

SEQUENCE LISTING

<110> MODERNA TX, INC.
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 HEWITT, SUSANNAH
 BAI, AILIN
 HOGE, STEPHEN
 PRESNYAK, VLADIMIR
 MCFADYEN, IAIN
 BENENATO, KERRY
 KUMARASINGHE, ELLALAHAWAGE SATHYAJITH

<120> POLYNUCLEOTIDES ENCODING INTERLEUKIN-12 (IL12) AND USES THEREOF

<130> 3529.035PC02/ELE/C-K

<150> 62/443,693

<151> 2017-01-07

<150> 62/338,483

<151> 2016-05-18

<160> 242

<170> PatentIn version 3.5

<210> 1

<211> 306

<212> PRT

<213> Artificial Sequence

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<223> Wild Type IL12B without signal (IL12B) Amino Acids

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Glu	Asp	Gly	Ile	Thr	Trp	Thr	Leu	Asp	Gln	Ser	Ser	Glu	Val	Leu	Gly
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Ser	Gly	Lys	Thr	Leu	Thr	Ile	Gln	Val	Lys	Glu	Phe	Gly	Asp	Ala	Gly
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Gln	Tyr	Thr	Cys	His	Lys	Gly	Gly	Glu	Val	Leu	Ser	His	Ser	Leu	Leu
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Leu	Leu	His	Lys	Lys	Glu	Asp	Gly	Ile	Trp	Ser	Thr	Asp	Ile	Leu	Lys
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Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr
115 120 125

Asp Leu Thr Phe Ser Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln
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Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly
145 150 155 160

Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala
165 170 175

Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala
180 185 190

Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg
195 200 205

Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu
210 215 220

Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp
225 230 235 240

Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Val Gln Val Gln
245 250 255

Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr
260 265 270

Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala
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Cys Ser
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 35 40 45

His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu
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Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr
 65 70 75 80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
 85 90 95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
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Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
 115 120 125

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

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
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ccttgcaactt ctgaagagat tgatcatgaa gatatcaciaa aagataaaaac cagcacagtg	180
gaggcctgtt taccattgga attaaccaag aatgagagtt gcctaaattc cagagagacc	240
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<223> hIL12AB_007

<400> 11

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<220>
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acgctggacc agagcagcga agtactgggc agtggaaaaa cgctgaccat acaagtaaaa	240
gaatttggcg atgctggcca gtacacctgc cacaaggag gagaagtact gagccacagc	300
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<220>
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ttctacaaga ccaagattaa gctttgcatt cttcttcatg ctttccgtat tcgtgctgtg	1560
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<220>
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gccccggcg aaatggtggt gctgacctgt gacacccccg aagaagatgg tatcacctgg	180

accctggacc agagcagcga ggtgctgggc agcggcaaaa ccctgaccat ccaagtga	240
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gccgccgagg agagcctgcc catcgaggtg atggtggatg ccgtgcacaa gctgaagtat	660
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caggccctga atttcaacag cgagaccgtg cccccaaaaa gcagcctgga agaaccggat	1500
ttttataaaa ccaaatcaa gctgtgcata ctgctgcatg ctttcagaat cagagccgtg	1560
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<220>
 <223> hIL12AB_016

<400> 20

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gccccctggg agatggtggt gctgacctgt gacaccccag aagaggatgg catcacctgg	180
accctggacc agagctcaga agtgctgggc agtggaataa ccctgaccat ccaggtgaag	240
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ctgcagctga agcccctgaa gaacagcaga caagtggagg tttcctggga gtaccagac	780
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gacccaaga gacaaatatt tttggaccag aacatgctgg ctgtcattga tgagctgatg	1440
caggccctga acttcaactc agaaactgta cccagaaga gcagcctgga ggagccagac	1500
ttctacaaga ccaagatcaa gctgtgcac ctgcttcatg ctttcagaat cagagctgtc	1560
accattgacc gcgtgatgag ctacttaaat gcctcg	1596

<210> 21

<211> 1596

<212> DNA
<213> Artificial Sequence

<220>
<223> hIL12AB_017

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gccccggggg aaatggtggt gttaacatgc gacacgcctg aggaggacgg catcacctgg 180
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gagttcgggg atgccggcca atatacttgc cacaaggggtg gcgaggtgct ttctcattct 300
ctgctcctgc tgcacaagaa agaagatggc atttggtcta ctgatattct gaaagaccag 360
aaggagccca agaacaagac ctttctgaga tgcgaggcta aaaactacag cggaagattt 420
acctgctggt ggctgaccac aatctcaacc gacctgacat tttcagtga gtccagcaga 480
gggagctccg accctcaggg cgtgacctgc ggagccgcca ctctgtccgc agaaagagtg 540
agaggtgata ataaggagta cgagtattca gtcgagtgcc aagaggactc tgcttgccca 600
gccgccgagg agagcctgcc aatcgaggtg atggtagatg cggtagacaa gctgaagtat 660
gagaactaca catcctcctt cttcataaga gacattatca agcctgaccc acctaaaaat 720
ctgcaactca agcctttgaa aaattcaaga caggtggagg tgagctggga gtaccctgat 780
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caggcattaa acttcaacag cgagaccgtg cctcagaagt ccagcctcga ggagccagat 1500
ttttataaga ccaagatcaa actatgcac ctgctgcatg ctttcaggat tagagccgtc 1560

