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Human NaGlu Amino Acid Sequence (signal peptide: 1-23, underlined)

<u>MEAVAVAAAV</u>	<u>GVLLLAGAGG</u>	<u>AAGDEAREAA</u>	AVRALVARLL	GPGPAADFSV	SVERALAAKP	60
GLDTYSLGGG	GAARVRVRGS	TGVAAAAGLH	RYLRDFCGCH	VAWSGSQLRL	PRPLPAVPGE	120
LTEATPNRYR	YYQNVCTQSY	SFVWWDWARW	EREIDWMALN	GINLALAWSG	QEAIWQRVYL	180
ALGLTQAEIN	EFFTGPAFLA	WGRMGNLHTW	DGPLPPSWHI	KQLYLQHRVL	DQMRSGMTP	240
VLPAFAGHVP	EAVTRVFPQV	NVTKMGSWGH	FNCSSYCSFL	LAPEDPIFPI	IGSLFLRELI	300
KEFGTDHIYG	ADTFNEMQPP	SSEPSYLAAA	TTAVYEAMTA	VDTEAVWLLQ	GWLFQHQPF	360
WGPAQIRAVL	GAVPRGRLLV	LDLFAESQPV	YTRTASFQQQ	PFIWCMLHNF	GGNHGLFGAL	420
EAVNGGPEAA	RLFPNSTMVG	TGMAPEGISQ	NEVVYSLMAE	LGWRKDPVPD	LAAWVTSFAA	480
RRYGVSHFDA	GAAWRLLLRS	VYNCSGEACR	GHNRSPLVRR	PSLQMNTSIW	YNRSDVFEAW	540
RLLLTSAPSL	ATSPAIFYDL	LDLTRQAVQE	LVSLEYEEAR	SAYLSKELAS	LLRAGGVLAY	600
ELLPALDEVL	ASDSRFLLS	WLEQARAAAV	SEAEADFYEQ	NSRYQLTLWG	PEGNILDYAN	660
KQLAGLVANY	YTPRWRLFLE	ALVDSVAQGI	PFQQHQFDKN	VFQLEQAFVL	SKQRYPSQPR	720
GDTVDLAKKI	FLKYYPRWVA	GSW				743

(SEQ ID NO:1)

Fig. 1

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Human NaGlu Coding Sequence (cDNA)

atggaggcgg	tggcgggtggc	cgcgggcggtg	ggggtccttc	tcctggccgg	ggccggggggc	60
gcggcaggcg	acgaggcccg	ggaggcgggcg	gccgtgcggg	cgctcgtggc	ccggctgctg	120
gggcccaggcc	ccgcggccga	cttctccgtg	tcggtggagc	gcgctctggc	tgccaagcgg	180
ggcttggaaca	cctacagcct	gggcggcgggc	ggcgcgggcg	gcgtgcgggt	gcgcggtcc	240
acgggcggtg	cagccgcgc	ggggctgcac	cgctacctgc	gcgacttctg	tggctgccac	300
gtggcctgg	ccggctctca	gctgcgcctg	ccgcggccac	tgccagccgt	gccgggggag	360
ctgaccgagg	ccacgcccac	caggtaccgc	tattaccaga	atgtgtgcac	gcaaagctac	420
tctttcgtgt	ggtgggactg	ggcccgggtg	gagcgagaga	tagactggat	ggcgctgaat	480
ggcatcaacc	tggcaactgg	atggagcggc	caggaggcca	tctggcagcg	ggtgtacctg	540
gccttgggcc	tgacccaggc	agagatcaat	gagttcttta	ctggctcctg	cttcttgcca	600
tggggggcgaa	tgggcaacct	gcacacctgg	gatggccccc	tgcccccctc	ctggcacatc	660
aagcagcttt	atctgcagca	ccgggtcctg	gaccagatgc	gctccttcgg	catgacccca	720
gtgctgcctg	cattcgcggg	gcatgttccc	gaggctgtca	ccagggtggt	ccctcaggtc	780
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aaagagtttg	gcacagacca	catctatggg	gccgacactt	tcaatgagat	gcagccacct	960
tcctcagagc	cctcctatct	tgcgcagacc	accactgccg	tctatgaggc	catgactgca	1020
gtggatactg	aggctgtgtg	gctgctccaa	ggctggctct	tccagcacca	gccgcagttc	1080
tggggggcccg	cccagatcag	ggctgtgctg	ggagctgtgc	cccgaggccg	cctcctgggt	1140
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cccttcctct	ggtgcctgct	gcacaacttt	gggggaaatc	atggctctttt	tggagccttg	1260
gaggccgtga	acggaggccc	agaagctgcc	cgctcttccc	ccaactccac	aatggtaggc	1320
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cggcgggatg	gggtctccca	cccggacgca	ggggcagcgt	ggaggctact	gctccggagt	1500
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gagctgctgc	cggcactgga	cgagggtgctg	gctagtga	gcccgttctt	gctgggcagc	1860
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aacagccgct	accagctgac	cttgtggggg	ccagaaggca	acatcctgga	ctatgccaac	1980
aagcagctgg	cggggttggt	ggccaactac	tacacccctc	gctggcggtc	tttcttgagg	2040
gcgtgggttg	acagtgtggc	ccagggcctc	cctttccaac	agcaccagtt	tgacaaaaat	2100
gtcttccaac	tggagcaggc	cttcgttctc	agcaagcaga	ggtaccccag	ccagccgoga	2160
ggagacactg	tggacctggc	caagaagatc	ttcctcaaat	attacccccg	ctgggtggcc	2220
ggctcttggt	gatt					2234

(SEQ ID NO:2)

Fig. 2
SUBSTITUTE SHEET (RULE 26)

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1.1kb OV promoter

gttaagtcot	cagacttggc	aaggagaatg	tagatttcca	cagtatatat	gttttcacaa	60
aaggaaggag	agaaacaaaa	gaaaatggca	ctgactaaac	ttcagctagt	ggtataggaa	120
agtaattctg	cttaacagag	attgcagtga	tctctatgta	tgtcctgaag	aattatgttg	180
tacttttttc	ccccattttt	aaatcaaaca	gtgctttaca	gaggtcagaa	tggttttcttt	240
actgtttgtc	aattctatta	tttcaataca	gaacaatagc	ttctataact	gaaatatatt	300
tgctattgia	tattatgatt	gtccctcgaa	ccatgaacac	tcctccagct	gaatttcaca	360
attcctctgt	catctgccag	gccattaagt	tattcatgga	agatctttga	ggaacactgc	420
aagttcatat	cataaacaca	tttgaaattg	agtattgttt	tgcattgtat	ggagctatgt	480
tttgctgtat	cctcagaata	aaagtttggt	ataaagcatt	cacaccata	aaaagataga	540
tttaaatatt	ccaactatag	gaaagaaaagt	gtgtctgctc	ttcactctag	tctcagttgg	600
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taattgctaa	ttatgttttc	catctccaag	gttcccacat	ttttctgttt	tcttaaagat	840
cccattatct	ggttgtaact	gaagctcaat	ggaacatgag	caatatttcc	cagtcttctc	900
tcccatccaa	cagtcttgat	ggattagcag	aacaggcaga	aaacacattg	ttaccagaa	960
ttaaaaacta	atatttgctc	tccattcaat	ccaaaatgga	cctattgaaa	ctaaaatcta	1020
acccaatccc	attaaatgat	ttctatggtg	tcaaagggtca	aacttctgaa	gggaacctgt	1080
gggtgggtca	caattcagac	tatatattcc	ccagggtca	gccagtgtct	gt	1132

