SEQUENCE LISTING

<110> Frendewey, David
Auerbach, Wojtek
Lai, Ka-Man Venus
Mujica, Alexander O.
Lee, Jeffrey D.
Droguett, Gustavo
Trzaska, Sean
Hunt, Charleen
Gagliardi, Anthony
Kuno, Junko
Valenzuela, David M.
Yancopoulos, George D.

<120> Methods and Compositions for the
Targeted Modification of a Genome

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<150> US 61/914,768
<151> 2013-12-11

<150> US 62/017,416
<151> 2014-06-26

<150> US 62/029,261
<151> 2014-07-25

<150> US 62/052,906
<151> 2014-09-19

<150> US 62/059,527
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19, 20, 21
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Ala Thr Cys Ala Ile Arg His Pro Cys His Gly Asn Leu Met Asn Gln
        35   40   45
Ile Lys Asn Gln Leu Ala Gln Leu Asn Gly Ser Ala Asn Ala Leu Phe
    50   55   60
Ile Ser Tyr Tyr Thr Ala Gln Gly Glu Pro Phe Pro Asn Asn Val Glu
65   70   75   80
Lys Leu Cys Ala Pro Asn Met Thr Asp Phe Pro Ser Phe His Gly Asn
                85   90   95
Gly Thr Glu Lys Thr Lys Leu Val Glu Leu Tyr Arg Met Val Ala Tyr
            100   105   110
Leu Ser Ala Ser Leu Thr Asn Ile Thr Arg Asp Gln Lys Val Leu Asn
        115   120   125
Pro Thr Ala Val Ser Leu Gln Val Lys Leu Asn Ala Thr Ile Asp Val
    130   135   140
Met Arg Gly Leu Leu Ser Asn Val Leu Cys Arg Leu Cys Asn Lys Tyr
145   150   155   160
Arg Val Gly His Val Asp Val Pro Pro Val Pro Asp His Ser Asp Lys
                165   170   175
Glu Ala Phe Gln Arg Lys Lys Leu Gly Cys Gln Leu Leu Gly Thr Tyr
            180   185   190
Lys Gln Val Ile Ser Val Val Val Gln Ala Phe
        195   200

