FIG. 1

	wtFGF1(1-140αα)	FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
		GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD
N-terminal deletions:		
1.	FGF1$^{\Delta NT}$(10-140αα)	---------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
		GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD
2.	FGF1$^{\Delta NT2}$(14-140αα)	---------- ---LYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
		GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD
3.	FGF1$^{\Delta NT3}$(12-140αα)	---------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
		GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD
Point mutations:		
4.	FGF1(1-140αα)	FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
	K12V,N95V	GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD
5.	FGF1(1-140αα)	FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQVSAES VGEVYIKSTE TGQYLAMDTD
	K12V,L46V,E87V,	GLLYGSQTPN EECLFLVRLE ENHYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI
	LFLVLPVSSD	
	N95V,P134V	
Mutations to heparan binding domain:		
6.	FGF1(7-140αα)	-------NYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
	K118N	GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCNRG PRTHYGQKAI LFLPLPVSSD
7.	FGF1(7-140αα)	-------NYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
	K118E	GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCERG PRTHYGQKAI LFLPLPVSSD

FIG. 2A

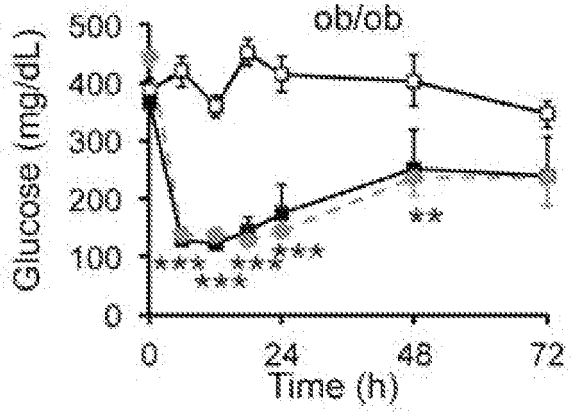


FIG. 2B

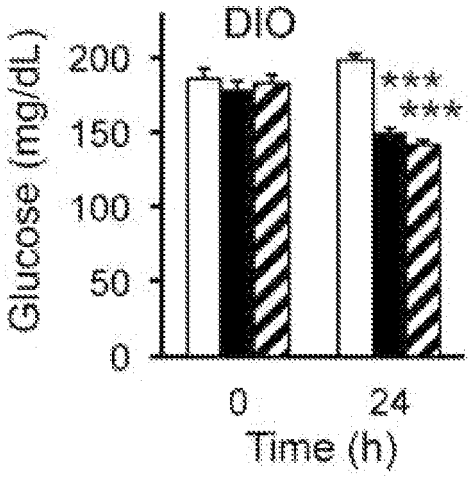


FIG. 2C

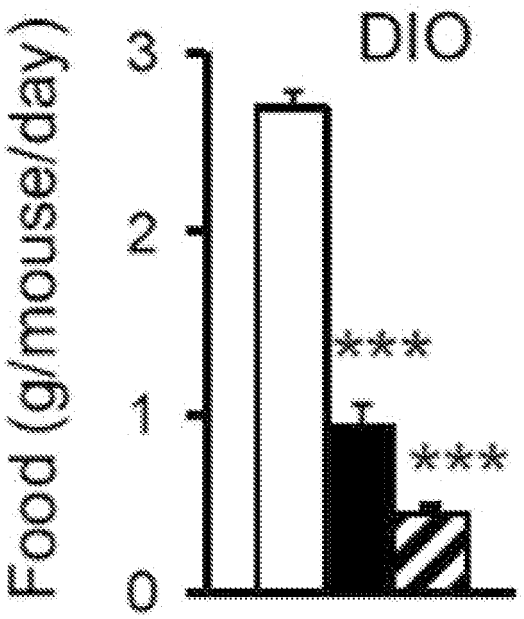


FIG. 3A
M1 Deletions

FGF1(1-140αα)M1	FNLPPGNYKK	PVLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD	
K12V,C117V,P134V	GLLYGSQTPN	EECLFLERLE	ENHYNTYISK	KHAEKNWFVG	LKKNGSVKRG	PRTHYGQKAI	LFLVLPVSSD	
FGF1(1-140αα)M1a	FNLPPGNYKK	PVLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD	
K12V,M95V,C117V,P134V	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSVKRG	PRTHYGQKAI	LFLVLPVSSD	
FGF1 $^{\Delta M1}$(1-140αα)M1	----------K	PVLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD	
K12V,C117V,P134V	GLLYGSQTPN	EECLFLERLE	ENHYNTYISK	KHAEKNWFVG	LKKNGSVKRG	PRTHYGQKAI	LFLVLPVSSD	
FGF1 $^{\Delta M1}$(1-140αα)M1	----------	-VLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD	
K12V,C117V,P134V	GLLYGSQTPN	EECLFLERLE	ENHYNTYISK	KHAEKNWFVG	LKKNGSVKRG	PRTHYGQKAI	LFLVLPVSSD	
FGF1 $^{\Delta M1}$(1-140αα)M1a	----------K	PVLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD	
K12V,M95V,C117V,P134V	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSVKRG	PRTHYGQKAI	LFLVLPVSSD	
FGF1 $^{\Delta M1}$(1-140αα)M1a	----------	-VLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD	
K12V,M95V,C117V,P134V	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSVKRG	PRTHYGQKAI	LFLVLPVSSD	

FIG. 3B

M2 Deletions

FGF1(1-140αα)M2 FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
L44F,C83I,C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FGF1(1-140αα)M2a FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
L44F,C83I,N95V,C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FGF1(1-140αα)M2b FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,C83I,C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FGF1(1-140αα)M2c FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,C83I,N95V,C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FGF1$^{\Delta NT2}$(10-140αα)M2 ---------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
L44F,C83I,C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FGF1$^{\Delta NT3}$(12-140αα)M2 ---------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
L44F,C83I,C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FGF1$^{\Delta NT2}$(10-140αα)M2a ---------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
L44F,C83I,N95V C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FGF1$^{\Delta NT3}$(12-140αα)M2a ---------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
L44F,C83I,N95V C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FGF1$^{\Delta NT2}$(10-140αα)M2b ---------K PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,C83I,C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FGF1$^{\Delta NT3}$(12-140αα)M2b ---------- -VLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,C83I,C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FGF1$^{\Delta NT2}$(10-140αα)M2c ---------K PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,C83I, N95V C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FGF1$^{\Delta NT3}$(12-140αα)M2c ---------- -VLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ$QLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,C83I, N95V C117V,F132W GLLYGSQTPN EE$LFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI L$LPLPVSSD

FIG. 3C

M3 Deletions

```
FGF1(1-140αα)M3          ENLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
L44F,M67I,L73V,V109L     GLVYGSQTPN EECLFLERLE ENHYNTYISK KHAEKLPKWF VGLKKNGSCK RGPRTHYGQK AILFLPLPVSSD
L111I,C117Y,A103G,R119S
Δ104-106 Δ120-122

FGF1(1-140αα)M3a         ENLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,M67I,L73V,V109L GLVYGSQTPN EECLFLERLE ENHYNTYISK KHAEKLPKWF VGLKKNGSCK RGPRTHYGQK AILFLPLPVSSD
L111I,C117Y,A103G,R119S
Δ104-106 Δ120-122

FGF1(1-140αα)M3b         ENLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,M67I,L73V,A88V,V109L GLVYGSQTPN EECLFLERLE ENHYVTYISK KHAEKLPKWF VGLKKNGSCK RGPRTHYGQK AILFLPLPVSSD
L111I,C117Y,A103G,R119S
Δ104-106 Δ120-122

FGF1(1-140αα)M3c         ENLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,M67I,L73V,A88V,T109L GLVYGSQTPN EECLFLERLE ENHYVTYISK KHAEKLPKWF VGLKKNGSCK RGPRTHYGQK AILFLPLPVSSD
L111I,C117Y,A103G,R119S
Δ104-106 Δ120-122

FGF1 ΔM71(1-140αα)M3      ----------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
L44F,M67I,L73V,V109L     GLVYGSQTPN EECLFLERLE ENHYNTYISK KHAEKLPKWF VGLKKNGSCK RGPRTHYGQK AILFLPLPVSSD
L111I,C117Y,A103G,R119S
Δ104-106 Δ120-122

FGF1 ΔM73(1-140αα)M3      ---------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
L44F,M67I,L73V,V109L     GLVYGSQTPN EECLFLERLE ENHYNTYISK KHAEKLPKWF VGLKKNGSCK RGPRTHYGQK AILFLPLPVSSD
L111I,C117Y,A103G,R119S
Δ104-106 Δ120-122

FGF1 ΔM71(1-140αα)M3a    ----------K PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,M67I,L73V,V109L GLVYGSQTPN EECLFLERLE ENHYNTYISK KHAEKLPKWF VGLKKNGSCK RGPRTHYGQK AILFLPLPVSSD
L111I,C117Y,A103G,R119S
Δ104-106 Δ120-122

FGF1 ΔM73(1-140αα)M3a    ---------- -WLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,M67I,L73V,V109L GLVYGSQTPN EECLFLERLE ENHYNTYISK KHAEKLPKWF VGLKKNGSCK RGPRTHYGQK AILFLPLPVSSD
L111I,C117Y,A103G,R119S
Δ104-106 Δ120-122
```

FIG. 3D

```
FGF1 ΔNT2 (1-140αα)M3b  ----------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
L44F,M67L,L73V,M89V,Y103L GLVYGSQTPN EECLFLERLE EMHYVTYISK KHS----WFLG IKNMGSVKG- --THYGQKAI LFLPLPVSSD
L111I,C117V,A103G,R119G
Δ104-106 Δ120-122

FGF1 ΔNT3 (1-140αα)M3b  ----------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
L44F,M67L,L73V,M89V,Y103L GLVYGSQTPN EECLFLERLE EMHYVTYISK KHS----WFLG IKNMGSVKG- --THYGQKAI LFLPLPVSSD
L111I,C117V,A103G,R119G
Δ104-106 Δ120-122

FGF1 ΔNT2 (1-140αα)M3c  ----------V PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
M67V,L44F,M67L,L73V,M89V,Y103L GLVYGSQTPN EECLFLERLE EMHYVTYISK KHS----WFLG IKNMGSVKG- --THYGQKAI LFLPLPVSSD
L111I,C117V,A103G,R119G
Δ104-106 Δ120-122

FGF1 ΔNT3 (1-140αα)M3c  ----------- -VLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
M67V,L44F,M67L,L73V,M89V,Y103L GLVYGSQTPN EECLFLERLE EMHYVTYISK KHS----WFLG IKNMGSVKG- --THYGQKAI LFLPLPVSSD
L111I,C117V,A103G,R119G
Δ104-106 Δ120-122
```

FIG. 4A

1.	FGF1(1-140αα)	FMLAPGNYKK	AYLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	K12V,N95V,K118M	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSCKRG	PRTHYGQKAI	LFLPLPVSSD		
2.	FGF1(1-140αα)	FNLPPGNYKK	AYLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	K12V,N95,K118E	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSCKRG	PRTHYGQKAI	LFLPLPVSSD		
3.	FGF1(1-140αα)	FNLPPGNYKK	AYLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	K12V,N95V,C117V	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSVKRG	PRTHYGQKAI	LFLPLPVSSD		
4.	FGF1(1-140αα)	FNLPPGNYKK	AYLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	K12V,Ø89V,C117V,K118M	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSVKRG	PRTHYGQKAI	LFLPLPVSSD		
5.	FGF1(1-140αα)	FNLPPGNYKK	AYLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	K12V,Ø89V,C117V,K118E	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSVKRG	PRTHYGQKAI	LFLPLPVSSD		
6.	FGF1$^{\Delta NT}$(10-140αα)	----------K	AYLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	K12V,N95V	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSCKRG	PRTHYGQKAI	LFLPLPVSSD		
7.	FGF1$^{\Delta NT2}$(12-140αα)	----------	-VLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	K12V,N95V	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSCKRG	PRTHYGQKAI	LFLPLPVSSD		
8.	FGF1$^{\Delta NT}$(10-140αα)	----------K	AYLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	K13V	GLLYGSQTPN	EECLFLERLE	ENHYNTYISK	KHAEKNWFVG	LKKNGSCKRG	PRTHYGQKAI	LFLPLPVSSD		
9.	FGF1$^{\Delta NT2}$(12-140αα)	----------	-VLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	K13V	GLLYGSQTPN	EECLFLERLE	ENHYNTYISK	KHAEKNWFVG	LKKNGSCKRG	PRTHYGQKAI	LFLPLPVSSD		
10.	FGF1$^{\Delta NT}$(10-140αα)	----------K	AKLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	N95V	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSCKRG	PRTHYGQKAI	LFLPLPVSSD		
11.	FGF1$^{\Delta NT2}$(12-140αα)	----------	-KLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	N95V	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSCKRG	PRTHYGQKAI	LFLPLPVSSD		
12.	FGF1$^{\Delta NT}$(10-140αα)	----------K	AYLLYCSNGG	HFLRILPDGT	VDGTRDRSDQ	HIQLQLSAES	VGEVYIKSTE	TGQYLAMDTD		
	K12V,N95V,K118N	GLLYGSQTPN	EECLFLERLE	ENHYVTYISK	KHAEKNWFVG	LKKNGSCKRG	PRTHYGQKAI	LFLPLPVSSD		

FIG. 4B

```
13. FGF1ΔNT2(12-140aa)  ----------VLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
    K12V,N95W,K118E     GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

14. FGF1ΔNT(10-140aa)   ----------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
    K118N               GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

15. FGF1ΔNT2(12-140aa)  ----------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
    K118E               GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD
```

