

SEQUENCE LISTING

<110> The United States of America, as represented by the
Secretary, Department of Health and Human Services
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Allan, David S.J.

<120> METHODS OF PRODUCING MODIFIED NATURAL KILLER CELLS AND METHODS OF
USE

<130> 4239-96570-04

<150> US 62/366,493
<151> 2016-07-25

<150> PCT/US2017/043774
<151> 2017-07-25

<150> US 15/801,085
<151> 2017-11-01

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<170> PatentIn version 3.5

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aat gct aat ttc aat aaa atc ttc ctg ccc acc atc tac tcc atc atc	144
Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile	
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ttc tta act ggc att gtg ggc aat gga ttg gtc atc ctg gtc atg ggt	192
Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly	
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tac cag aag aaa ctg aga agc atg acg gac aag tac agg ctg cac ctg	240
Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu	
65 70 75 80	
tca gtg gcc gac ctc ctc ttt gtc atc acg ctt ccc ttc tgg gca gtt	288
Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val	
85 90 95	
gat gcc gtg gca aac tgg tac ttt ggg aac ttc cta tgc aag gca gtc	336
Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val	
100 105 110	

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atc ctg cct ggt att gtc atc ctg tcc tgc tat tgc att atc atc tcc Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser 210 215 220	672
aag ctg tca cac tcc aag ggc cac cag aag cgc aag gcc ctc aag acc Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys Ala Leu Lys Thr 225 230 235 240	720
aca gtc atc ctc atc ctg gct ttc ttc gcc tgt tgg ctg cct tac tac Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr 245 250 255	768
att ggg atc agc atc gac tcc ttc atc ctc ctg gaa atc atc aag caa Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu Ile Ile Lys Gln 260 265 270	816
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gcc cta gct ttc ttc cac tgt tgt ctg aac ccc atc ctc tat gct ttc Ala Leu Ala Phe Phe His Cys Cys Leu Asn Pro Ile Leu Tyr Ala Phe 290 295 300	912
ctt gga gcc aaa ttt aaa acc tct gcc cag cac gca ctc acc tct gtg Leu Gly Ala Lys Phe Lys Thr Ser Ala Gln His Ala Leu Thr Ser Val 305 310 315 320	960
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Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly
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Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu
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Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val
 85 90 95

Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val
 100 105 110

His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala
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Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser
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Gln Arg Pro Arg Lys Leu Leu Ala Glu Lys Val Val Tyr Val Gly Val
 145 150 155 160

Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe Ile Phe Ala Asn
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Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg Phe Tyr Pro Asn
 180 185 190

Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile Met Val Gly Leu
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Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser
 210 215 220

Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys Ala Leu Lys Thr
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Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr
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Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu Ile Ile Lys Gln
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Gly Cys Glu Phe Glu Asn Thr Val His Lys Trp Ile Ser Ile Thr Glu
 275 280 285

Ala Leu Ala Phe Phe His Cys Cys Leu Asn Pro Ile Leu Tyr Ala Phe
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Leu Gly Ala Lys Phe Lys Thr Ser Ala Gln His Ala Leu Thr Ser Val
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 Gly Phe Met Ser Leu Asp Asn Asn Gly Thr Ala Thr Pro Glu Leu Pro
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 acc cag gga aca ttt tca aat gtt tct aca aat gta tcc tac caa gaa 144
 Thr Gln Gly Thr Phe Ser Asn Val Ser Thr Asn Val Ser Tyr Gln Glu
 35 40 45
 act aca aca cct agt acc ctt gga agt acc agc ctg cac cct gtg tct 192
 Thr Thr Thr Pro Ser Thr Leu Gly Ser Thr Ser Leu His Pro Val Ser
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 caa cat ggc aat gag gcc aca aca aac atc aca gaa acg aca gtc aaa 240
 Gln His Gly Asn Glu Ala Thr Thr Asn Ile Thr Glu Thr Thr Val Lys
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 Phe Thr Ser Thr Ser Val Ile Thr Ser Val Tyr Gly Asn Thr Asn Ser
 85 90 95