(SEQ ID NO:3)

Fig. 3

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pSIN-OV-1.1-I-rhNaGlu

ggccgcaaga	agaaagctga	aaaactctgt	cccttccaac	aagacccaga	gcactgtagt	60
atcaggggta	aaatgaaaag	tatgttatct	gctgcatcca	gacttcataa	aagctggagc	120
ttaattcaga	aaaaaaatca	gaaagaaatt	acactgtgag	aacagggtgca	attcaactttt	180
cctttacaca	gagtaatact	ggtaactcat	ggatgaaggc	ttaaggggaat	gaaattggac	240
tcacagtact	gagtcatcac	actgaaaaat	gcaacctgat	acatcagcag	aaggtttatg	300
ggggaaaaat	gcagccttcc	aattaagcca	gatatctgta	tgaccaagct	gctccagaat	360
tagtcaactca	aaatctctca	gattaaatta	tcaactgtca	ccaaccattc	ctatgctgac	420
aaggcaattg	cttgtttctct	gtgttcctga	tactacaagg	ctcttcctga	cttcctaaag	480
atgcattata	aaaatcttat	aattcacatt	tctccctaaa	ctttgactca	atcatgggat	540
gttggaat	atggtatatt	actattcaaa	ttgttttctt	tgtaccata	tgtaatgggt	600
cttgtgaatg	tgtctttttg	ttcctttaat	cataataaaa	acatgtttta	gcaaacactt	660
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cttccttccc	gtcttccaac	gactctctga	gttctcggtg	gggtatgttg	gccccctgca	1080
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atgagtgagc	taactcacat	taattgcggt	gcgctcactg	ccgcctttcc	agtcgggaaa	2040
cctgtcgtgc	cagctgcatt	aatgaatcgg	ccaacgcgcg	gggagaggcg	gtttgcgtat	2100
tgggcgctct	tccgcttctt	cgctcaactga	ctcgtcgcc	tgggtcgttc	ggctgcggcg	2160

Fig. 4A

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agcgggtatca	gctcactcaa	aggcggtaaat	acgggttatcc	acagaatcag	gggataaacgc	2220
aggaaagaac	atgtgagcaa	aaggccagca	aaaggccagg	aaccgtaaaa	aggccgcggtt	2280
gctggcggttt	ttccataggc	tcggccccc	tgacgagcat	cacaaaaatc	gacgctcaag	2340
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acaaccgaag	ccccgctttt	cgctaaaca	tgctattgtc	ccctcagtc	agccttgccc	4980
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agtcacaga	gtacagaag	atactctatg	ctgtagccaa	gtctacaagt	ttactattca	5100

Fig. 4B

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gcgacctcct	atattccgcg	tgccagccga	tcaattacca	atccaaccag	ctatcacacg	5160
gaatacaaga	actcgccctac	gctcttcttt	cgggctgctt	ataagcctcc	tgtaattttt	5220
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tgtttttcaca	aaaggaagga	gagaaacaaa	agaaaatggc	actgactaaa	cttcagctag	5340
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gaattatggt	gtactttttt	cccccathtt	taaatcaaac	agtgcctttac	agaggtcaga	5460
atgggtttctt	tactgtttgt	caattctatt	atthcaatac	agaacaatag	cttctataac	5520
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aggaacactg	caagttcata	tcataaacac	atthgaaatt	gagtattggt	ttgcattgta	5700
tggagctatg	ttttgctgta	tcctcagaat	aaaagtttgt	tataaagcat	tcacacccat	5760
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acactaacta	ataattgcta	attatgtttt	ccatctccaa	ggttcccaca	tttttctggt	6060
ttcttaagaa	tcccattatc	tggttgtaac	tgaagctcaa	tggaacatga	gcaatatttc	6120
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aaaacttctc	acctgtgtat	gcattctgca	ctattttatt	atgtgtaaaa	gctttgtgtt	6600
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attctctaga	agtttaattc	ctgcaaagtg	cagctgctga	tcactacaca	agataaaaaat	6840
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aaagaaaatg	agaaaaatgt	gtgtgtgtat	actcacacac	gtggtcagta	aaaacttttg	6960
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ctgggctctg	aaggacttct	gactttcaca	gattatataa	atctcaggaa	agcaactaga	7080
ttcatgctgg	ctccaaaagc	tgtgctttat	ataagcacac	tggctataca	atagttgtac	7140
agttcagctc	tttataatag	aaacagacag	aacaagtata	aatcttctat	tgggtctatgt	7200
catgaacaag	aattcattca	gtggctctgt	tttatagtaa	acattgctat	tttatcatgt	7260
ctgcattttct	cttctgtctg	aatgtcacca	ctaaaattta	actccacaga	aagttttatac	7320
tacagtacac	atgcatatct	ttgagcaaag	caaaccatac	ctgaaagtgc	aatagagcag	7380
aatatgaatt	acatgcgtgt	ctttctccta	gactacatga	cccatataa	attacattcc	7440
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Fig. 4C

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Fig. 4D

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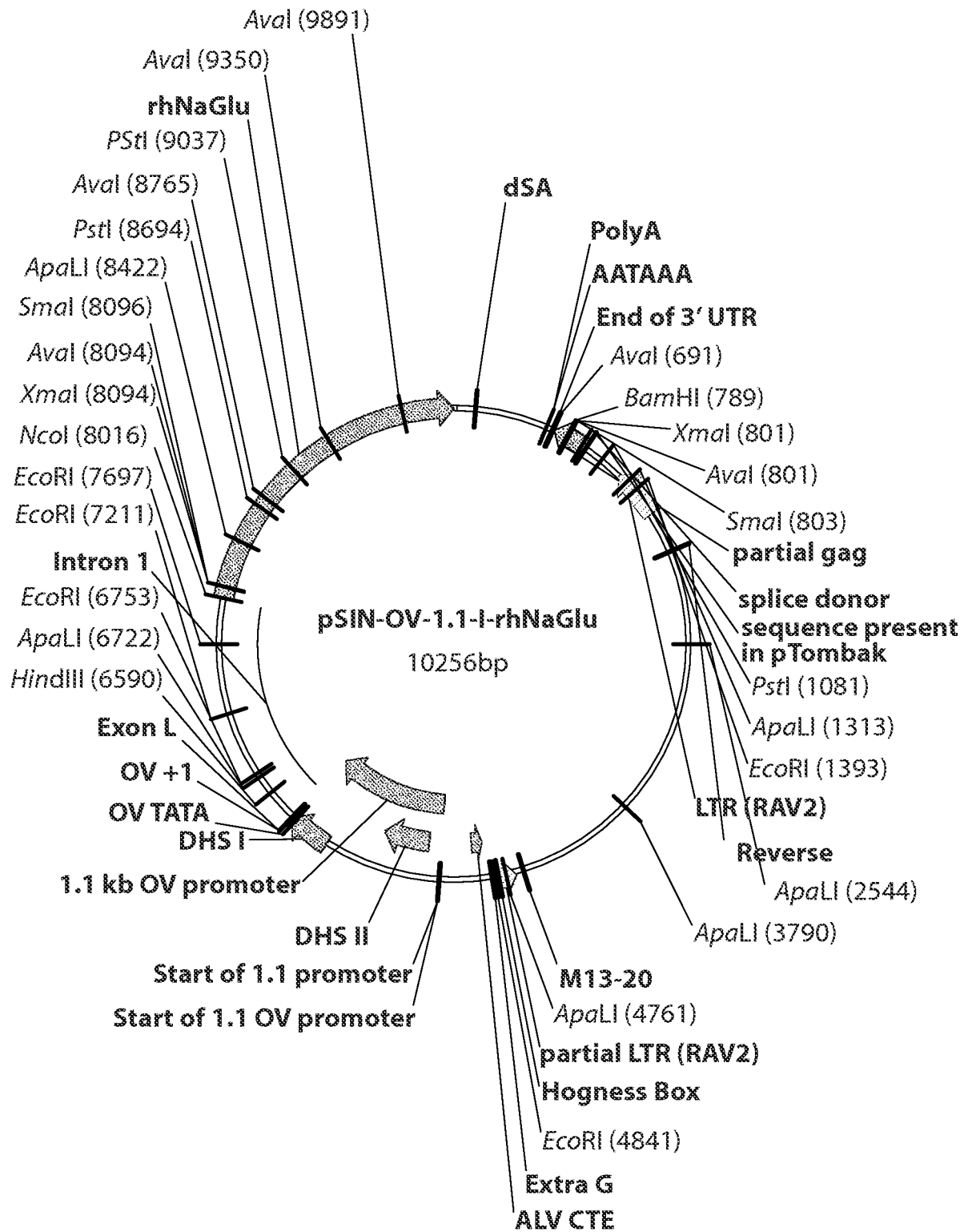


