIIIco	tggcgggtggagtgctgatcggagagcacctgcacgccggaatgagcaccctgttcctg	3420
hfVIII	tggcgggtggaatgccttattggcgagcatctacatgctgggatgagcacactttttctg	3420
	***** ***** ***** ** ** ***** ** ** ** ***** ***** *****	
hfVIIIco	gtgtacagcaacaagtgccagacccactgggaatggccagcggacacatccgggatttc	3480
hfVIII	gtgtacagcaataagtgtcagactccctgggaatggcttctggacacattagagatttt	3480
	***** ***** ***** ***** ***** ***** ***** ***** * *****	

Figure 25 (cont'd)

hfVIIIco	cagatcaccgccagcggacagtacggacagtgggccccaaagctggcccggtgcactac	3540
hfVIII	cagattacagcttcaggacaatatggacagtgggccccaaagctggccagacttcattat	3540
	***** ** * * ***** ** ***** * ** * *	
hfVIIIco	agcggaaagcatcaacgcctggagcaccaaggagccattcagctggatcaaagtggatctg	3600
hfVIII	tccggatcaatcaatgcctggagcaccaaggagcccttttcttggatcaagtggtatctg	3600
	*** ***** ***** ** ***** *****	
hfVIIIco	ctggccccaatgatcatccacggaatcaagaccaggagcccggcagaagttcagcagc	3660
hfVIII	ttggcaccaatgattattcacggcatcaagaccagggtgccgtcagaagttctccagc	3660
	*** ***** ** ***** ***** ***** *****	
hfVIIIco	ctgtacatcagccagttcatcatcatgtacagcctggatggaaagaagtggcagacctac	3720
hfVIII	ctctacatctctcagtttatcatcatgtatagtcttggatgggaagaagtggcagacttat	3720
	** ***** ***** ***** ** * * ***** *****	
hfVIIIco	cggggaacagcacccggaacctgatggtgttcttcggaaacgtggatagcagcggaatc	3780
hfVIII	cgaggaaattccactggaaccttaatggtcttcttggcaatgtggattcatctgggata	3780
	** ***** ** ***** * ***** ***** ** * * *****	
hfVIIIco	aagcacaacatcttcaaccaccaatcatcgccgatacatccggtgcacccaacccac	3840
hfVIII	aaacacaatatttttaacctccaattatgctcgatacatccgttgcacccaactcat	3840
	** ***** ** * * ***** ***** ** * * ***** *****	
hfVIIIco	tacagcatcagaagcacccctgcggatggagctgatgggatgtgatctgaacagctgctcc	3900
hfVIII	tatagcattcgcagcactcttcgcctggagtgtgatgggctgtgatttaaatagtgcagc	3900
	** ***** * ***** ** * * ***** ***** ***** * ** * *	
hfVIIIco	atgccactgggaatggagagcaaggccatcagcgatgccagatcaccgccagcagctac	3960
hfVIII	atgccattgggaatggagagtaaaagcaatatcagatgcacagattactgcttcatcctac	3960
	***** ***** ***** ** * * ***** ***** ** * *	
hfVIIIco	ttcaccaacatgttcgccacctggagcccaagcaaggcccggtgcacctgcagggacgg	4020
hfVIII	tttaccaatatgtttgccacctggtctccttcaaaagctcgacttcacctccaagggagg	4020
	** ***** ***** ***** ** * * ** * * ***** ** * *	
hfVIIIco	agcaacgcctggcgccacagtgtaataacccaaaggagtggctgcaggtggatttccag	4080
hfVIII	agtaatgcctggagacctcagtgtaataatccaaaagagtggctgcaagtggacttccag	4080
	** * * ***** * ** ***** ***** ***** ***** *****	
hfVIIIco	aagaccatgaaggtgaccggagtgaccacccaggagtgaagagcctgctgactagcatg	4140
hfVIII	aagacaatgaaagtacaggagtaactactcaggagtaaaatctctgcttaccagcatg	4140
	***** ***** ** * * ***** ** * * ***** ** *****	
hfVIIIco	tatgtgaaggagtctcctgatcagcagcagccaggatggacaccagtggacctgttcttc	4200
hfVIII	tatgtgaaggagtctcctcatctccagcagtcagatggccatcagtggactctctttttt	4200
	***** ***** ***** ** ***** ** ***** ** *****	
hfVIIIco	cagaacggaaaggtgaaggtgttccagggaaccaggatagcttcaccccagtggtgaac	4260
hfVIII	cagaatggcaaagttaaaggttttccagggaatcaagactccttcacacctgtggtgaac	4260
	***** ** * * ***** ** ***** ** * * ***** ** *****	
hfVIIIco	agcctggatccaccactgctgaccgatacctgcggatccaccacagagctgggtgcac	4320
hfVIII	tctctagaccacccgttactgactcgctaccttcgaattcaccaccagagttgggtgcac	4320
	* * * * ***** * ***** ** ***** ** * * ***** *****	
hfVIIIco	cagatcgccctgagaatggaggtgctgggatgagggcccaggatctgtactga	4374
hfVIII	cagattgcctgaggatggaggtctggtgctgagggcacaggacctctac---	4371
	***** ***** ***** ***** ***** ***** ***** * * *	

Figure 25 (cont'd)