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<400> 11
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<210> 12
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<220>
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<210> 13
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<400> 13
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<210> 14
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			20					25					30		
Asn	Glu	Asp	Thr	Thr	Ala	Asp	Phe	Phe	Leu	Thr	Thr	Met	Pro	Thr	Asp
		35					40					45			
Ser	Leu	Ser	Val	Ser	Thr	Leu	Pro	Leu	Pro	Glu	Val	Gln	Cys	Phe	Val
	50					55					60				
Phe	Asn	Val	Glu	Tyr	Met	Asn	Cys	Thr	Trp	Asn	Ser	Ser	Ser	Glu	Pro
65					70					75					80
Gln	Pro	Thr	Asn	Leu	Thr	Leu	His	Tyr	Trp	Tyr	Lys	Asn	Ser	Asp	Asn
			85					90					95		
Asp	Lys	Val	Gln	Lys	Cys	Ser	His	Tyr	Leu	Phe	Ser	Glu	Glu	Ile	Thr
		100					105					110			
Ser	Gly	Cys	Gln	Leu	Gln	Lys	Lys	Glu	Ile	His	Leu	Tyr	Gln	Thr	Phe
	115					120					125				
Val	Val	Gln	Leu	Gln	Asp	Pro	Arg	Glu	Pro	Arg	Arg	Gln	Ala	Thr	Gln
130					135					140					
Met	Leu	Lys	Leu	Gln	Asn	Leu	Val	Ile	Pro	Trp	Ala	Pro	Glu	Asn	Leu
145				150					155						160
Thr	Leu	His	Lys	Leu	Ser	Glu	Ser	Gln	Leu	Glu	Leu	Asn	Trp	Asn	Asn
			165					170					175		
Arg	Phe	Leu	Asn	His	Cys	Leu	Glu	His	Leu	Val	Gln	Tyr	Arg	Thr	Asp
		180					185					190			
Trp	Asp	His	Ser	Trp	Thr	Glu	Gln	Ser	Val	Asp	Tyr	Arg	His	Lys	Phe
	195					200					205				
Ser	Leu	Pro	Ser	Val	Asp	Gly	Gln	Lys	Arg	Tyr	Thr	Phe	Arg	Val	Arg
210					215					220					
Ser	Arg	Phe	Asn	Pro	Leu	Cys	Gly	Ser	Ala	Gln	His	Trp	Ser	Glu	Trp
225				230					235						240
Ser	His	Pro	Ile	His	Trp	Gly	Ser	Asn	Thr	Ser	Lys	Glu	Asn	Pro	Phe
			245					250					255		
Leu	Phe	Ala	Leu	Glu	Ala	Val	Val	Ile	Ser	Val	Gly	Ser	Met	Gly	Leu
		260					265					270			
Ile	Ile	Ser	Leu	Leu	Cys	Val	Tyr	Phe	Trp	Leu	Glu	Arg	Thr	Met	Pro
	275					280					285				
Arg	Ile	Pro	Thr	Leu	Lys	Asn	Leu	Glu	Asp	Leu	Val	Thr	Glu	Tyr	His
290					295					300					
Gly	Asn	Phe	Ser	Ala	Trp	Ser	Gly	Val	Ser	Lys	Gly	Leu	Ala	Glu	Ser
305				310					315						320
Leu	Gln	Pro	Asp	Tyr	Ser	Glu	Arg	Leu	Cys	Leu	Val	Ser	Glu	Ile	Pro
			325					330					335		
Pro	Lys	Gly	Gly	Ala	Leu	Gly	Glu	Gly	Pro	Gly	Ala	Ser	Pro	Cys	Asn
		340					345					350			
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Thr															

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            20   25   30
Asn Glu Asp Thr Lys Ser Asp Leu Leu Leu Thr Ser Met Asp Leu Lys
        35   40   45
His Leu Ser Val Pro Thr Leu Pro Leu Pro Glu Val Gln Cys Phe Val
    50   55   60
Phe Asn Val Glu Tyr Met Asn Cys Thr Trp Asn Ser Ser Ser Glu Pro
65   70   75   80
Gln Pro Thr Asn Leu Thr Met His Tyr Arg Tyr Lys Gly Ser Asp Asn
                85   90   95
Asn Thr Phe Gln Glu Cys Ser His Tyr Leu Phe Ser Lys Glu Ile Thr
            100   105   110
Ser Gly Cys Gln Ile Gln Lys Glu Asp Ile Gln Leu Tyr Gln Thr Phe
        115   120   125
Val Val Gln Leu Gln Asp Pro Gln Lys Pro Gln Arg Arg Ala Glu Gln
    130   135   140
Lys Leu Asn Leu Gln Asn Leu Val Ile Pro Trp Ala Pro Glu Asn Leu
145   150   155   160
Thr Leu Tyr Asn Leu Ser Glu Ser Gln Val Glu Leu Arg Trp Lys Ser
                165   170   175
Arg Tyr Ile Glu Arg Cys Leu Gln Tyr Leu Val Gln Tyr Arg Ser Asn
            180   185   190
Arg Asp Arg Ser Trp Thr Glu Gln Ile Val Asp His Glu Pro Arg Phe
        195   200   205
Ser Leu Pro Ser Val Asp Glu Gln Lys Leu Tyr Thr Phe Arg Val Arg
    210   215   220
Ser Arg Phe Asn Pro Ile Cys Gly Ser Thr Gln Gln Trp Ser Lys Trp
225   230   235   240
Ser Gln Pro Ile His Trp Gly Ser His Thr Ala Glu Glu Asn Pro Ser
                245   250   255
Leu Phe Ala Leu Glu Ala Val Leu Ile Pro Val Gly Thr Met Gly Leu
            260   265   270
Ile Ile Thr Leu Ile Phe Val Tyr Cys Trp Leu Glu Arg Met Pro Arg
        275   280   285
Ile Pro Ala Ile Lys Asn Leu Glu Asp Leu Val Thr Glu Tyr His Gly
    290   295   300
Asn Phe Ser Ala Trp Ser Gly Val Ser Lys Gly Leu Thr Glu Ser Leu
305   310   315   320
Gln Pro Asp Tyr Ser Glu Arg Phe Cys His Val Ser Glu Ile Pro Pro
                325   330   335
Lys Gly Gly Ala Leu Gly Glu Gly Pro Gly Gly Ser Pro Cys Ser Leu
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His Ser Pro Tyr Trp Pro Pro Pro Cys Tyr Ser Leu Lys Pro Glu Ala
        355   360   365