Fig. 5

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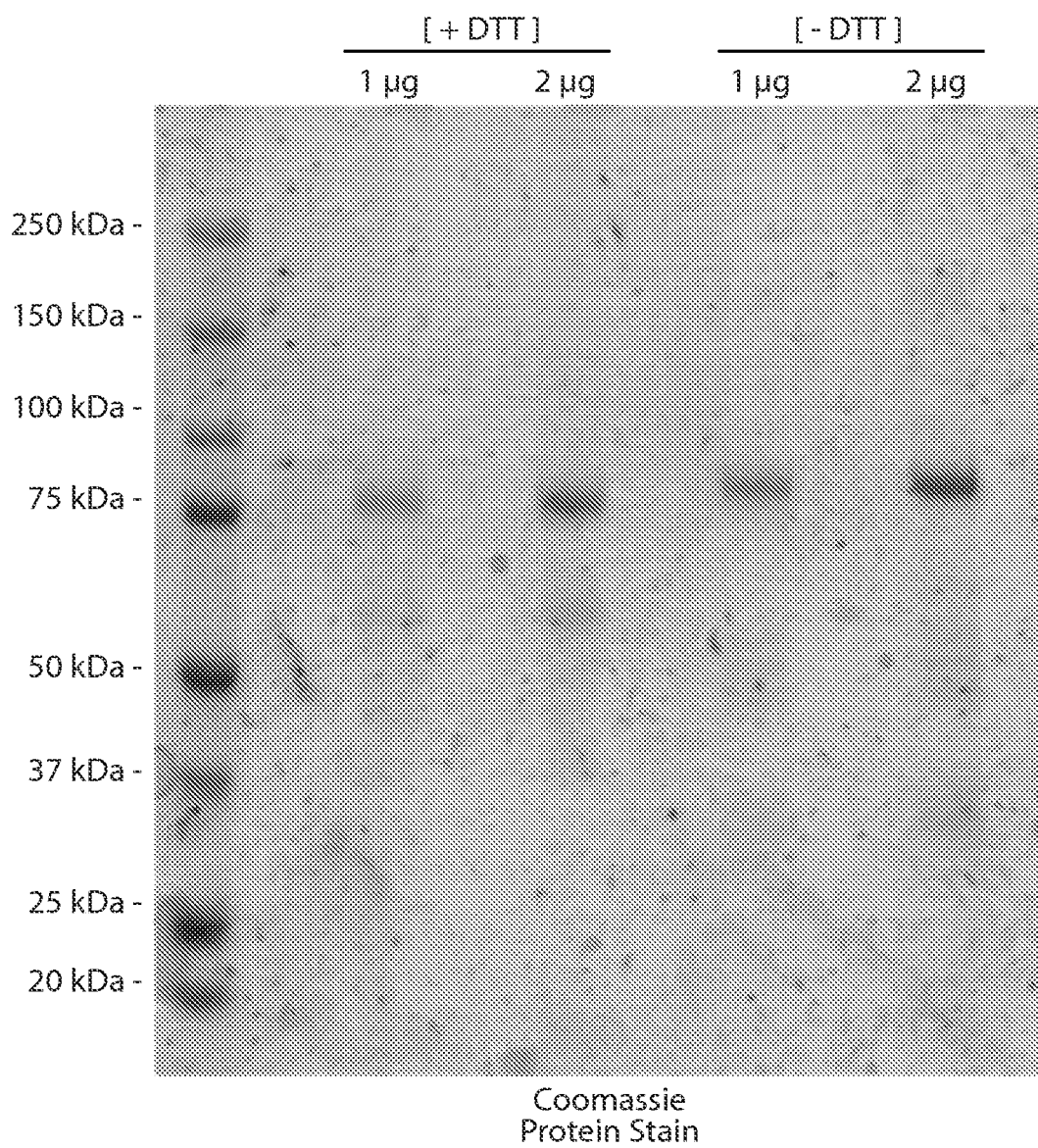


Fig. 6

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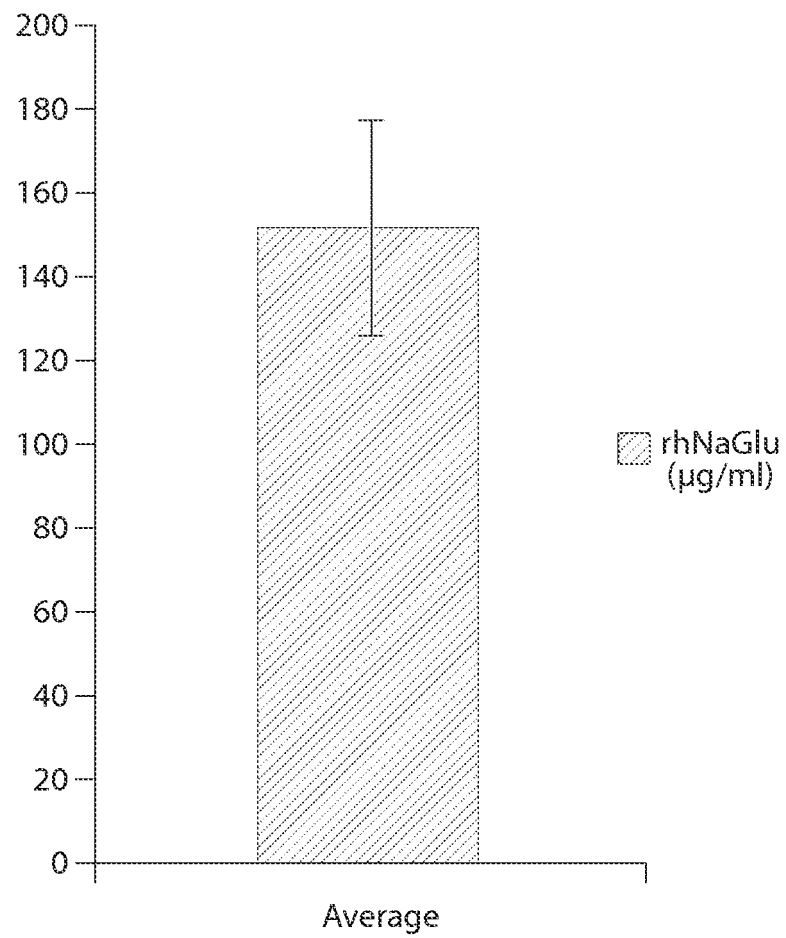