FIG. 5A

```
FGF1(1-140aa)                FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K9T,K10T                     GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140aa)                FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K9T,K10T,N95V                GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140aa)                FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K9T,K10T,K118M               GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140aa)                FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
Mut MLS                      GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1^ΔNT(1-140aa)                  ----------M PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE
TGQYLAMDTD
Q40P,S47I                    GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1^ΔNT°(1-140aa)           ---------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
Q40P,S47I                    GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140aa)                FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,Q40P,S47I,N95V          GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1^ΔNT(1-140aa)                  ----------S PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE
TGQYLAMDTD
K12V, Q40P,S47I,N95V         GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1^ΔNT°(1-140aa)           ---------- -VLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V, Q40P,S47I,N95V         GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1^ΔNT°(1-140aa)           ---------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
Q40P,S47I,H93G               GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1^ΔNT°(1-140aa)           ---------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
Q40P,S47I,H93G               GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140aa)                FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V Q40P,S47I,H93G,N95V     GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1^ΔNT(1-140aa)                  ----------S PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE
TGQYLAMDTD
K12V Q40P,S47I,H93G,N95V     GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD
```

FIG. 5B

```
FGF1ΔNT3(1-140aa)          ----------  -VLLYCSNGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAMDTD
K12V,C402,S47I,A93G,N95V   ----------  -VLLYCSNGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAMDTD
K12V C402,S47I,A93G,N95V   GLLYGSQTPN  EECLFLERLE  ENHYNTYISK  KHAEKNWFVG  LKKNGSCKRG  PRTHYGQKAI  LFLPLPVSSD

FGF1ΔNT2(1-140aa)          ----------K PKLLYCSNGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE
     TGQYLAMDTD
C117P,K118V                GLLYGSQTPN  EECLFLERLE  ENHYNTYISK  KHAEKNWFVG  LKKNGSCKRG  PRTHYGQKAI  LFLPLPVSSD

FGF1ΔNT3(1-140aa)          ----------  -KLLYCSNGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAMDTD
C117P,K118V                GLLYGSQTPN  EECLFLERLE  ENHYNTYISK  KHAEKNWFVG  LKKNGSCKRG  PRTHYGQKAI  LFLPLPVSSD

FGF1(1-140aa)              PMLPPGNYKK  PKLLYCSNGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAMDTD
K12v,N95V,C117P,K118V      GLLYGSQTPN  EECLFLERLE  ENHYVTYISK  KHAEKNWFVG  LKKNGSCKRG  PRTHYGQKAI  LFLPLPVSSD

FGF1(1-140aa)              PMLPPGNYKK  PKLLYCSNGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAMDTD
R35E FGF1 Antagonist       GLLYGSQTPN  EECLFLERLE  ENHYNTYISK  KHAEKNWFVG  LKKNGSCKRG  PRTHYGQKAI  LFLPLPVSSD
```

FIG. 6A

FGF21 chimeras

human FGF21
mature sequence
MDSDETGFEH SGLWVSVLAG LLLGACQAHP IPDSSPLLQF GGQVRQRYLY TDDAQQTEAH LEIREDGTVG
GAADQSPESL LQLKALKPGV IQILGVKTSR FLCQRPDGAL YGSLHFDPEA CSFRELLLED GYNVYQSEAH
GLPLHLPGNK SPHRDPAPRG PARFLPLPGL PPALPEPPGI LAPQPPDVGS SDPLSMVGPS QGRSPSYAS

P^{168}-S^{209} hFGF21$^{C\text{-}tail}$
βklotho binding
PGL PPALPEPPGI LAPQPPDVGS SDPLSMVGPS QGRSPSYAS

$K^{12}V$,$N^{85}V$ FGF1-FGF21$^{C\text{-}tail}$
FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPGL
PPALPEPPGI LAPQPPDVGS SDPLSMVGPS QGRSPSYAS

FGF1$^{\Delta NT}$-FGF21$^{C\text{-}tail}$
K^{10}-L^{155}FGF1
----------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPGL
PPALPEPPGI LAPQPPDVGS SDPLSMVGPS QGRSPSYAS

FGF1$^{\Delta NTS}$-FGF21$^{C\text{-}tail}$
K^{12}-L^{155}FGF1
---------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPGL
PPALPEPPGI LAPQPPDVGS SDPLSMVGPS QGRSPSYAS

M1-FGF21$^{C\text{-}tail}$
$K^{12}V$,$C^{117}V$,$P^{134}V$ FGF1
----------K PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLVLPGL
PPALPEPPGI LAPQPPDVGS SDPLSMVGPS QGRSPSYAS

M1-FGF21$^{C\text{-}tail}$
$K^{12}V$,$C^{117}V$,$P^{134}V$ FGF1
---------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLVLPGL
PPALPEPPGI LAPQPPDVGS SDPLSMVGPS QGRSPSYAS

M1-FGF21$^{C\text{-}tail}$
$K^{12}V$,$C^{117}V$,$P^{134}V$ FGF1
FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLVLPGL
PPALPEPPGI LAPQPPDVGS SDPLSMVGPS QGRSPSYAS

M2-FGF21$^{C\text{-}tail}$
$L^{44}F$,$C^{88}T$,$C^{117}V$,$P^{132}W$ FGF1
----------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQFQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EETLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LWLPLPGL
PPALPEPPGI LAPQPPDVGS SDPLSMVGPS QGRSPSYAS

FIG. 6B

```
M2-FGF21C-tail  ----------  -KLLYCSNGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAMDTD
L44a,C88T,C117V,P122W FGF1  GILYGSQTPN  EFFLPLPRLE  EMEYNTYISK  KHAEKNWFVG  LKKNGSVKRG  PRTHYGQKAI  LFLPLPVS
                            RRRLFMPLHS  LADQSPPVLQ  SDVLSMVGPS  SQGSGSYAS

M2-FGF21C-tail  PNLPPGNYKK  PKLLYCSNGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAMDTD
L44a,C88T,C117V,P122W FGF1  GILYGSQTPN  EFFLPLPRLE  EMEYNTYISK  KHAEKNWFVG  LKKNGSVKRG  PRTHYGQKAI  LFLPLPVS
                            RRRLFMPLHS  LADQSPPVLQ  SDVLSMVGPS  SQGSGSYAS

M3-FGF21C-tail  ----------K  PKLLYCSNGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAIDTD
L44a,M72I,L134V,Y155L
L111T,C117V,A130G,R133G     GLVYGSQTPN  EFCLPLERLE  EMEYNTVISK  KH------WFVG  --KKNGSVKG  LFLPLPVS
Δ108-129Δ131-132            PRRLFMPLHS  LADQSPPVLQ  SDVLSMVGPS  SQGSGSYAS

M3-FGF21C-tail  ----------  -KLLYCSNGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAIDTD
L44a,M72I,L134V,Y155L
L111T,C117V,A130G,R133G     GLVYGSQTPN  EFCLPLERLE  EMEYNTVISK  KH------WFVG  --KKNGSVKG  LFLPLPVS
Δ108-129Δ131-132            PRRLFMPLHS  LADQSPPVLQ  SDVLSMVGPS  SQGSGSYAS

M3-FGF21C-tail  PNLPPGNYKK  PKLLYCSNGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAIDTD
L44a,M72I,L134V,Y155L
L111T,C117V,A130G,R133G     GLVYGSQTPN  EFCLPLERLE  EMEYNTVISK  KH------WFVG  --KKNGSVKG  LFLPLPVS
Δ108-129Δ131-132            PRRLFMPLHS  LADQSPPVLQ  SDVLSMVGPS  SQGSGSYAS
```

FIG. 7A

FGF19 chimeras

human FGF19 mature sequence
MRSGCVVVHV WILAGLWLAV AGRPLAFSDA GPHVHYGWGD PIRLRHLYTS GPHGLSSCFL RIRADGVVDC
ARGQSAHSLL EIKAVALRTV AIKGVHSVRY LCMGADGKMQ GLLQYSEEDC AFEEEIRPDG YNVYRSEKHR
LPVSLSSAKQ RQLYKNRGFL PLSHFLPMLP MVPEEPEDLR GHLESDMFSS PLETDSMDPF GLVTGLEAVR
SPSFEK

L^{168}–K^{216} h FGF19$^{C\text{-}tail}$
LP MVPEEPEDLR GHLESDMFSS PLETDSMDPF GLVTGLEAVR SPSFEK
βklotho binding

$K^{12}V,N^{35}V$ FGF1–FGF19$^{C\text{-}tail}$
FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLP
MVPEEPEDLR GHLESDMFSS PLETDSMDPF GLVTGLEAVR SPSFEK

FGF1$^{\Delta NT}$–FGF19$^{C\text{-}tail}$
K^{10}–L^{135}FGF1
----------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLP
MVPEEPEDLR GHLESDMFSS PLETDSMDPF GLVTGLEAVR SPSFEK

FGF1$^{\Delta NTS}$–FGF19$^{C\text{-}tail}$
K^{12}–L^{136}FGF1
---------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLP
MVPEEPEDLR GHLESDMFSS PLETDSMDPF GLVTGLEAVR SPSFEK

M1–FGF19$^{C\text{-}tail}$
$K^{12}V,C^{117}V,P^{134}V$ FGF1
FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLVLP
MVPEEPEDLR GHLESDMFSS PLETDSMDPF GLVTGLEAVR SPSFEK

M1–FGF19$^{C\text{-}tail2}$
$K^{12}V,C^{117}V,P^{134}V$ FGF1
----------K PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLVLP
MVPEEPEDLR GHLESDMFSS PLETDSMDPF GLVTGLEAVR SPSFEK

M1–FGF19$^{C\text{-}tail}$
$K^{12}V,C^{117}V,P^{134}V$ FGF1
---------- -VLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLVLP
MVPEEPEDLR GHLESDMFSS PLETDSMDPF GLVTGLEAVR SPSFEK

M2–FGF19$^{C\text{-}tail}$
$L^{44}F,C^{83}T,C^{117}V,P^{132}W$ FGF1
FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ#QLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EETLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LWLPLP
MVPEEPEDLR GHLESDMFSS PLETDSMDPF GLVTGLEAVR SPSFEK

M2–FGF19$^{C\text{-}tail2}$
$L^{44}P,C^{83}I,C^{117}V,P^{132}W$ FGF1
----------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQ#QLSAES VGEVYIKSTE TGQYLAMDTD
GLLYGSQTPN EETLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LWLPLP
MVPEEPEDLR GHLESDMFSS PLETDSMDPF GLVTGLEAVR SPSFEK

FIG. 7B

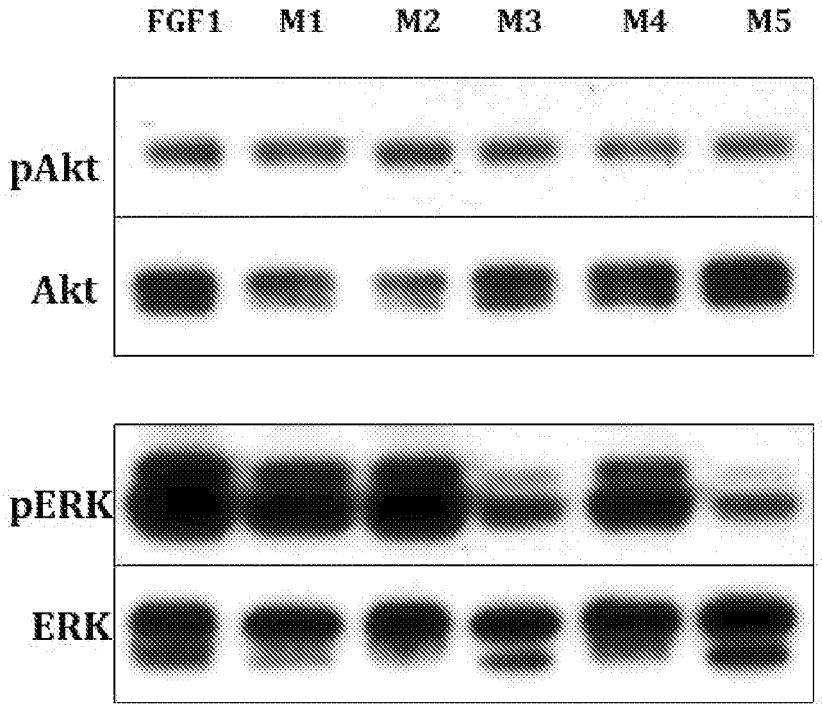
```
M2-FGF19C-tail          ----------  -KLLYCSMGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAMDTD
L44F,C48T,C117V,F132W FGF1  GLLYGSQTPN  EETLFLERLE  ENHYNTYISK  KHAEKNWFVG  LKKNGSYKRG  PRTHYGQKAI  LFLPLPV
                        MVPEEPEDLK  GHLESDMFSS  PLEVGSNDGF  GLVTGLFEVR  SNSRERM

M3-FGF19C-tail          FMLPPGNYKK  PKLLYCSMGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAIDTD
L44F,M47I,L79V,V109L    GLVYGSQTPN  EECLFLERLE  ENHYNTYISK  KHG-----WFLG  LKKNGSYKG-  --THYGQKAI  LFLPLPV
L111I,C117V,A129G,E132G MVPEEPEDLK  GHLESDMFSS  PLEVGSNDGF  GLVTGLFEVR  SNSRERM
Δ104-106Δ120-122

M3-FGF19C-tail          ----------K  PKLLYCSMGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAIDTD
L44F,M47I,L79V,V109L    GLVYGSQTPN  EECLFLERLE  ENHYNTYISK  KHG-----WFLG  LKKNGSYKG-  --THYGQKAI  LFLPLPV
L111I,C117V,A129G,E132G MVPEEPEDLK  GHLESDMFSS  PLEVGSNDGF  GLVTGLFEVR  SNSRERM
Δ104-106Δ120-122

M3-FGF19C-tail          ----------  -KLLYCSMGG  HFLRILPDGT  VDGTRDRSDQ  HIQLQLSAES  VGEVYIKSTE  TGQYLAIDTD
L44F,M47I,L79V,V109L    GLVYGSQTPN  EECLFLERLE  ENHYNTYISK  KHG-----WFLG  LKKNGSYKG-  --THYGQKAI  LFLPLPV
L111I,C117V,A129G,E132G MVPEEPEDLK  GHLESDMFSS  PLEVGSNDGF  GLVTGLFEVR  SNSRERM
Δ104-106Δ120-122
```