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            20                  25                  30
Asn Glu Asp Thr Thr Ala Asp Phe Phe Leu Thr Thr Met Pro Thr Asp
        35                  40                  45
Ser Leu Ser Val Ser Thr Leu Pro Leu Pro Glu Val Gln Cys Phe Val
    50                  55                  60
Phe Asn Val Glu Tyr Met Asn Cys Thr Trp Asn Ser Ser Ser Glu Pro
65                  70                  75                  80
Gln Pro Thr Asn Leu Thr Leu His Tyr Trp Tyr Lys Asn Ser Asp Asn
                85                  90                  95
Asp Lys Val Gln Lys Cys Ser His Tyr Leu Phe Ser Glu Glu Ile Thr
            100                 105                 110
Ser Gly Cys Gln Leu Gln Lys Lys Glu Ile His Leu Tyr Gln Thr Phe
        115                 120                 125
Val Val Gln Leu Gln Asp Pro Arg Glu Pro Arg Arg Gln Ala Thr Gln
    130                 135                 140
Met Leu Lys Leu Gln Asn Leu Val Ile Pro Trp Ala Pro Glu Asn Leu
145                 150                 155                 160
Thr Leu His Lys Leu Ser Glu Ser Gln Leu Glu Leu Asn Trp Asn Asn
                165                 170                 175
Arg Phe Leu Asn His Cys Leu Glu His Leu Val Gln Tyr Arg Thr Asp
            180                 185                 190
Trp Asp His Ser Trp Thr Glu Gln Ser Val Asp Tyr Arg His Lys Phe
        195                 200                 205
Ser Leu Pro Ser Val Asp Gly Gln Lys Arg Tyr Thr Phe Arg Val Arg
    210                 215                 220
Ser Arg Phe Asn Pro Leu Cys Gly Ser Ala Gln His Trp Ser Glu Trp
225                 230                 235                 240
Ser His Pro Ile His Trp Gly Ser Asn Thr Ser Lys Glu Asn Pro Phe
                245                 250                 255
Leu Phe Ala Leu Glu Ala Val Leu Ile Pro Val Gly Thr Met Gly Leu
            260                 265                 270
Ile Ile Thr Leu Ile Phe Val Tyr Cys Trp Leu Glu Arg Met Pro Arg
        275                 280                 285
Ile Pro Ala Ile Lys Asn Leu Glu Asp Leu Val Thr Glu Tyr His Gly
    290                 295                 300
Asn Phe Ser Ala Trp Ser Gly Val Ser Lys Gly Leu Thr Glu Ser Leu
305                 310                 315                 320
Gln Pro Asp Tyr Ser Glu Arg Phe Cys His Val Ser Glu Ile Pro Pro
                325                 330                 335
Lys Gly Gly Ala Leu Gly Glu Gly Pro Gly Gly Ser Pro Cys Ser Leu
            340                 345                 350
His Ser Pro Tyr Trp Pro Pro Pro Cys Tyr Ser Leu Lys Pro Glu Ala
        355                 360                 365
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