Fig. 7

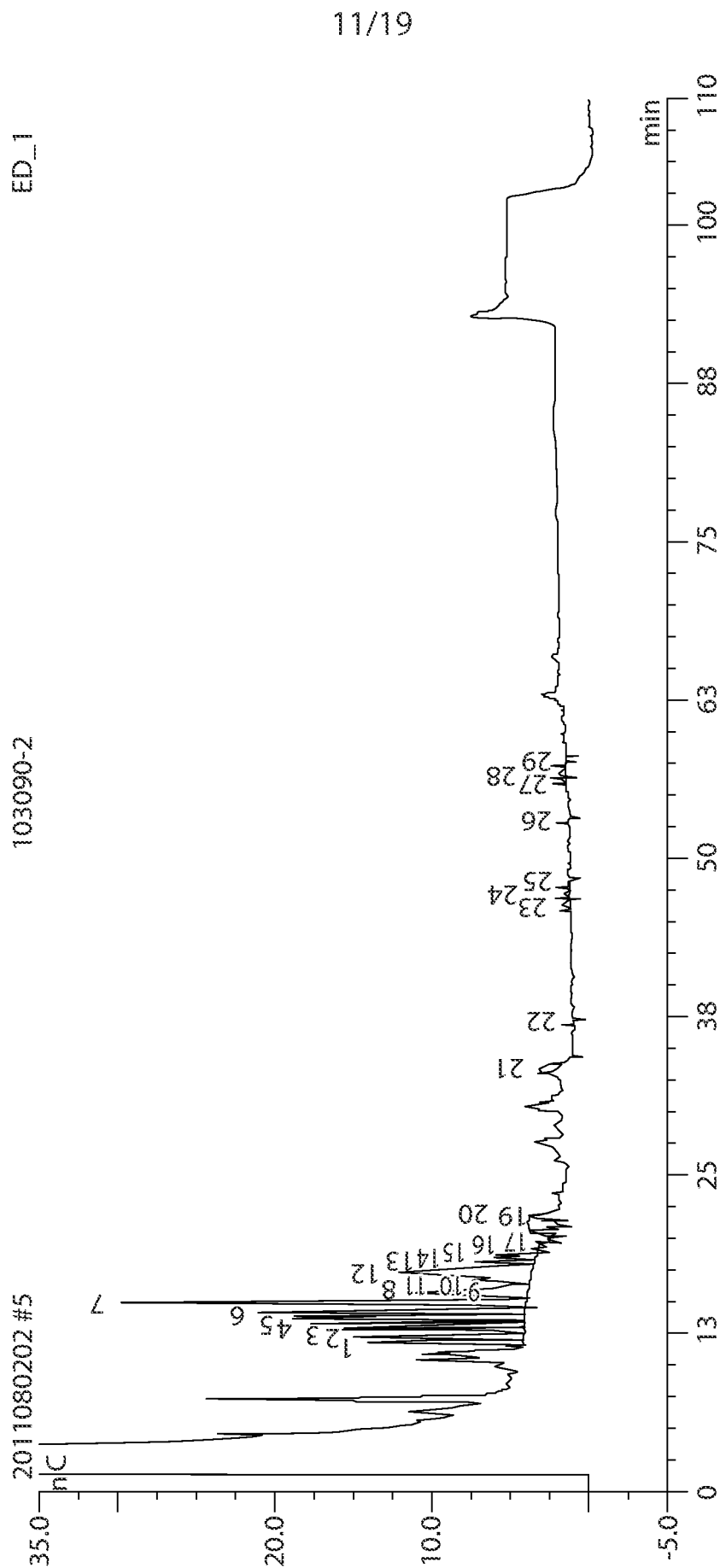
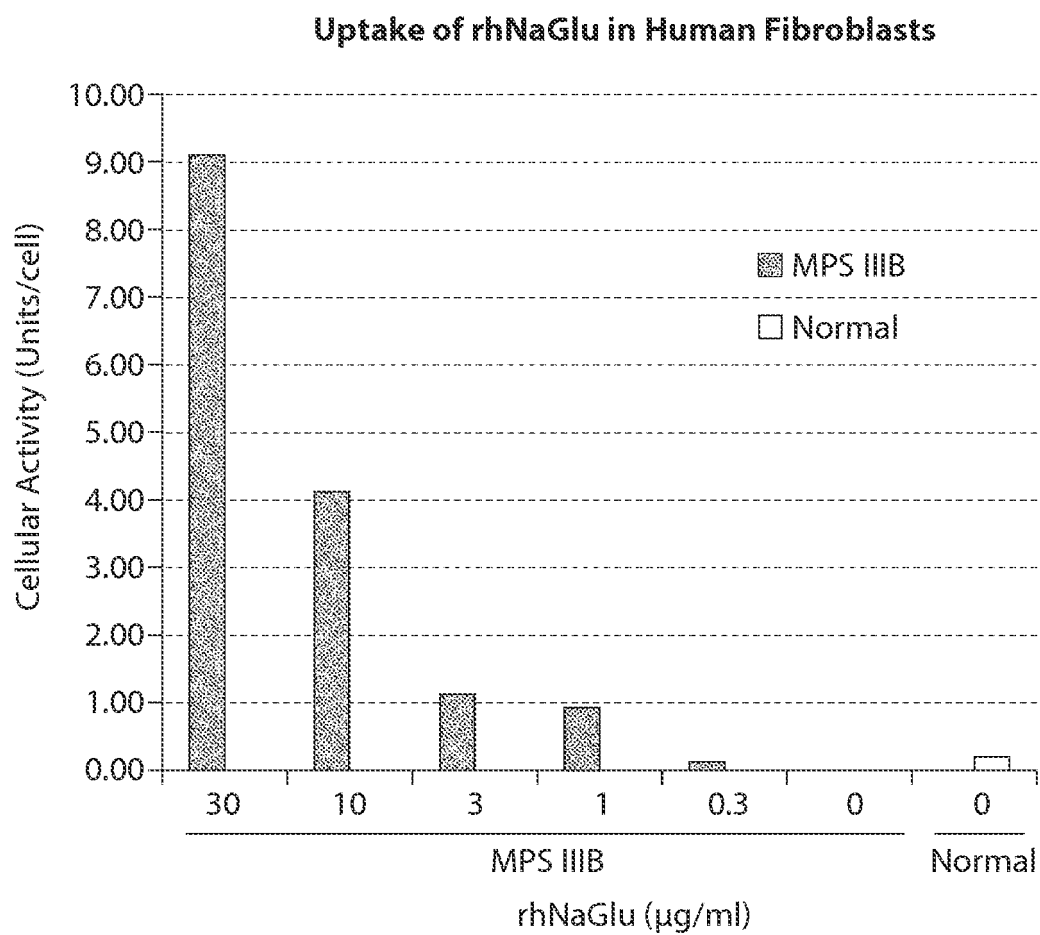