FIG. 8



Mutant peptide descriptions
M1: K12V/C117V/P134V
M2: L44F/C83T/C117V/F132W
M3: L44F/M67I/L73V/V109L/L111I/C117V/A103G/R119G/Δ104-106/Δ120-122
M4: N95V/K12V/C117V
M5: K12V/L46V/E87V/N95V/C117V/P134V

FIG. 9

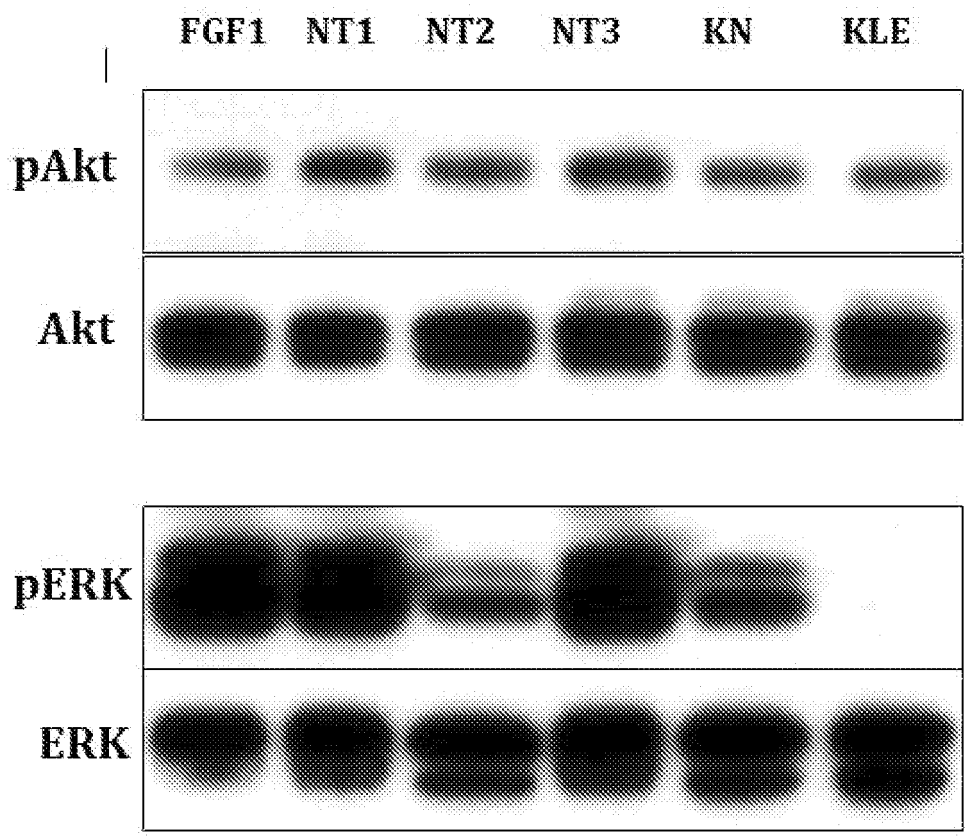
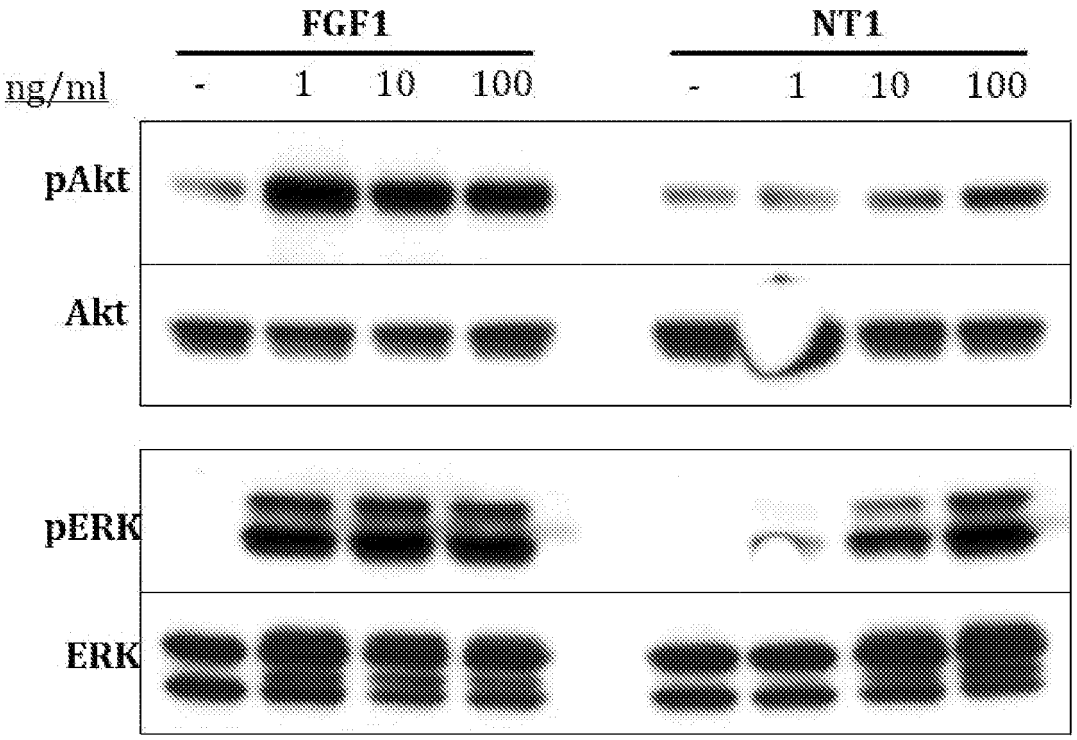


FIG. 10



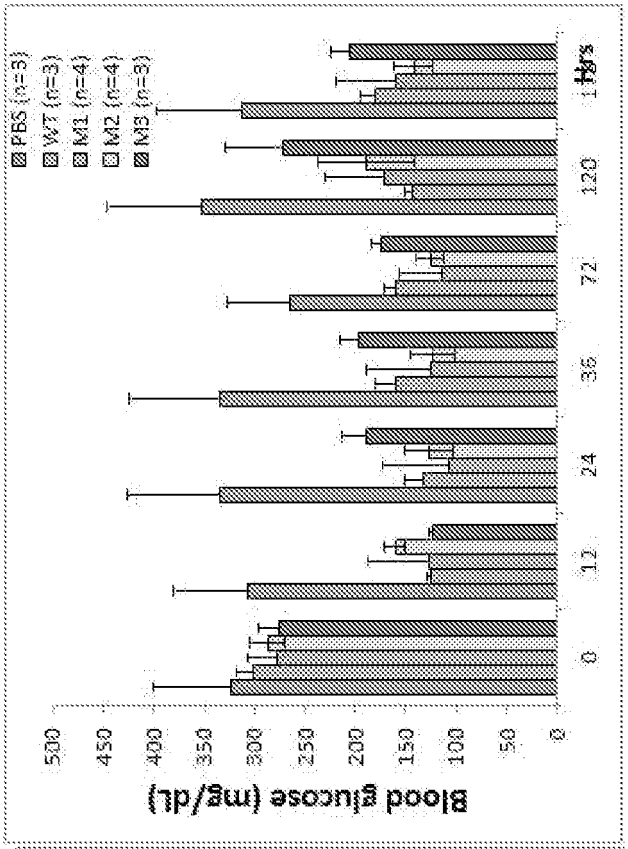


FIG. 11B

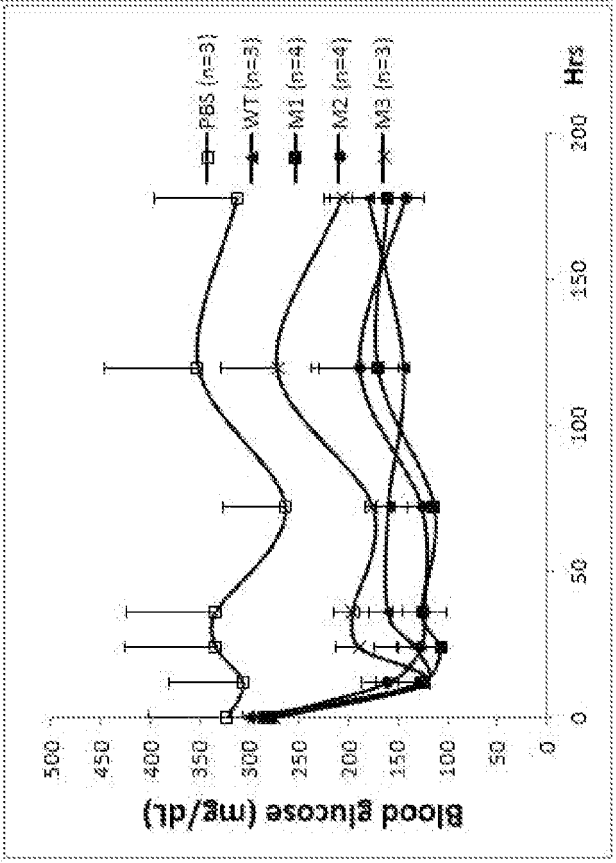


FIG. 11A

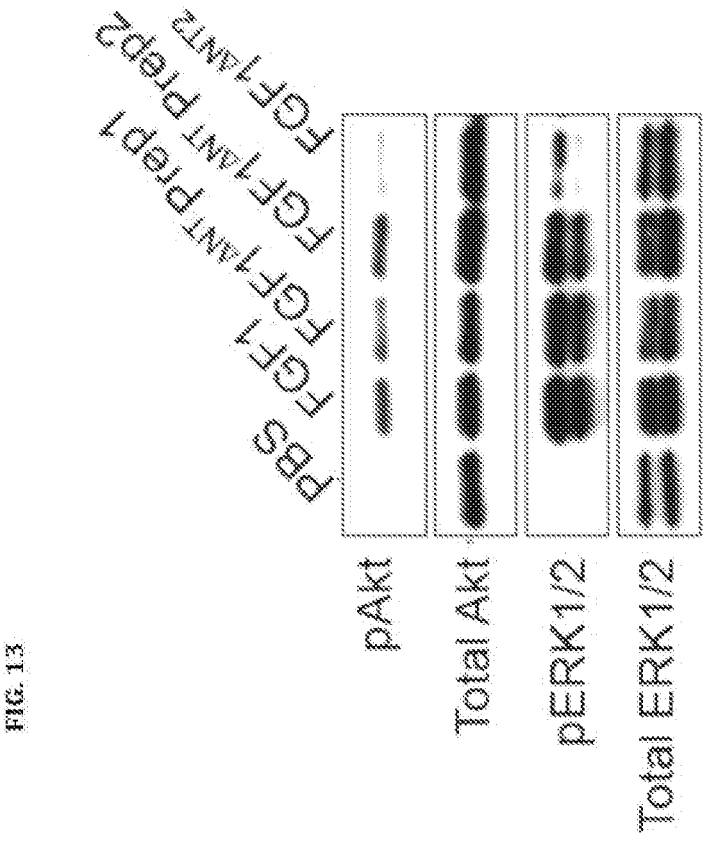

PBS
FGF1
FGF1ΔNT Prep1
FGF1ΔNT Prep2
FGF1ΔNT2
pAkt
Total Akt
pERK1/2
Total ERK1/2

FIG. 13

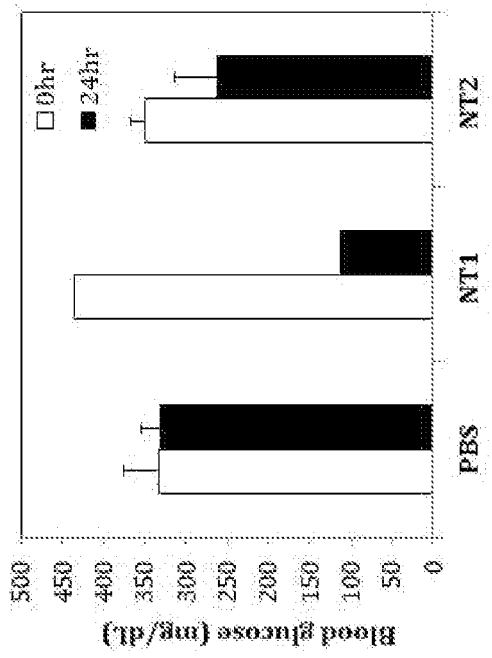

Blood glucose (mg/dL)
500
450
400
350
300
250
200
150
100
50
0
0hr
24hr
PBS
NT1
NT2