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Ala Asn Val Ser Thr Pro Glu Thr Thr Leu Lys Pro Ser Leu Ser Pro	
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gga aat gtt tca gac ctt tca acc act agc act agc ctt gca aca tct	432
Gly Asn Val Ser Asp Leu Ser Thr Thr Ser Thr Ser Leu Ala Thr Ser	
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ccc act aaa ccc tat aca tca tct tct cct atc cta agt gac atc aag	480
Pro Thr Lys Pro Tyr Thr Ser Ser Ser Pro Ile Leu Ser Asp Ile Lys	
145 150 155 160	
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Ala Glu Ile Lys Cys Ser Gly Ile Arg Glu Val Lys Leu Thr Gln Gly	
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Ile Cys Leu Glu Gln Asn Lys Thr Ser Ser Cys Ala Glu Phe Lys Lys	
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Asp Arg Gly Glu Gly Leu Ala Arg Val Leu Cys Gly Glu Glu Gln Ala	
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Asp Ala Asp Ala Gly Ala Gln Val Cys Ser Leu Leu Leu Ala Gln Ser	
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225 230 235 240	
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Lys Leu Gly Ile Leu Asp Phe Thr Glu Gln Asp Val Ala Ser His Gln	
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Ser Tyr Ser Gln Lys Thr Leu Ile Ala Leu Val Thr Ser Gly Ala Leu	
275 280 285	
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Thr	Thr	Thr	Pro	Ser	Thr	Leu	Gly	Ser	Thr	Ser	Leu	His	Pro	Val	Ser	50	55	60	
Gln	His	Gly	Asn	Glu	Ala	Thr	Thr	Asn	Ile	Thr	Glu	Thr	Thr	Val	Lys	65	70	75	80
Phe	Thr	Ser	Thr	Ser	Val	Ile	Thr	Ser	Val	Tyr	Gly	Asn	Thr	Asn	Ser	85	90	95	
Ser	Val	Gln	Ser	Gln	Thr	Ser	Val	Ile	Ser	Thr	Val	Phe	Thr	Thr	Pro	100	105	110	
Ala	Asn	Val	Ser	Thr	Pro	Glu	Thr	Thr	Leu	Lys	Pro	Ser	Leu	Ser	Pro	115	120	125	
Gly	Asn	Val	Ser	Asp	Leu	Ser	Thr	Thr	Ser	Thr	Ser	Leu	Ala	Thr	Ser	130	135	140	
Pro	Thr	Lys	Pro	Tyr	Thr	Ser	Ser	Ser	Pro	Ile	Leu	Ser	Asp	Ile	Lys	145	150	155	160
Ala	Glu	Ile	Lys	Cys	Ser	Gly	Ile	Arg	Glu	Val	Lys	Leu	Thr	Gln	Gly	165	170	175	
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Asp	Arg	Gly	Glu	Gly	Leu	Ala	Arg	Val	Leu	Cys	Gly	Glu	Glu	Gln	Ala	195	200	205	
Asp	Ala	Asp	Ala	Gly	Ala	Gln	Val	Cys	Ser	Leu	Leu	Leu	Ala	Gln	Ser	210	215	220	
Glu	Val	Arg	Pro	Gln	Cys	Leu	Leu	Leu	Val	Leu	Ala	Asn	Arg	Thr	Glu	225	230	235	240
Ile	Ser	Ser	Lys	Leu	Gln	Leu	Met	Lys	Lys	His	Gln	Ser	Asp	Leu	Lys	245	250	255	

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Ser	Asp	Pro	Val	Gln	Leu	Glu	Val	His	Ile	Gly	Trp	Leu	Leu	Leu	Gln			
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165 170 175	
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Gly Ser Lys Asn Val Ser Ser Glu Thr Val Asn Ile Thr Ile Thr Gln	
180 185 190	
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Gly Leu Ala Val Ser Thr Ile Ser Ser Phe Phe Pro Pro Gly Tyr Gln	
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Val Asp Asp Ser Gly Glu Tyr Arg Cys Gln Thr Asn Leu Ser Thr Leu	
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Ser Asp Pro Val Gln Leu Glu Val His Ile Gly Trp Leu Leu Leu Gln	
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Ala Pro Arg Trp Val Phe Lys Glu Glu Asp Pro Ile His Leu Arg Cys
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His Ser Trp Lys Asn Thr Ala Leu His Lys Val Thr Tyr Leu Gln Asn
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Gly Lys Gly Arg Lys Tyr Phe His His Asn Ser Asp Phe Tyr Ile Pro
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Lys Ala Thr Leu Lys Asp Ser Gly Ser Tyr Phe Cys Arg Gly Leu Val
165 170 175

Gly Ser Lys Asn Val Ser Ser Glu Thr Val Asn Ile Thr Ile Thr Gln
180 185 190

Gly Leu Ala Val Ser Thr Ile Ser Ser Phe Phe Pro Pro Gly Tyr Gln
195 200 205

Val Ser Phe Cys Leu Val Met Val Leu Leu Phe Ala Val Asp Thr Gly
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