Fig. 8

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**Fig. 9**

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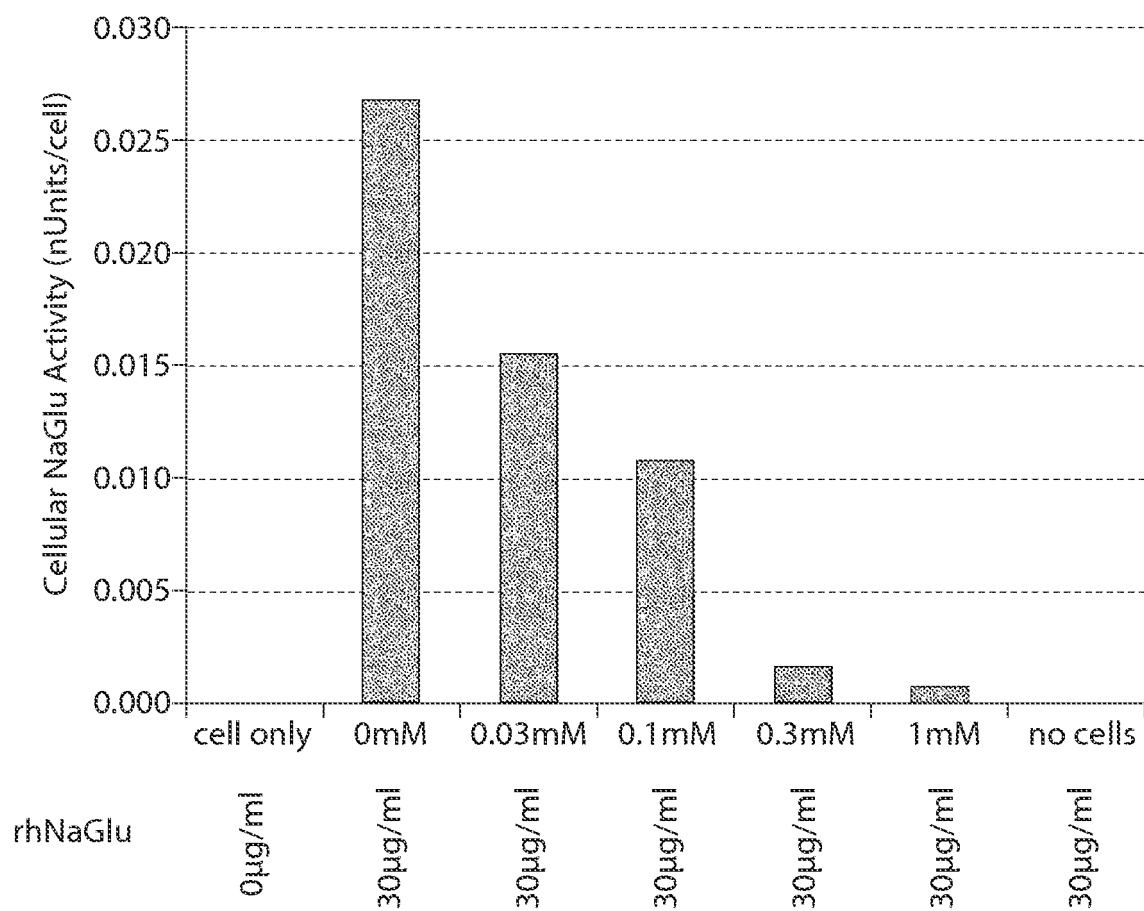


Fig. 10

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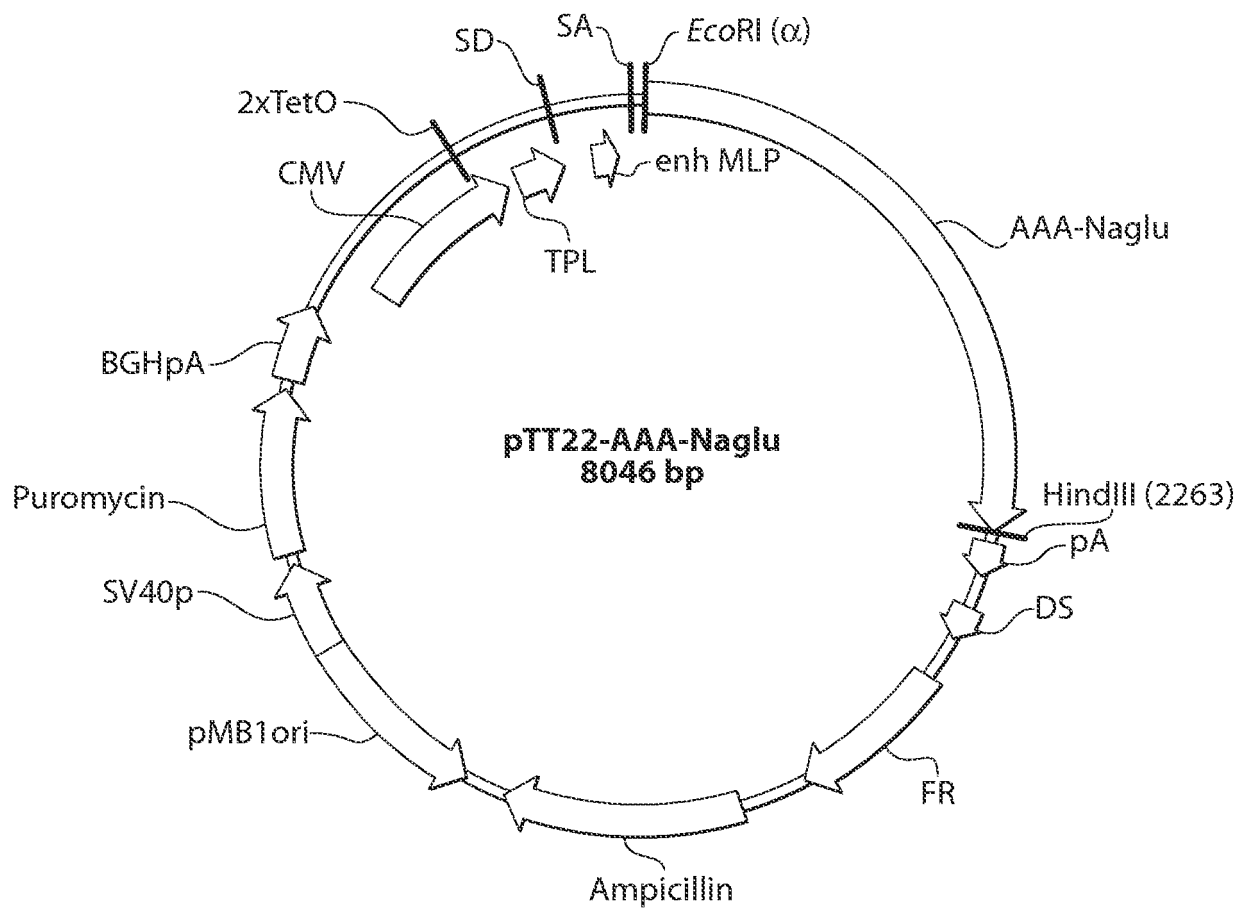