FIG. 12

FIG. 14

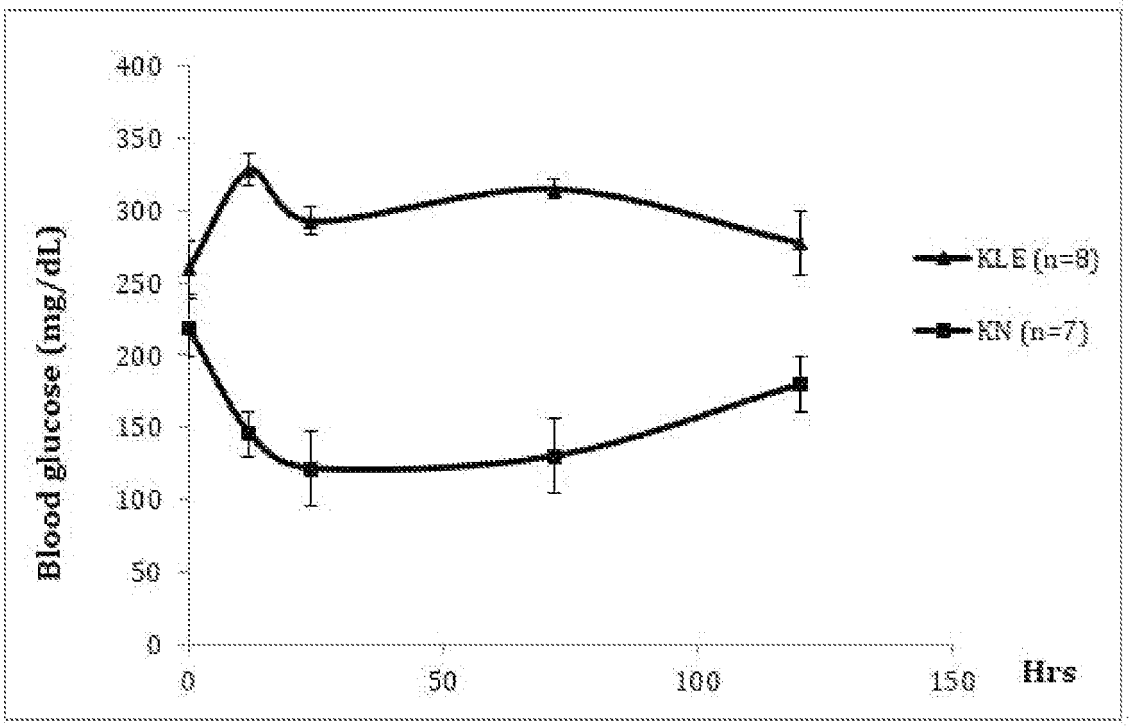
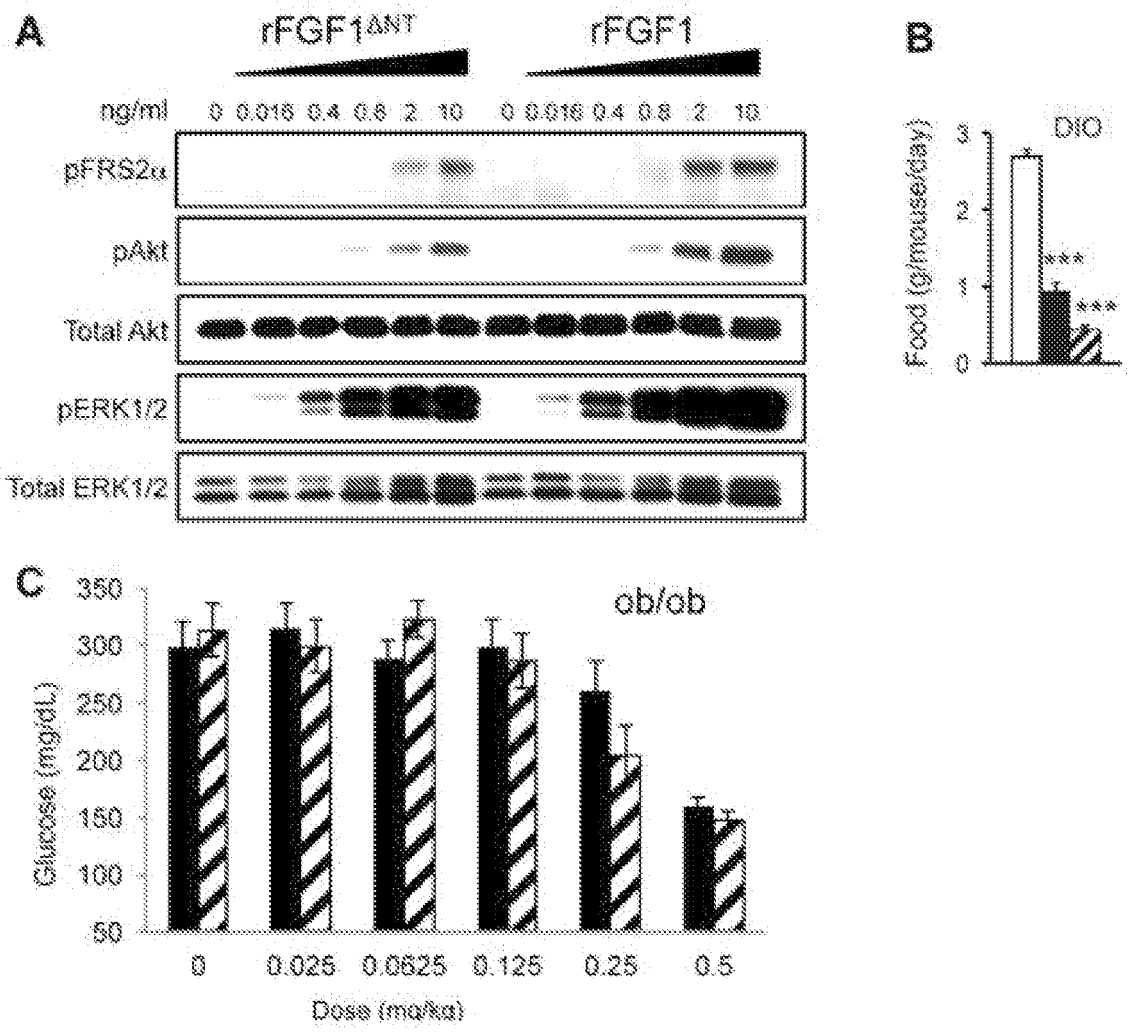

400
350
300
250
200
150
100
50
0
Blood glucose (mg/dL)
0
50
100
150
Hrs
KLE (n=8)
KN (n=7)

FIG. 15A-15C


A
rFGF1ΔNT
rFGF1
ng/ml 0 0.016 0.4 0.8 2 10 0 0.016 0.4 0.8 2 10
pFRS2α
pAkt
Total Akt
pERK1/2
Total ERK1/2
B
DIO
Food (g/mouse/day)
3
2
1
0
***
***
C
ob/ob
Glucose (mg/dL)
350
300
250
200
150
100
50
0
0.025
0.0625
0.125
0.25
0.5
Dose (mg/kg)

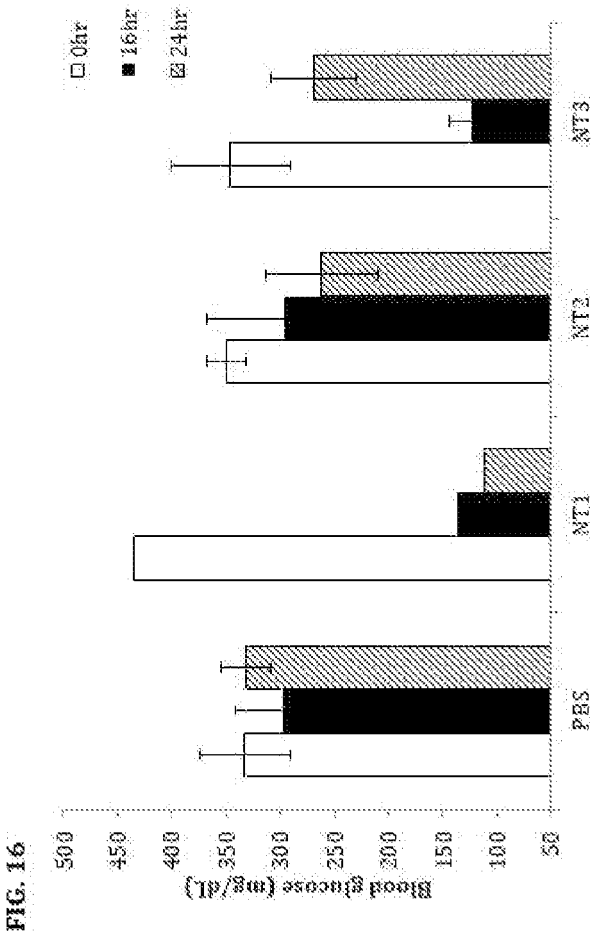


FIG. 16

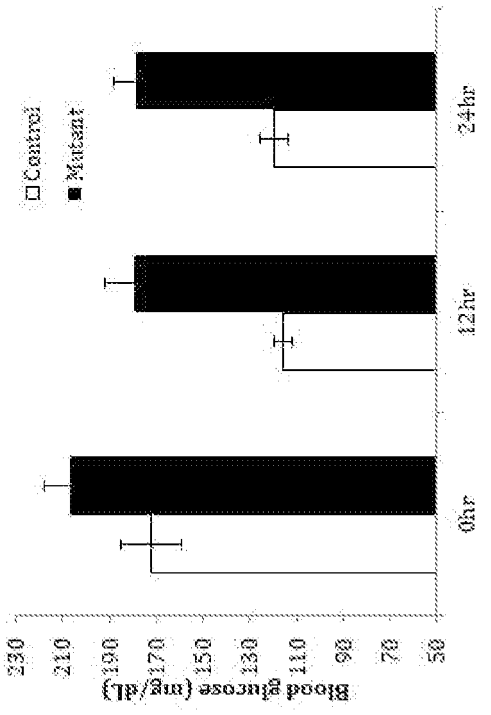


FIG. 17A

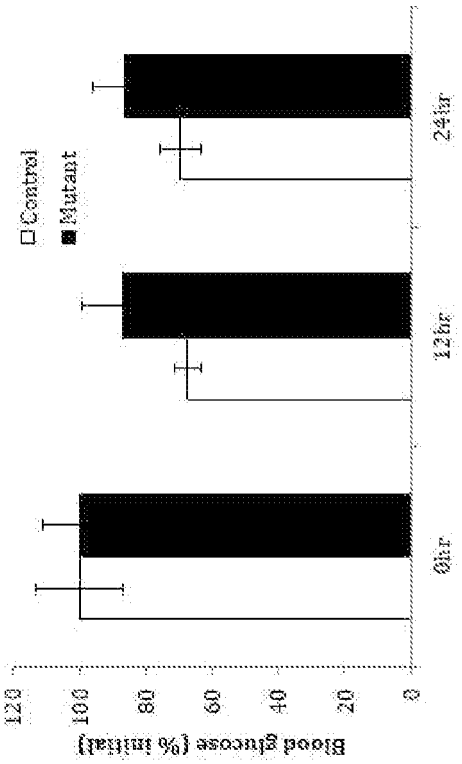


FIG. 17B

FIG. 18A

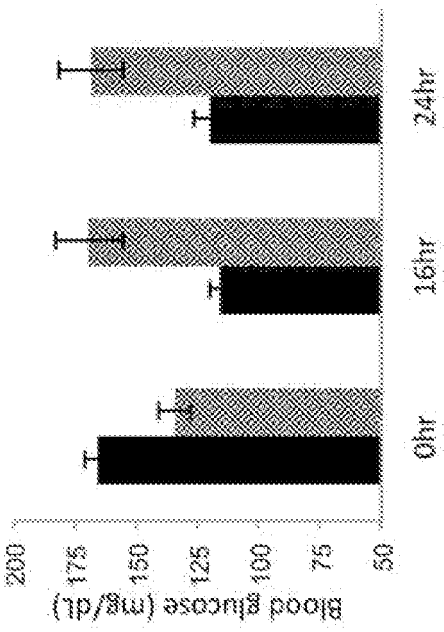


FIG. 18B

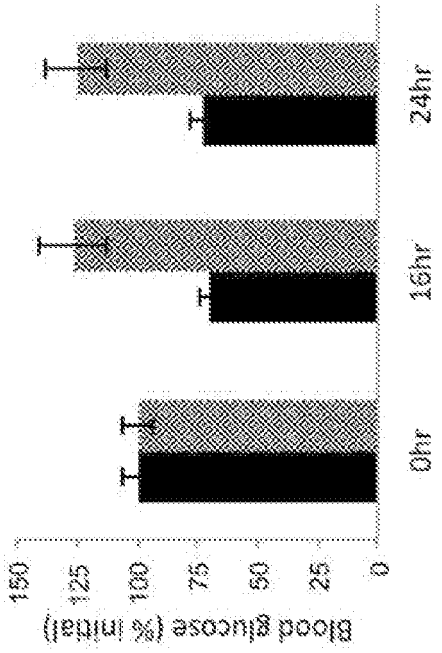


FIG. 19

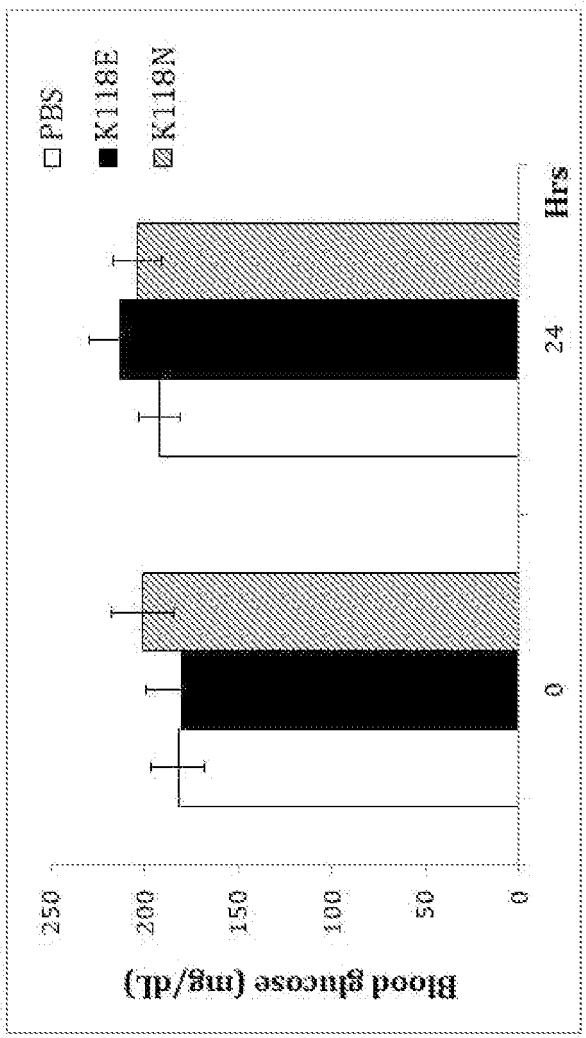


FIG. 20

```
wtFGF1(1-140αα)          FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
                         GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140αα)KKK         FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,K118V        GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LDQNGSCVRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140αα)KKK         FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,C117V,K118V  GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LDQNGSVVRG PRTHYGQKAI LFLPLPVSSD

FGF1ΔNT(1-140αα)KKK      ---------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,K118V        GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LDQNGSCVRG PRTHYGQKAI LFLPLPVSSD

FGF1ΔNT2(1-140αα)KKK     ---------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,K118V        GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LDQNGSCVRG PRTHYGQKAI LFLPLPVSSD

FGF1ΔNT(1-140αα)KKK      ---------K PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,C117V,K118V  GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LDQNGSVVRG PRTHYGQKAI LFLPLPVSSD

FGF1ΔNT2(1-140αα)KKK     ---------- -KLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,C117V,K118V  GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LDQNGSVVRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140αα)KKK         FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,W99V,K112D,K113Q,K118V GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LDQNGSCVRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140αα)KKK         FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,W99V,K112D,K113Q,C117V,K118V GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LDQNGSVVRG PRTHYGQKAI LFLPLPVSSD
```

FIG. 21

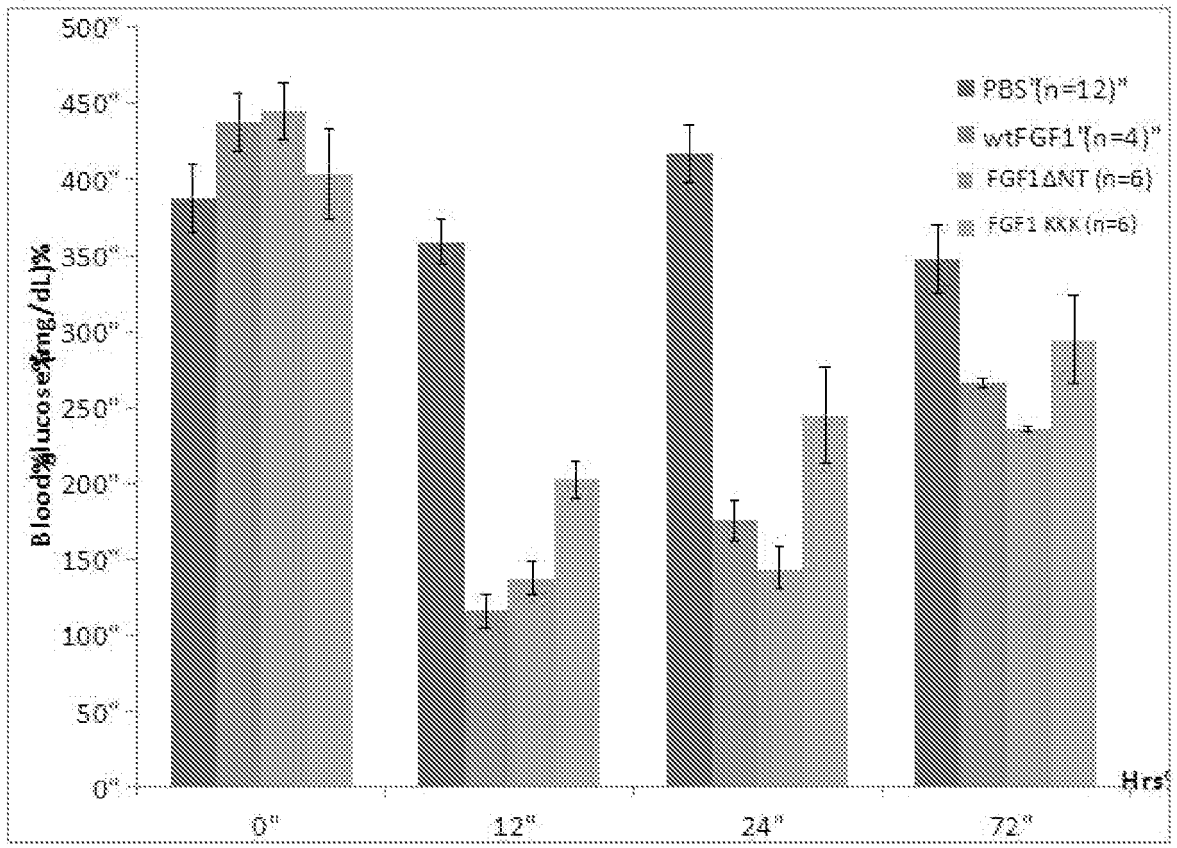

500"
450"
400"
350"
300"
250"
200"
150"
100"
50"
0"
Blood glucose (mg/dL)
PBS (n=12)
wtFGF1 (n=4)
FGF1ΔNT (n=6)
FGF1 KKK (n=6)
Hrs
0"
12"
24"
72"

FIG. 22

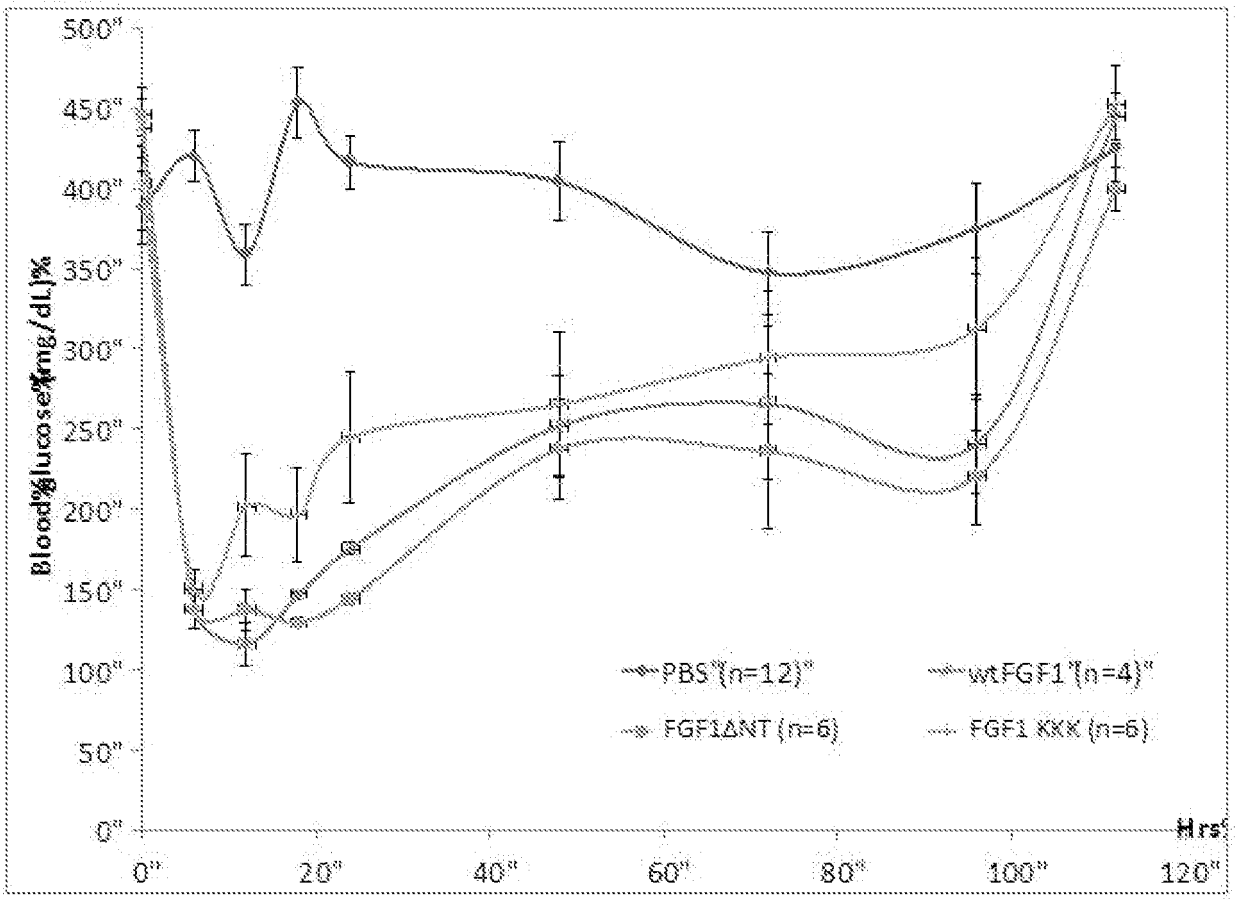

500"
450"
400"
350"
300"
250"
200"
150"
100"
50"
0"
Blood Glucose (mg/dL)
0"
20"
40"
60"
80"
100"
120"
Hrs
PBS (n=12)
wtFGF1 (n=4)
FGF1ΔNT (n=6)
FGF1 KKK (n=6)

FIG. 23

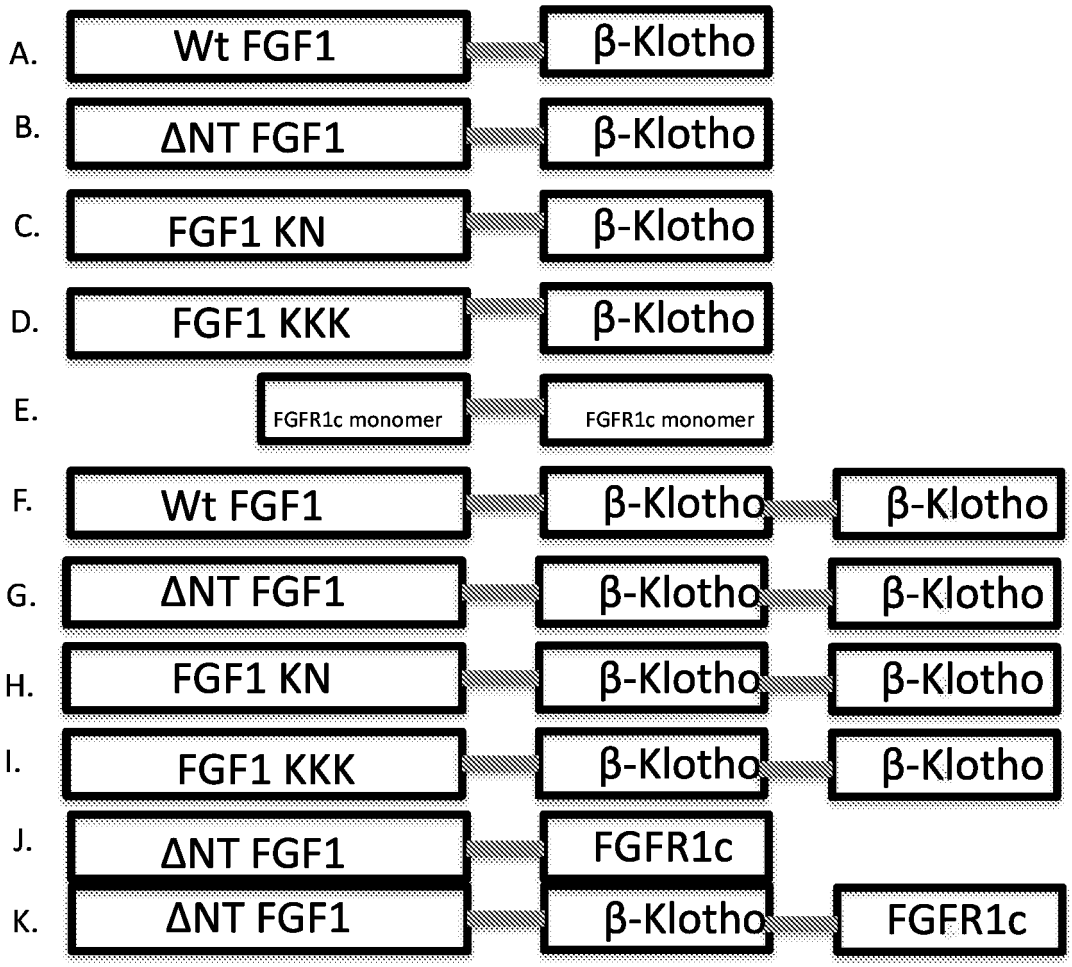

A.
Wt FGF1
β-Klotho
B.
ΔNT FGF1
β-Klotho
C.
FGF1 KN
β-Klotho
D.
FGF1 KKK
β-Klotho
E.
FGFR1c monomer
FGFR1c monomer
F.
Wt FGF1
β-Klotho
β-Klotho
G.
ΔNT FGF1
β-Klotho
β-Klotho
H.
FGF1 KN
β-Klotho
β-Klotho
I.
FGF1 KKK
β-Klotho
β-Klotho
J.
ΔNT FGF1
FGFR1c
K.
ΔNT FGF1
β-Klotho
FGFR1c

FIG. 24

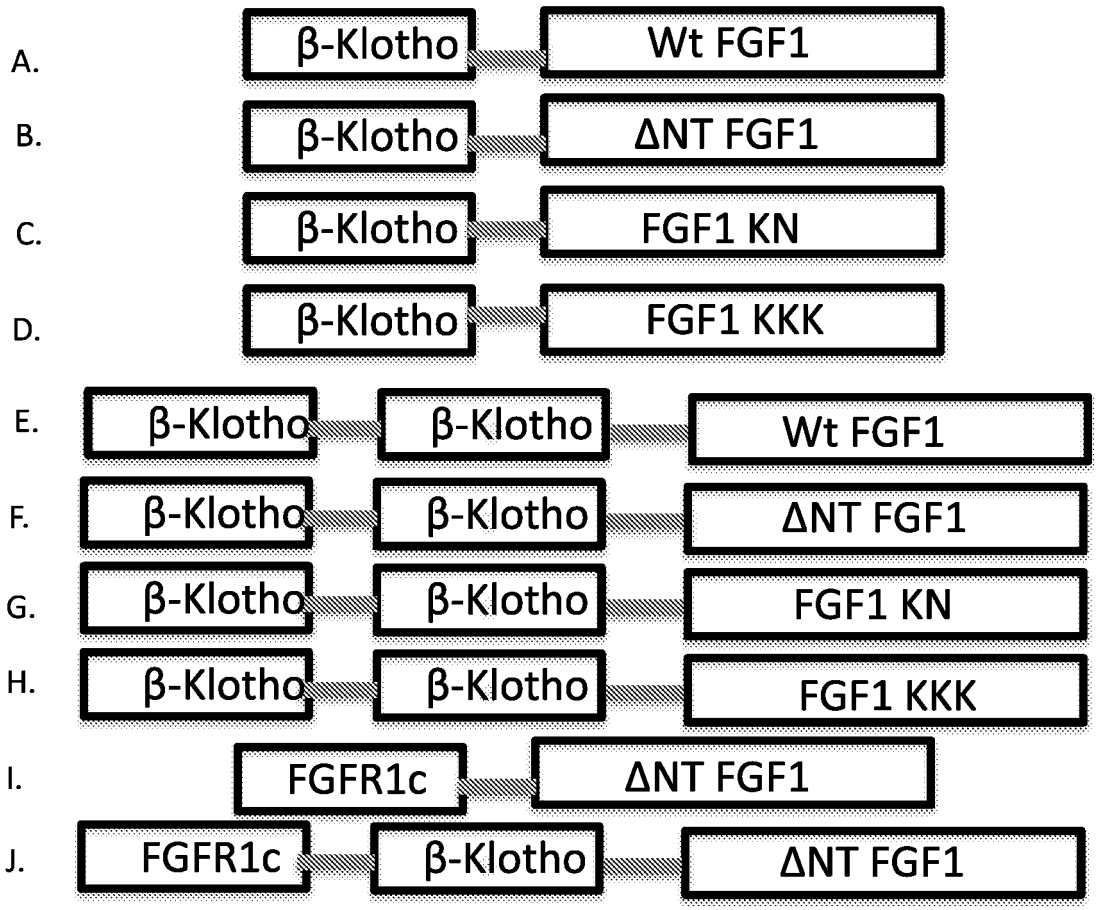

A.
β-Klotho
Wt FGF1
B.
β-Klotho
ΔNT FGF1
C.
β-Klotho
FGF1 KN
D.
β-Klotho
FGF1 KKK
E.
β-Klotho
β-Klotho
Wt FGF1
F.
β-Klotho
β-Klotho
ΔNT FGF1
G.
β-Klotho
β-Klotho
FGF1 KN
H.
β-Klotho
β-Klotho
FGF1 KKK
I.
FGFR1c
ΔNT FGF1
J.
FGFR1c
β-Klotho
ΔNT FGF1