Fig. 11

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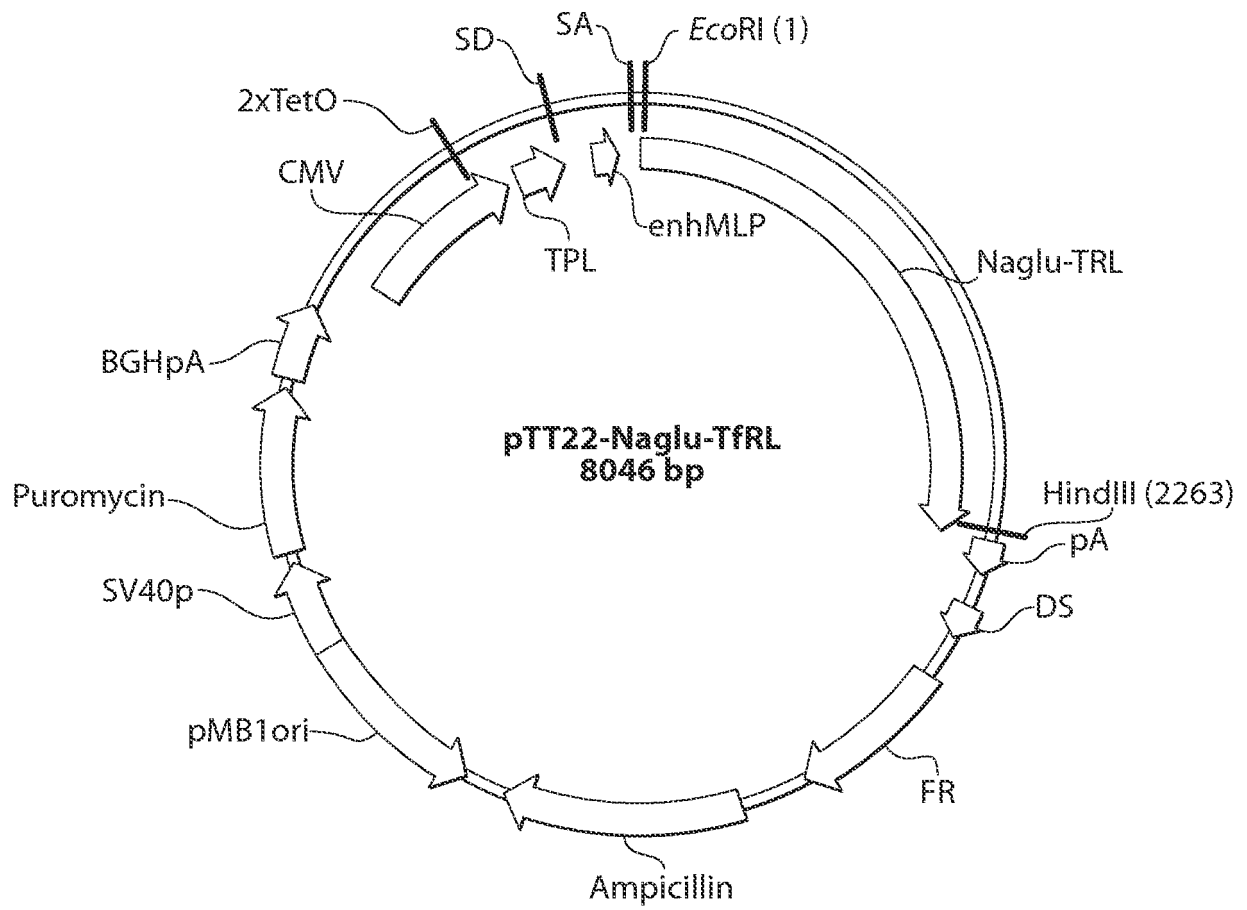
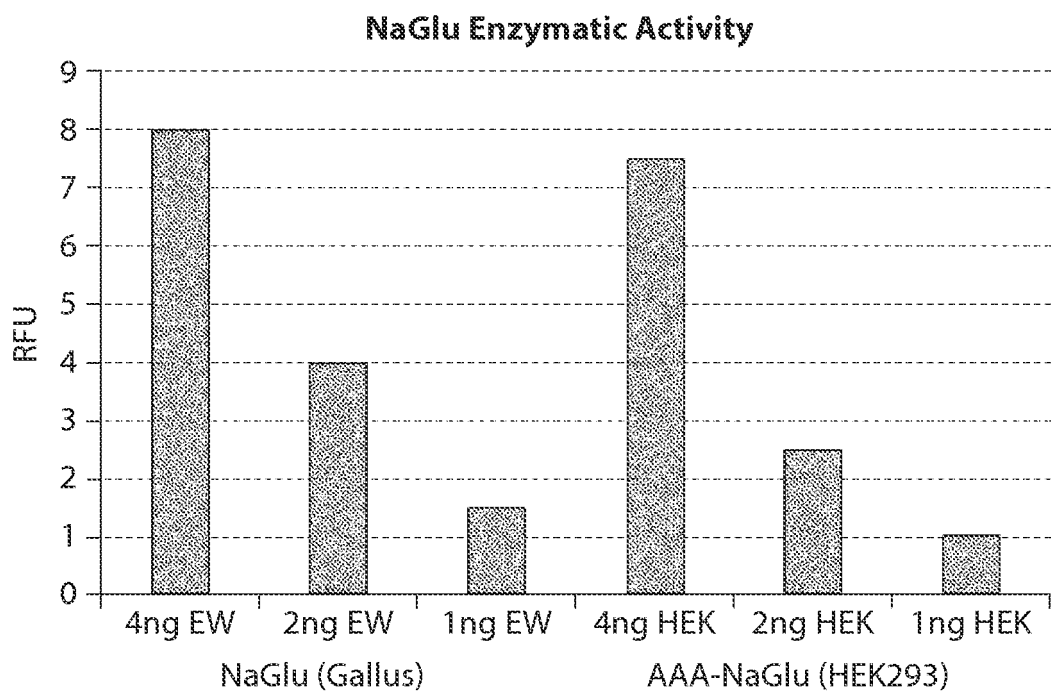
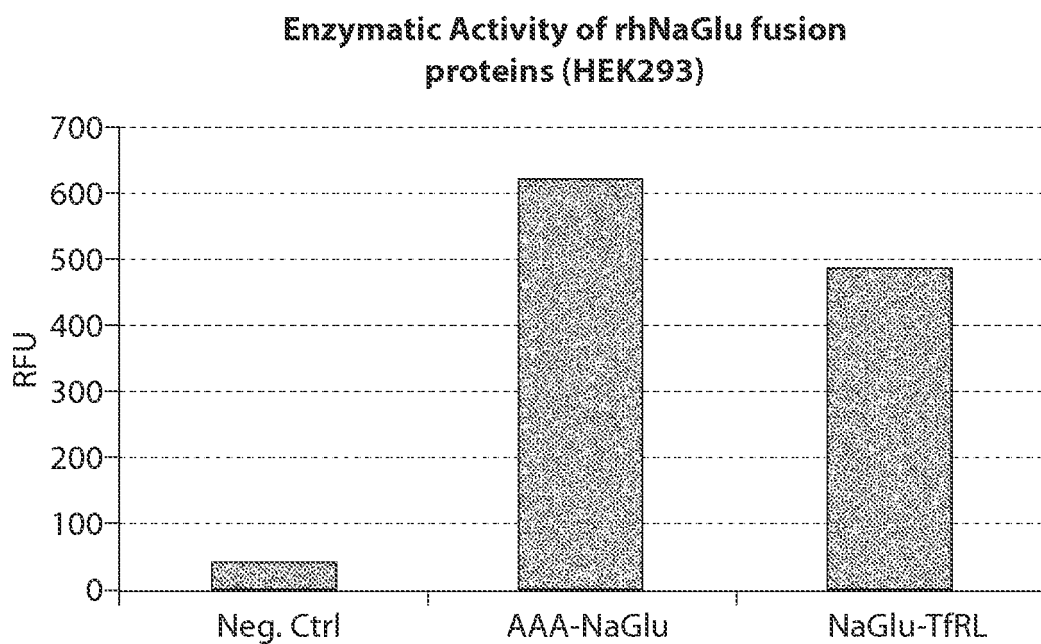