FIG. 25

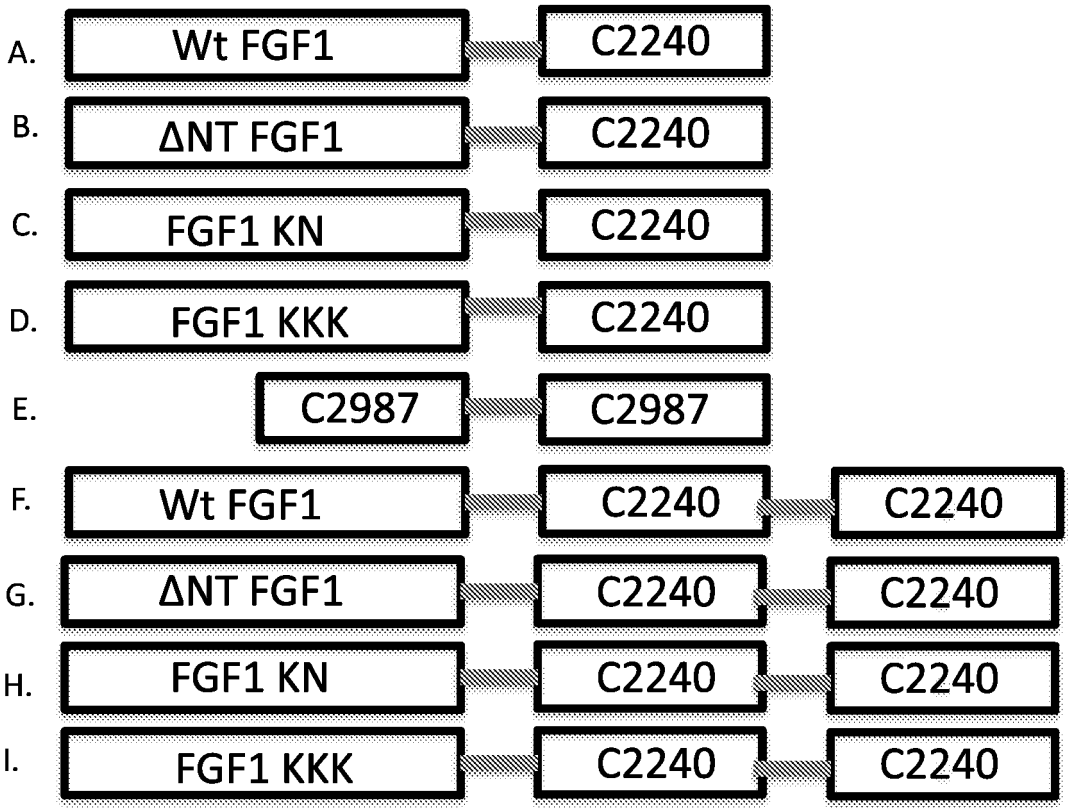

A.
Wt FGF1
C2240
B.
ΔNT FGF1
C2240
C.
FGF1 KN
C2240
D.
FGF1 KKK
C2240
E.
C2987
C2987
F.
Wt FGF1
C2240
C2240
G.
ΔNT FGF1
C2240
C2240
H.
FGF1 KN
C2240
C2240
I.
FGF1 KKK
C2240
C2240

FIG. 26

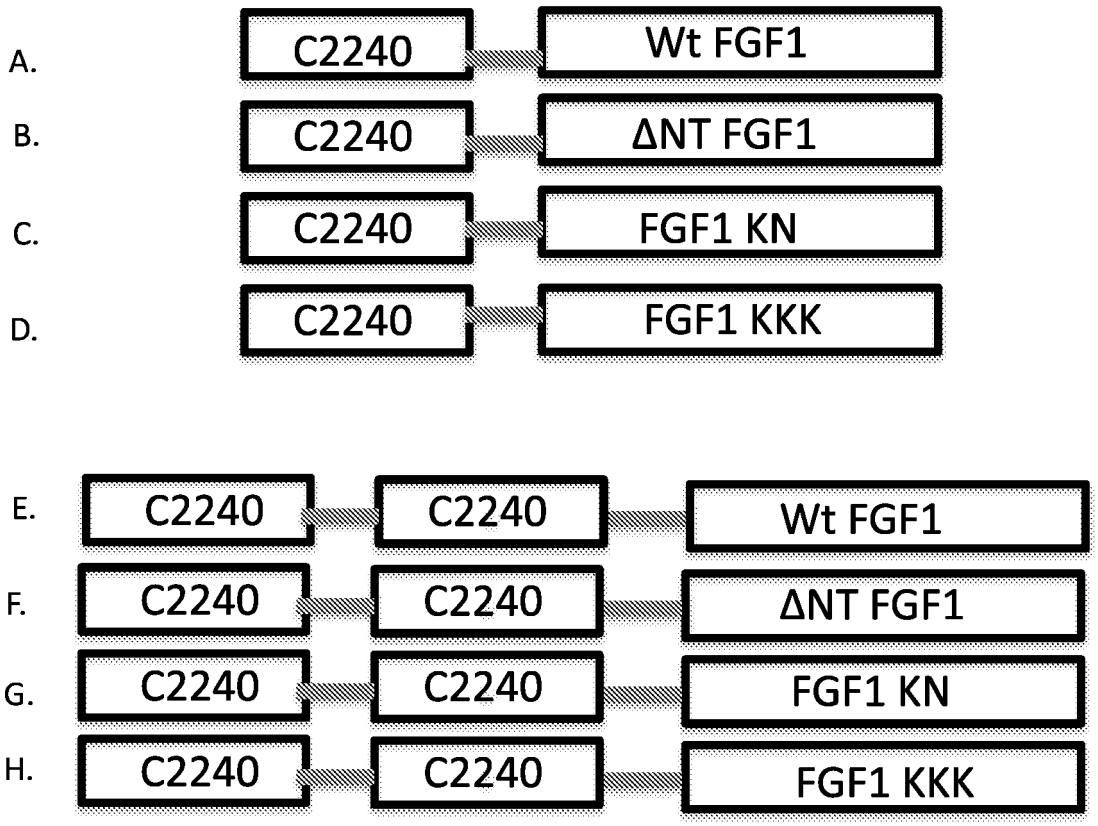

A.
C2240
Wt FGF1
B.
C2240
ΔNT FGF1
C.
C2240
FGF1 KN
D.
C2240
FGF1 KKK
E.
C2240
C2240
Wt FGF1
F.
C2240
C2240
ΔNT FGF1
G.
C2240
C2240
FGF1 KN
H.
C2240
C2240
FGF1 KKK

FIG. 27

FGF1(1-140αα)	FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
R35E C117V	GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD
FGF1(1-140αα)	FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
R35E C117V KKK	GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKQNGSVVRG PRTHYGQKAI LFLPLPVSSD
FGF1(1-140αα)	FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
R35E C117V K12V,N95V	GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD
FGF1$^{\Delta NT}$(10-140αα)	----------K PKLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
R35E,C117V	GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD
FGF1$^{\Delta NTKN}$KKK(10-140αα)	----------K PVLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,K118V	GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKQNGSVVRG PRTHYGQKAI LFLPLPVSSD
K12V,N95V C117V R35E	
FGF1 KKK(KN)(1-140αα)	FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,K118V	GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKQNGSVVRG PRTHYGQKAI LFLPLPVSSD
K12V,N95V C117V R35E	
FGF1$^{\Delta NT1}$(10-140αα)M2KN	----------K PVLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQKQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,R35E,	GLLYGSQTPN EEKLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LKLPLPVSSD
C83T, N95V C117V,F132W	
FGF1$^{\Delta NT1}$(10-140αα)M2KNKKK	----------K PVLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQKQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,R35E,	GLLYGSQTPN EEKLFLERLE ENHYVTYISK KHAEKNWFVG LKQNGSVVRG PRTHYGQKAI LKLPLPVSSD
K112D,K113Q,K118V	
C83T, N95V C117V,F132W	

FIG. 28

```
FGF1(1-140aa)          FMLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
R35V  C117V            GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140aa)          FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
R35V  C117V, KMK       GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140aa)          FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,R35V,N95V,C117V   GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD

FGF1ΔNT(10-140aa)      ----------K PKLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
R35V,C117V             GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG ERTHYGQKAI LFLPLPVSSD

FGF1ΔNTΔKK(10-140aa)   ----------K PKLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,K118V K12V, GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD
N95V C117V R35V

FGF1 KKK(KN) (1-140aa)  FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,K118V      GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD
K12V,N95V C117V R35V

FGF1ΔNT(10-140aa)M2KN  ----------K PKLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,C83T, N95V   GLLYGSQTPN EEKLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LKLPLPVSSD
C117V,F132W R35V

FGF1ΔNT(10-140aa)M2KNKKK ----------K PKLLYCSNGG HFLRILPDGT VDGTKDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,C83T, N95V   GLLYGSQTPN EEKLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LKLPLPVSSD
C117V,F132W, R35V
```

FIG. 29

```
FGF1(1-140aa)  FNLPPGNYKK PXLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
C117V, EKER    GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LEQNGSVVVG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140aa)  FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
C117V KY       GLLYGSQTPN EECLFLERLE ENHYMTYISK KHAEKNWFVG LKKNGSVVRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140aa)  FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
C117V KG       GLLYGSQTPN EECLFLVRLE ENHYNTYISK KHAEKNWFVG LKKNGSVVRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140aa)  FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
C117V KNY      GLLYGSQTPN EECLFLVRLE ENHVMTYISK KHAEKNWFVG LKTNGSVVRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140aa)  FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
C117V KNY      GLLYGSQTPN EECLFLERLE ENHVMTYISK KHAEKNWFVG LKKNGSVVRG PRTHYGQKAI LFLPLPVSSD
```

FIG. 30A

```
FGF1(1-140αα)              FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,N95V,C117V            GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD

FGF1(1-140αα)              FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQVSAES VGEVYIKSTE TGQYLAMDTD
K12V,L46V,E87V,N95V,       GLLYGSQTPN EECLFLVRLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLVLPVSSD
P134V,C117V

Salk_030 FGF1  (1-140αα)   FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
C117V,K118V                GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVVRG PRTHYGQKAI LFLPLPVSSD

Salk_031 FGF1^ΔN21C(10-140αα) ---------K PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,N95V,C83T,C117V       GLLYGSQTPN EETLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD

Salk_032 FGF1^ΔN21C(10-140αα) ---------K PVLLYTSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,N95V,C16T,C83S,C117A  GLLYGSQTPN EESLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSAKRG PRTHYGQKAI LFLPLPVSSD

Salk_035 FGF1^ΔN21(10-140αα)      ---------K PKLLYCSNGG YFLRILPDGT VDGTRDRSDQ HIQFQLSAES VGEVYIKSTE TGQYLAMDTD
H21Y,L44F,H102Y,F108Y,C117V      GLLYGSQTPN EECLFLERLE ENHYNTYISK KYAEKNWYVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD

Salk_036 FGF1^ΔN21(10-140αα)      ---------K PVLLYCSNGG YFLRILPDGT VDGTRDRSDQ HIQFQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,H21Y,L44F,N95V,             GLLYGSQTPN EECLFLERLE ENHYVTYISK KYAEKNWYVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD
H102Y,F108Y,C117V

Salk_037 FGF1(1-140αα)          FNLPPGNYKK PVLLYCSNGG YFLRILPDGT VDGTRDRSDQ HIQFQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,H21Y,L44F,N95V,             GLLYGSQTPN EECLFLERLE ENHYVTYISK KYAEKNWYVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD
H102Y,F108Y,C117V

(ΔHBS)                     FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,K118V          GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LDQNGSCVRG PRTHYGQKAI LFLPLPVSSD
```

FIG. 30B

```
wtFGF1DHS-FGF21C-tail  FNLPPGNYKK PKLLYCSNGG HFTLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
                       GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LDQNGSCVRG PRTHYGQKAI LFLPLPgl
                       ppalpeppgi lapqppdvgs sdplsmvgps qgrspsyas

wtFGF1DHS-FGF19C-tail  FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
                       GLLYGSQTPM EECLFLERLE ENHYNTYISK KHAEKNWFVG LDQMGSCVRG PRTHYGQKAI LFLPLLP
                       mvpeepedlr ghlesdmfss pletdsmdpf glvtgleavr spsfek

Salk_033 ntFGF21/1     HPIPDS8 PLICFGGQVK PKLLYCSMGG HFLRILPDGT VDGTRDR8DQ HIQLQLSAE8 VGEVYIKSTE TGQYLAMDTD
C117V                          GLLYG8QTPN EECLFLERLE EMHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVS8D

Salk_034 ntFGF21/1a   -----GGQVK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
C117V                  GLLYGSQTPN EECLFLERLE EMHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVS8D

Salk_015               FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
wtFGF1-FGF21C-tail     GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPgl
                       ppalpeppgi lapqppdvgs sdplsmvgps qgrspsyas

Salk_019               FNLPPGNYKK PKLLYCSNGG HFTLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
wtFGF1-FGF19C-tail     GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLLP
                       mvpeepedlr ghlesdmfss pletdsmdpf glvtgleavr spsfek
```

FIG. 30C

```
Salk_009
FGF1ΔMTC(10-140αα)          K PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,N95V,C117V             GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD

Salk_010
FGF1 KKK(1-140αα)            FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,K118V           GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LDQMGSCVRG PRTHYGQKAI LFLPLPVSSD

Salk_011
FGF1(1-140αα)               FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDP HIQLQLIAES VGEVYIKSTE TGQYLAMDTD
K12V Q40P,S47I,             GLLYGSQTPN EECLFLERLE EMGYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD
H93G,N95V

Salk_012
FGF1 ΔNT(10-140αα)          ----------K PVLLYCSNGG HFLRILPDGT VDGTRDRSDP HIQLQLIAES VGEVYIKSTE TGQYLAMDTD
K12V Q40P,S47I,             GLLYGSQTPN EECLFLERLE EMGYVTYISK KHAEKNWFVG LKKNGSCKRG PRTHYGQKAI LFLPLPVSSD
H93G,N95V

Salk_013
FGF1(1-140αα)M2KM           FNLPPGNYKM PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQFQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44F,C83T,             GLLYGSQTPN EETLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LWLPLPVSSD
N95V,C117V,F132W
```

FIG. 30D

```
Salk_014
FGF1(1-140∞∞)C117V  ENLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
                    GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD

Salk_022
FGF1(1-140∞∞)KKK(KN)    ENLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,K118V       GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LQQNGSVRRG PRTHYGQKAI LFLPLPVSSD
K12V,M95V,C117V

Salk_023
FGF1(10-140∞∞)M2KN  ----------K PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQFQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,L44E,C83T,         GLLYGSQTPN EETLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LWLPLPVSSD
M95V C117V,F132W

Salk_024
FGF1(1-140∞∞)       ENLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTEDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
R35E, C117V             GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD
```

FIG. 30E

```
Salk_025
FGF1(1-140αα)KV   FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,Y94V, C117V  GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD

Salk_026
FGF1(1-140αα) KE  FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K12V,E87V, C117V  GLLYGSQTPN EECLFLYRLE ENHYNTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD

Salk_027
FGF1(1-140αα) KKXR FNLPPGNYKK PKLLYCSNGG HFLRILPDGT VDGTRDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
K112D,K113Q,      GLLYGSQTPN EECLFLERLE ENHYNTYISK KHAEKNWFVG LDQNGSVVVG PRTHYGQKAI LFLPLPVSSD
C117V, K118V, R119V

Salk_028
FGF1(1-140αα) KN  FNLPPGNYKK PVLLYCSNGG HFLRILPDGT VDGTEDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
R35E, K12V,       GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD
W95V, C117V

Salk_029
FGF1(10-140αα) KN ----------K PVLLYCSNGG HFLRILPDGT VDGTEDRSDQ HIQLQLSAES VGEVYIKSTE TGQYLAMDTD
R35E, C117V       GLLYGSQTPN EECLFLERLE ENHYVTYISK KHAEKNWFVG LKKNGSVKRG PRTHYGQKAI LFLPLPVSSD
```

FIG. 31

Interaction	Residues	FGF1	FGF2
Identified FGF1-receptor interactions	Y^{15}, E^{87}, Y^{94}, N^{95}	□	□
Predicted to be at receptor interface	K^{12}	□	□
Heparin binding site	K^{112}, K^{113}, K^{118}	□	$K^{113}R$
Salt bridge with D2 of receptor	R^{35}	□	□

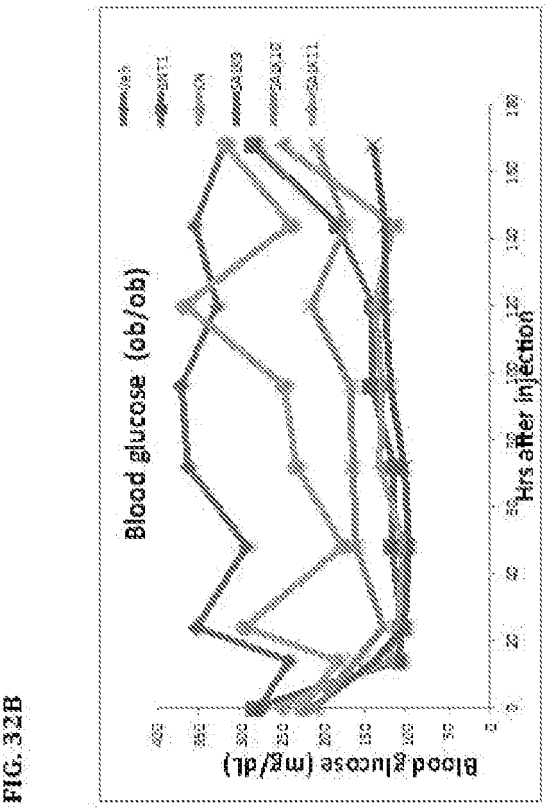


FIG. 32B

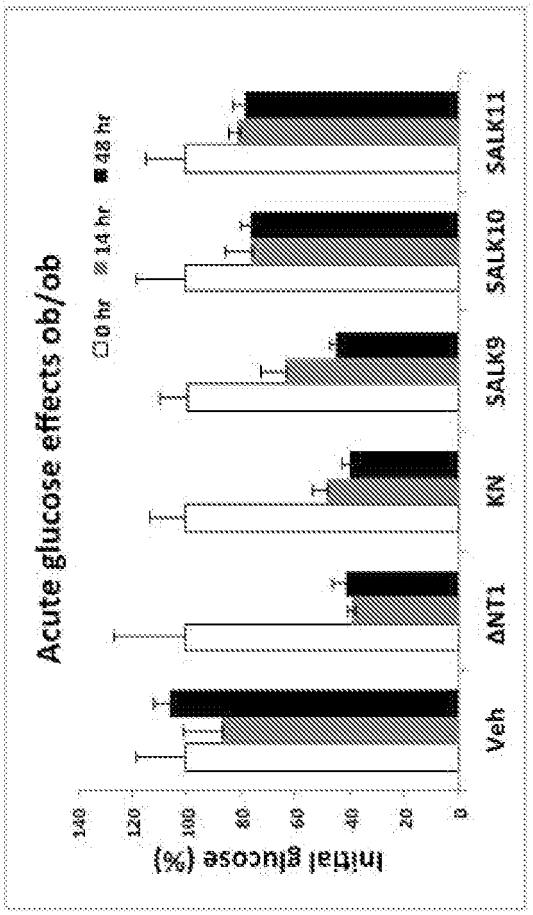


FIG. 32A

FIG. 32C

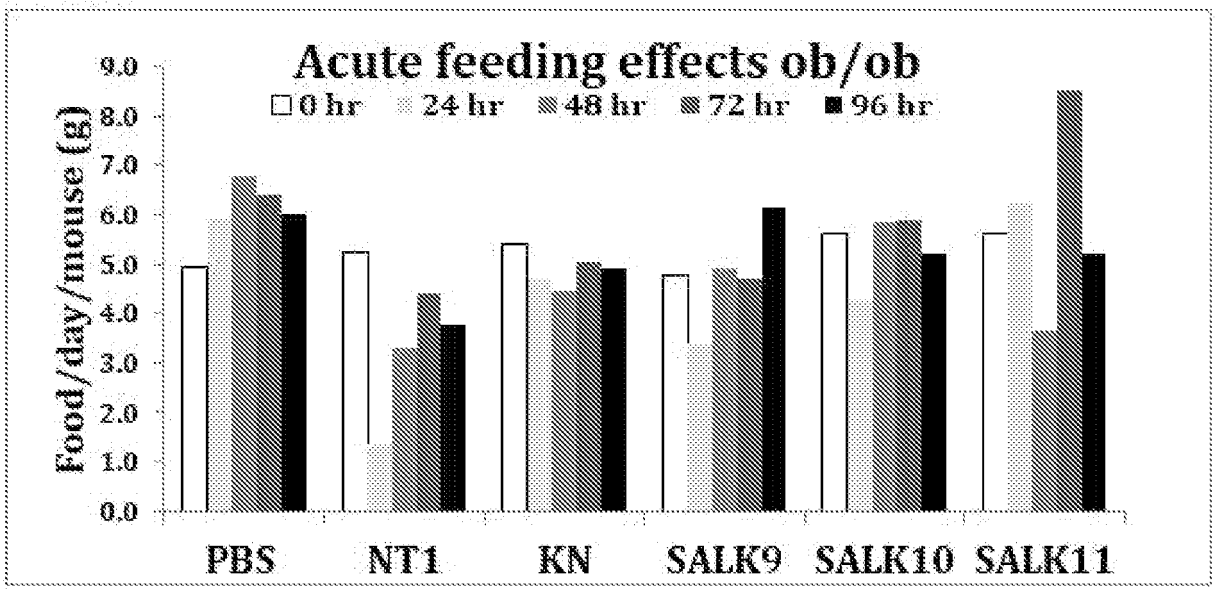
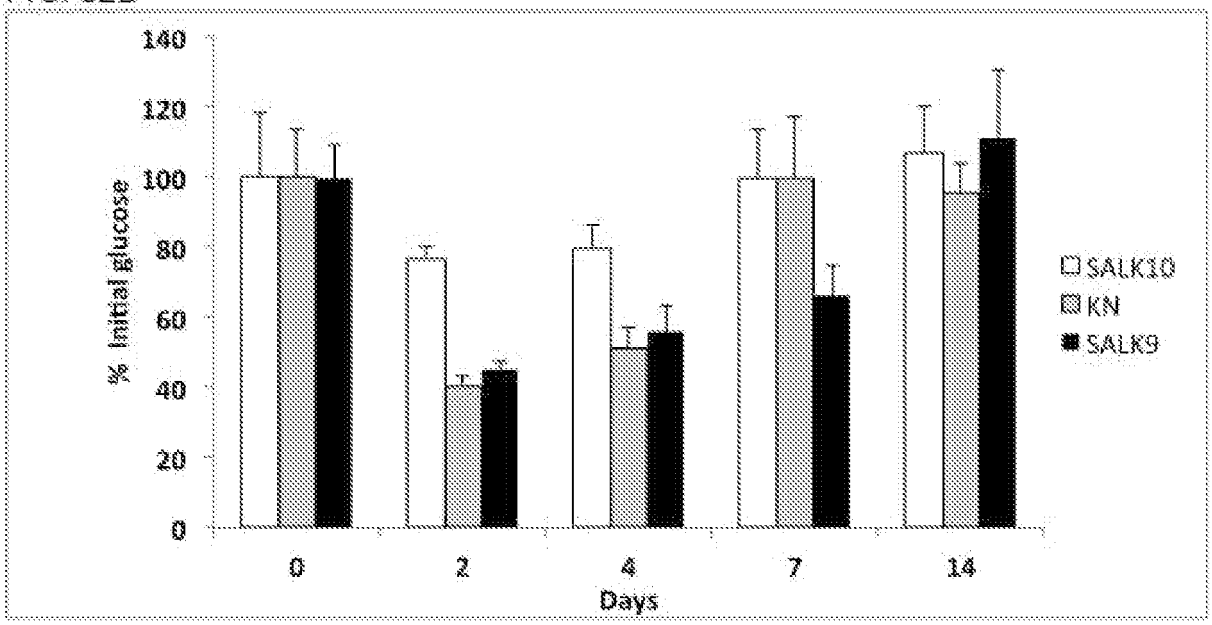