Fig. 12

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**Fig. 13****Fig. 14**

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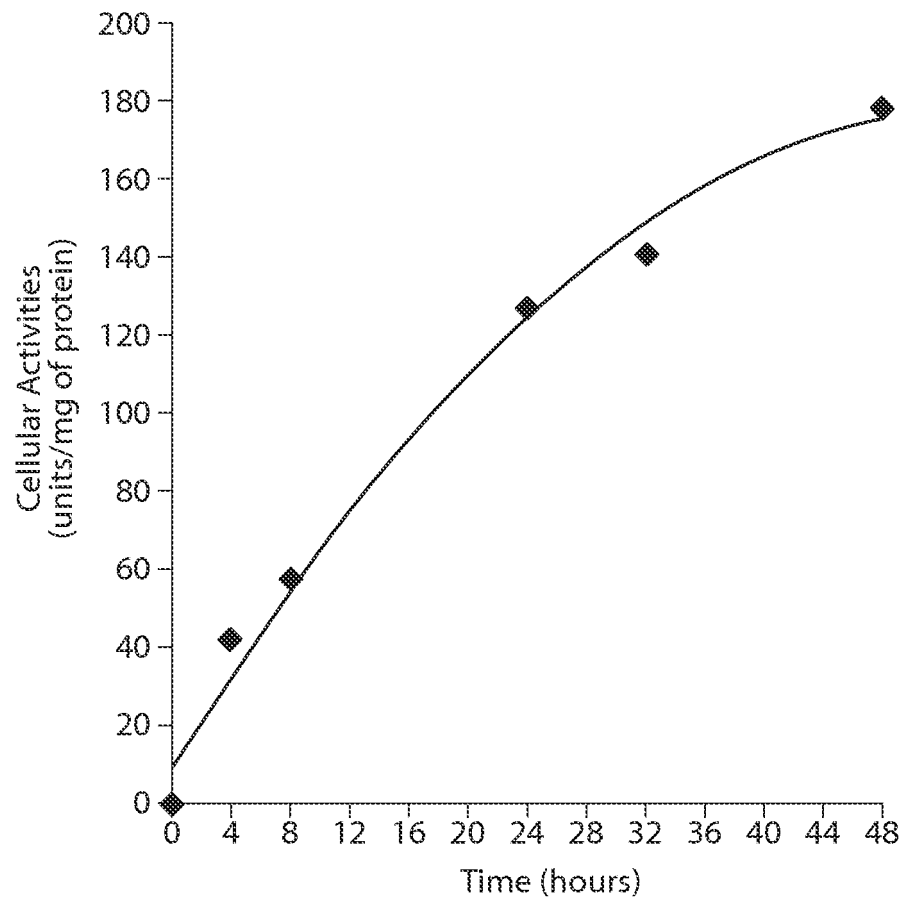


Fig. 15

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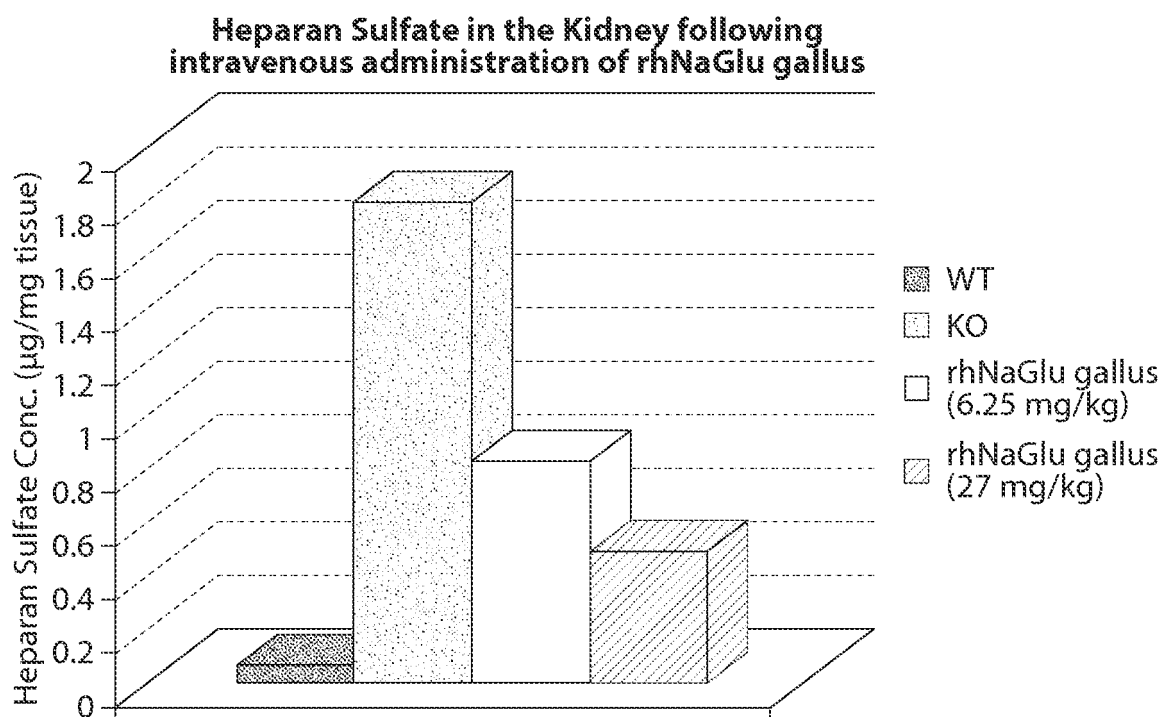


Fig. 16

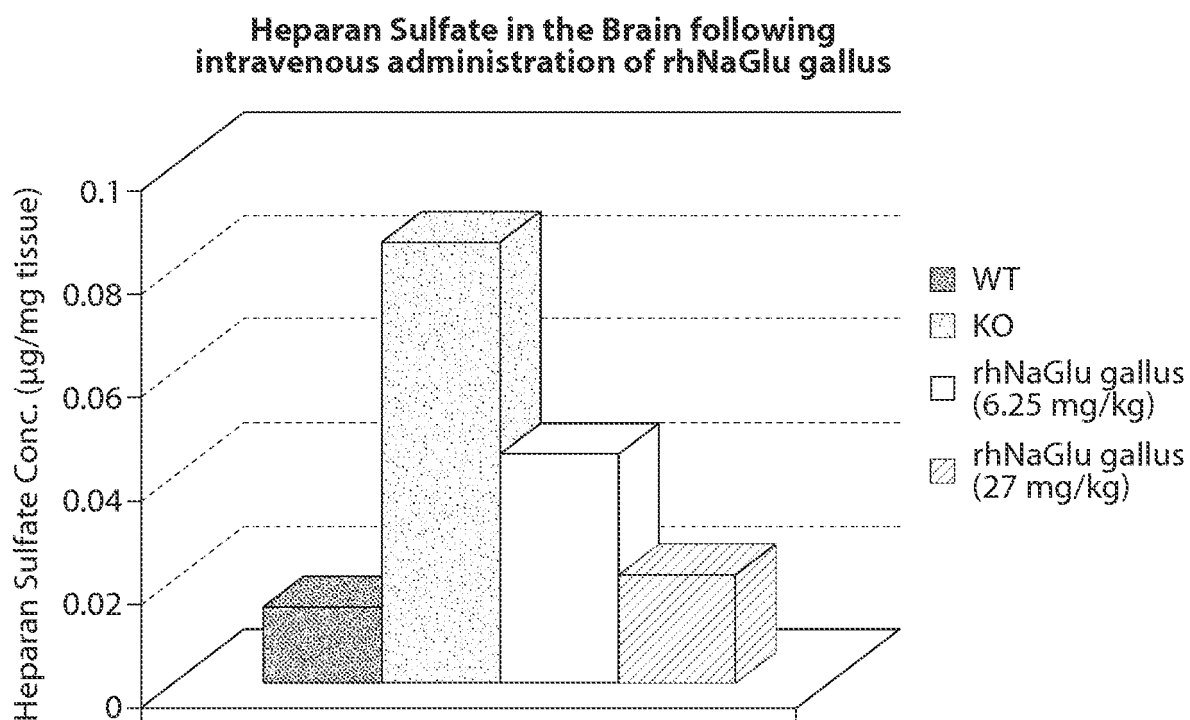


Fig. 17

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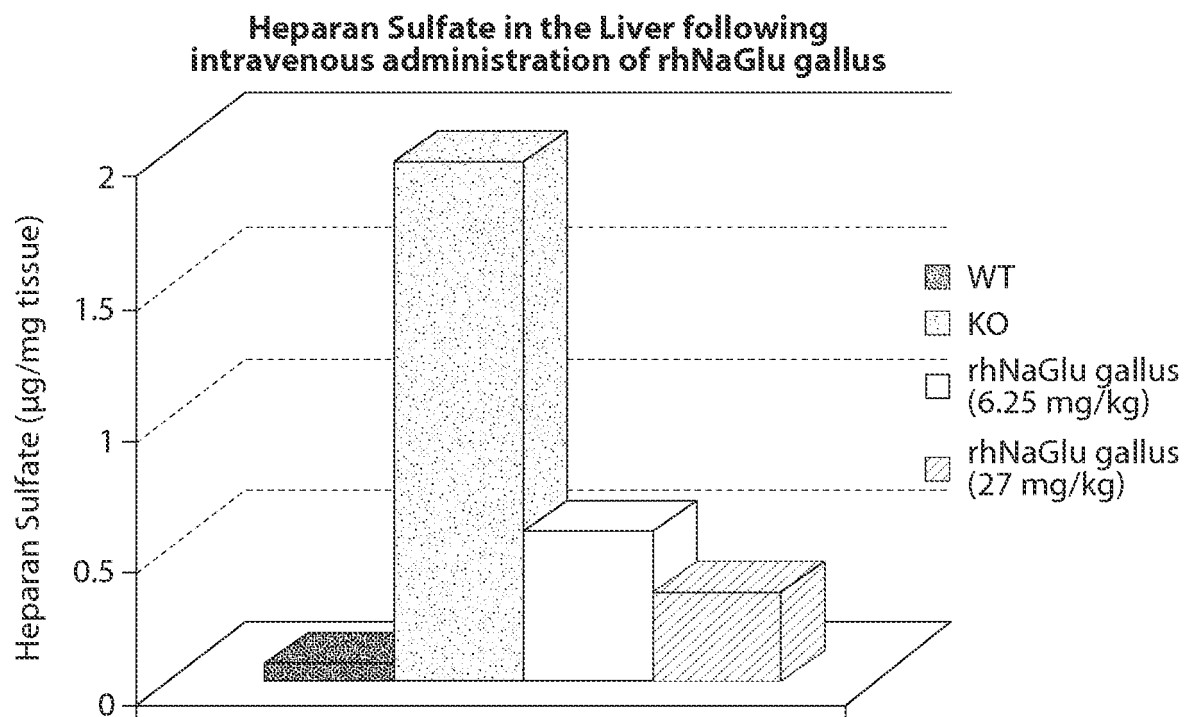


Fig. 18

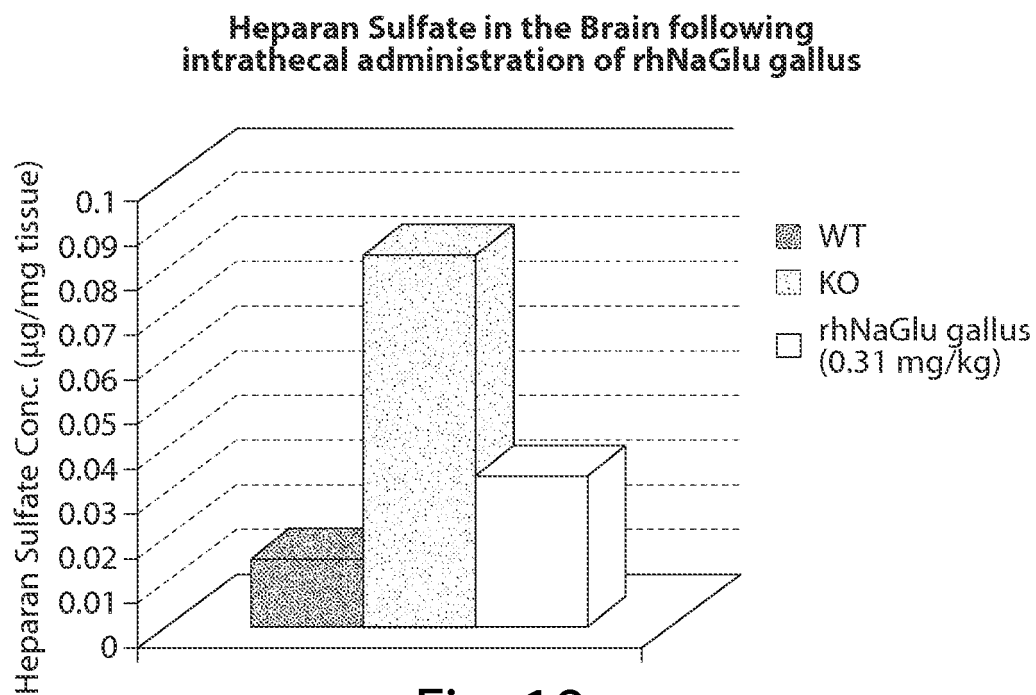


Fig. 19