FIG. 32D



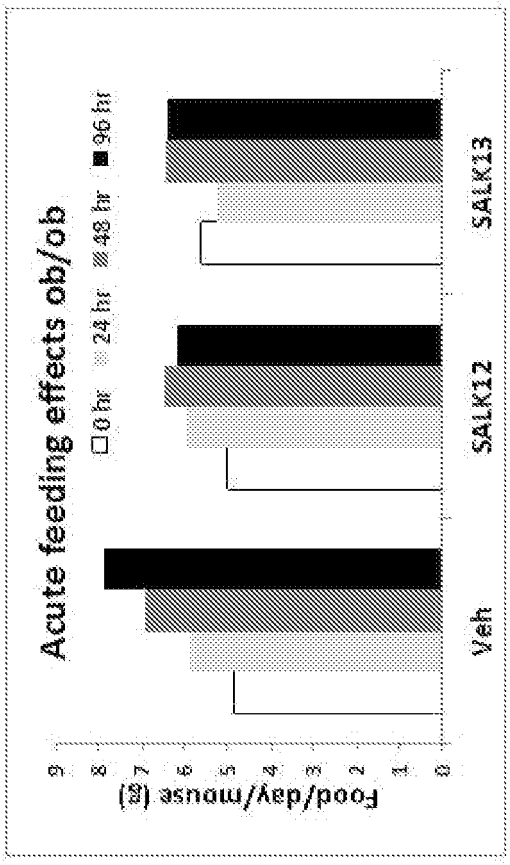


FIG. 33B

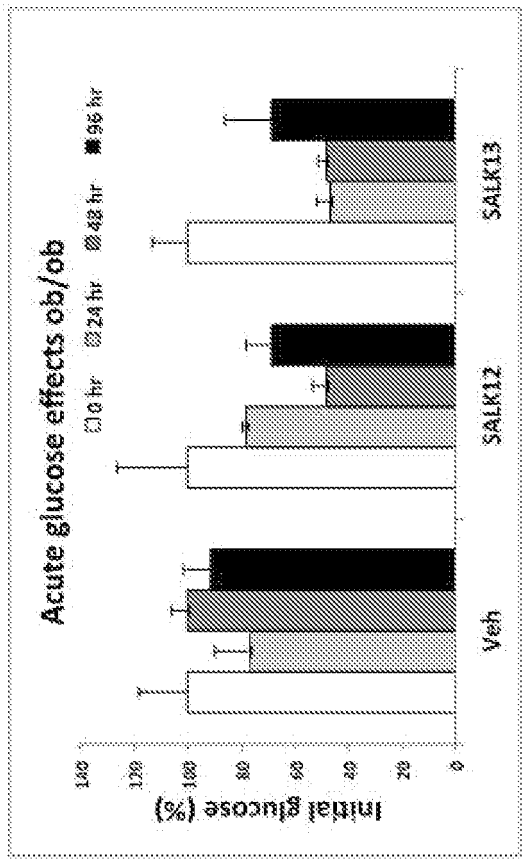


FIG. 33A

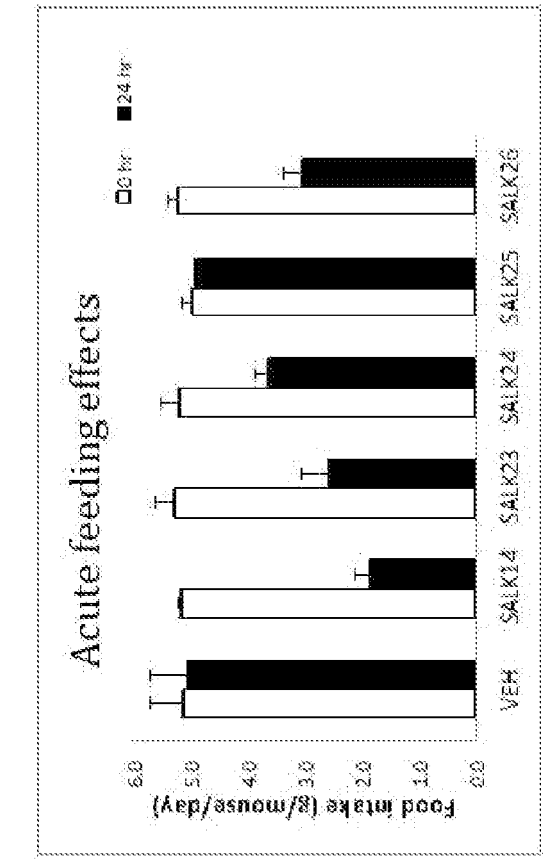


FIG. 34B

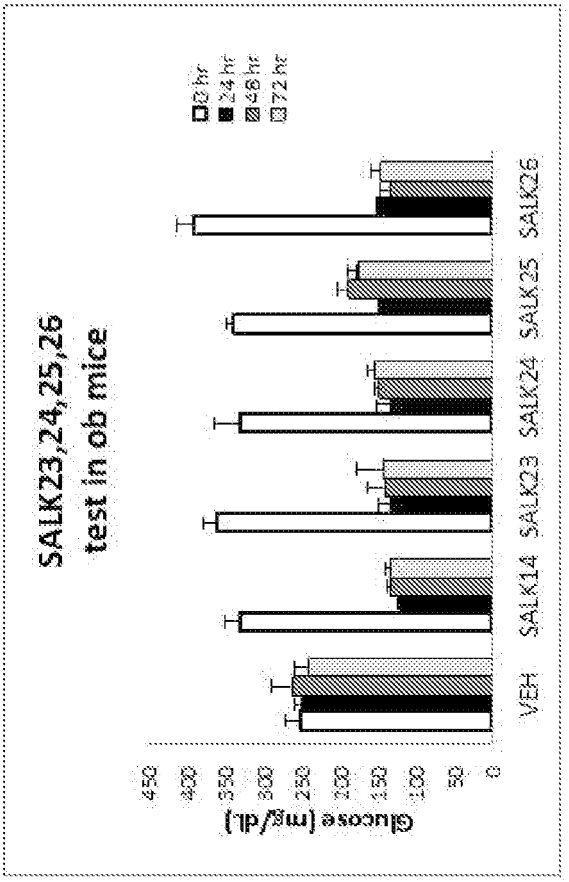


FIG. 34A

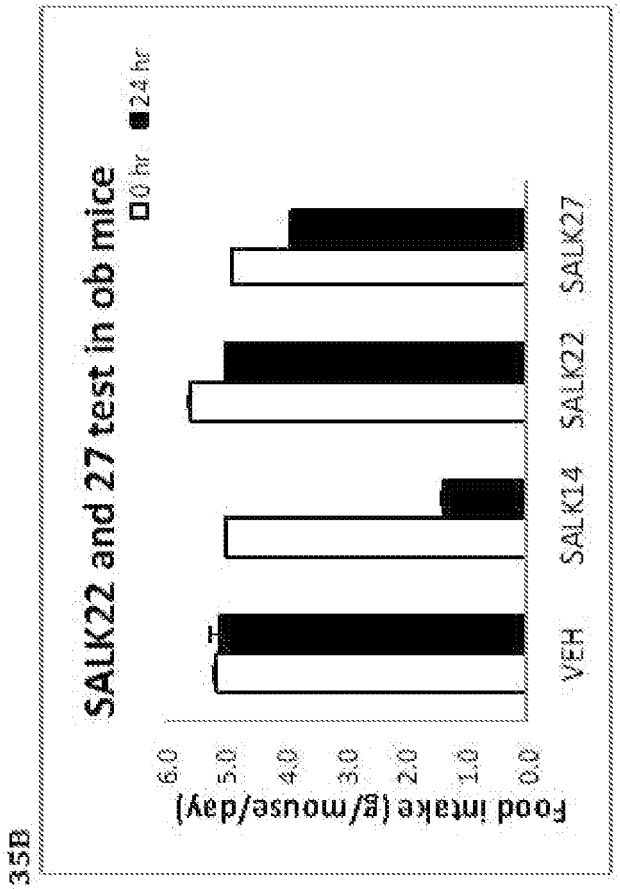


FIG. 35B

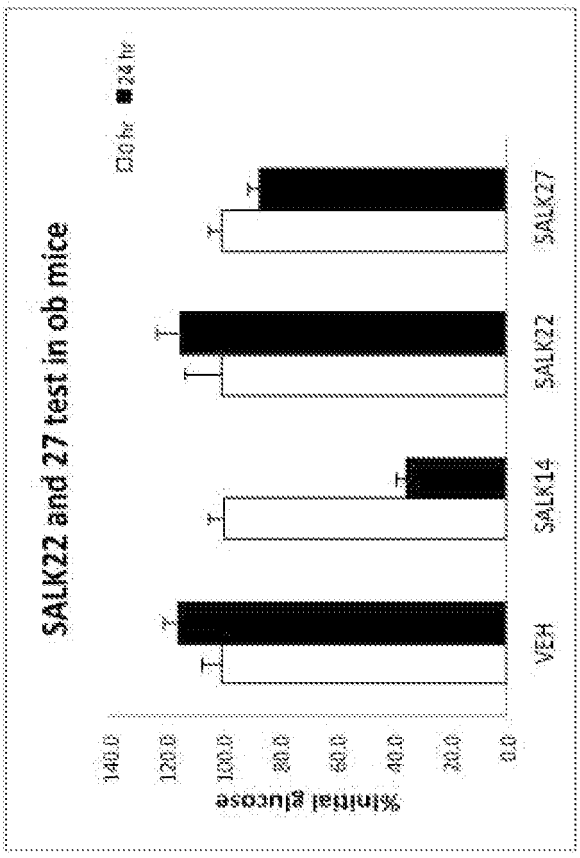


FIG. 35A

FIG. 36A

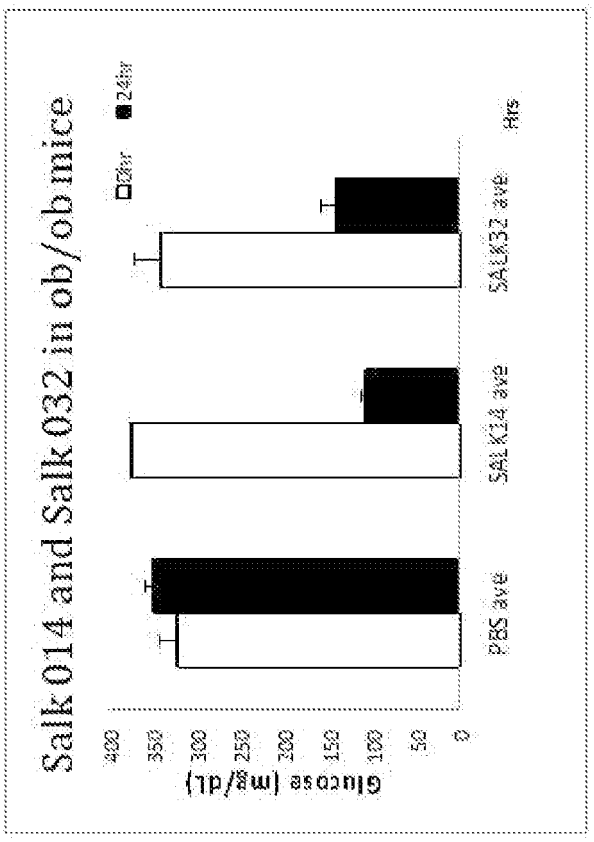


FIG. 36B

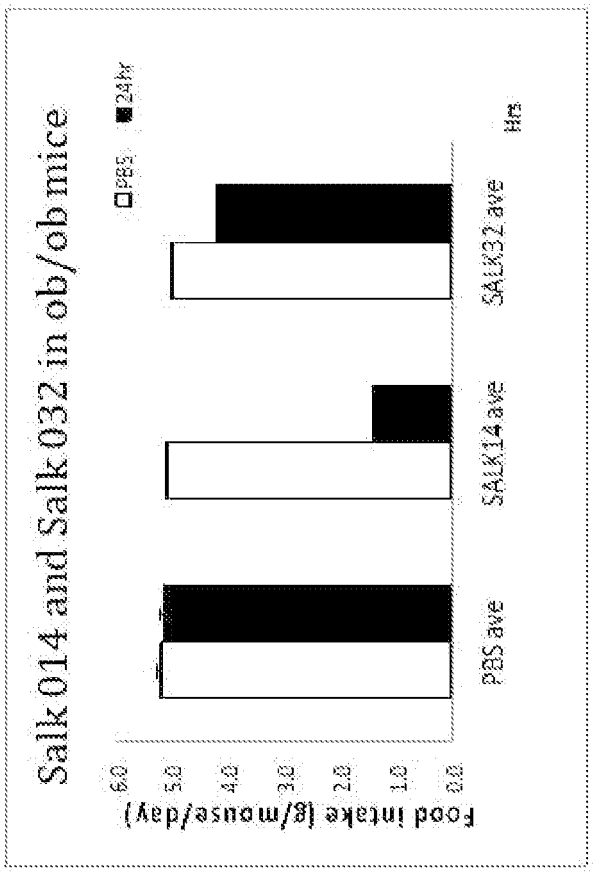


FIG. 37A

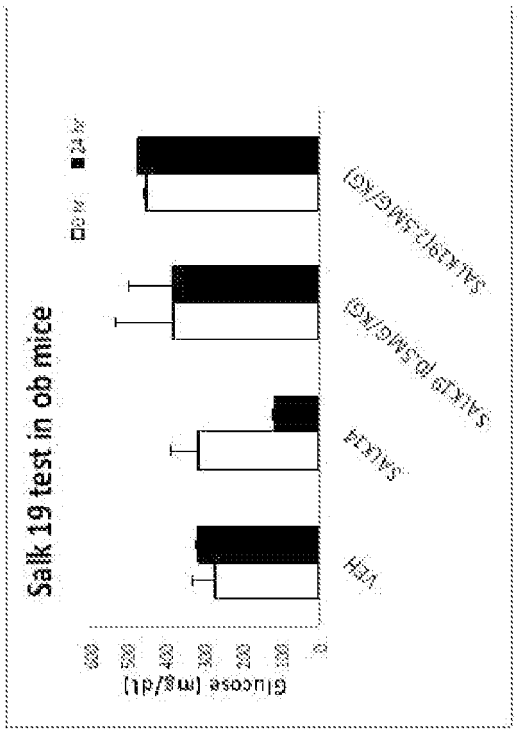


FIG. 37B

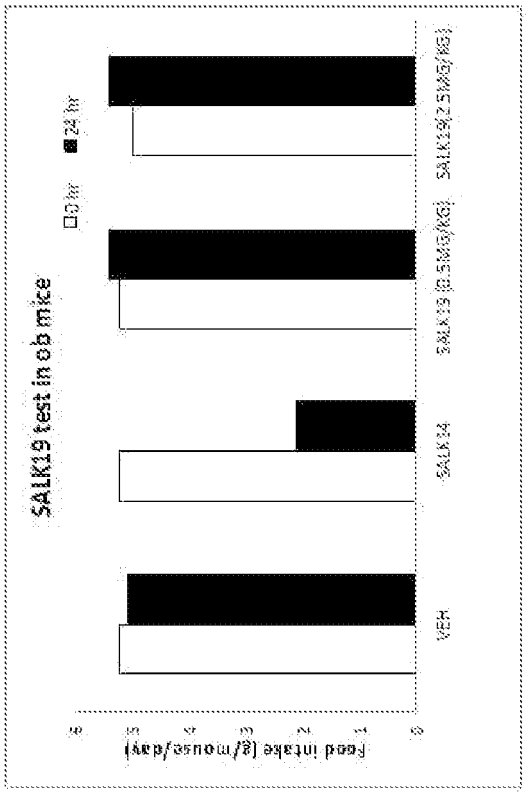


FIG. 38