accatcgatc gagtcatgtc ttacctgaat gctagc 1596

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_018

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 gcaccaggcg aaatggtcgt gctgacctgc gatacccctg aagaagatgg catcacctgg 180
 actctggacc agtcttccga ggtgcttggg tctggcaaga ctctgacaat acaagttaag 240
 gagttcgggg acgcaggaca gtacacctgc cacaaggcg gcgaggtcct gagtactcc 300
 ctgttactgc tccacaagaa agaggacggc atttggtcca ccgacattct gaaggaccag 360
 aaggagccta agaataaaac tttcctgaga tgcgaggcaa aaaactatag cggccgcttt 420
 acttgctggg ggcttacaac aatctctacc gatttaactt tctccgtgaa gtctagcaga 480
 ggatcctctg acccgcaagg agtgacttgc ggagccgcca ccttgagcgc cgaaagagtc 540
 cgtggcgata acaaagaata cgagtactcc gtggagtgcc aggaagattc cgctgcca 600
 gctgccgagg agtccctgcc cattgaagtg atggtggatg ccgtccacaa gctgaagtac 660
 gaaaaactata ccagcagctt cttcatccgg gatatcatta agcccgaccc tcctaaaaac 720
 ctgcaactta agcccctaaa gaatagtcgg cagggttgagg tcagctggga atatcctgac 780
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ttctacaaga ccaagattaa gctgtgtatt ttgctgcatg cgtttagaat cagagccgtg	1560
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 <213> Artificial Sequence

<220>
 <223> hIL12AB_019

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gctcctggag aaatgggtgt ttcacctgt gacactcctg aagaagatgg catcacctgg	180
acgctggacc aaagctcaga agttcttggc agtggaaaaa cgctgaccat acaagtaaaa	240
gaatttgggg atgctggcca gtacacgtgc cacaaggag gagaagttct cagccacagt	300
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aaggagccca agaacaaaac cttcctccgc tgtgaggcca agaactacag tggctgcttc	420
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gaaaactaca ccagcagctt cttcattcgt gacatcatca aaccagacct gcccaagaac	720
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caagcattaa acttcaactc agaaactgtt cccagagaagt catctttaga agagccggac	1500
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accattgacc gtgtcatgtc ctacttaaat gcttct	1596

<210> 24
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_020

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<210> 25
 <211> 1596
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_021

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ttctacaaga	ccaagatcaa	gctgtgcac	ctgctgcacg	cgttcaggat	ccgggcagtc	1560
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<210> 26
 <211> 1596
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_022

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aaggagccga	agaataaaac ctttctgagg tgcgaggcca agaactattc cggcagggttc 420
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gccgccgaag	agagcctgcc tatcgaggtc atggtagatg cagtgcataa gctgaagtac 660

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<220>

<223> hIL12AB_026

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gcggccgagg aaagcctgcc catcgagggtg atggtggacg ccgtccacaa actcaagtac	660
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aaggagccga agaataaaac gttcctgagg tgcgaagcca agaactattc cggacggttc	420
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<220>

<223> hIL12AB_036

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caggccctga acttcaatag cgagaccgtc ccccaaaaga gcagcctgga ggaacccgac	1500
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<220>
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gggagcagcg acccccaggg agtgacctgc ggcgccgcca ccctgagcgc cgaaagggtg	540
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gccgccgagg agtccttgcc tatcgagggtg atggtcgacg cgggtgcacaa gctcaagtac	660
gaaaactaca ccagcagctt tttcatcagg gatatcatca aaccagaccc cccaagaac	720
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accattgacc gggatgatgtc ctacctgaac gccagc	1596

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cgtaagaacg ctagcatcag cgtcagggcc caggacaggt actatagcag ctccctgggtcc 960
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 caagccctga atttcaacag cgagaccgtg cccagaagt cctccctgga ggagcccgac 1500
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<210> 45
 <211> 22
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 <213> Artificial Sequence

<220>
 <223> Wild Type IL12B signal peptide Amino acids
 <400> 45

Met Cys His Gln Gln Leu Val Ile Ser Trp Phe Ser Leu Val Phe Leu
 1 5 10 15
 Ala Ser Pro Leu Val Ala
 20

<210> 46
 <211> 66
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Wild Type IL12B signal peptide Nucleic acids

<400> 46
 atgtgtcacc agcagttggt catctcttgg ttttccttg ttttctggc atctcccctc 60
 gtggcc 66

<210> 47
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Syn5 promoter

<400> 47
 attgggcacc cgtaaggg

18

<210> 48
 <211> 532
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> hIL12AB_001

<400> 48

Met Cys His Gln Gln Leu Val Ile Ser Trp Phe Ser Leu Val Phe Leu
 1 5 10 15

Ala Ser Pro Leu Val Ala Ile Trp Glu Leu Lys Lys Asp Val Tyr Val
 20 25 30

Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu
 35 40 45

Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln
 50 55 60

Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys
 65 70 75 80

Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
 85 90 95

Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp
 100 105 110

Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe
 115 120 125

Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
 130 135 140

Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg
 145 150 155 160

Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser
 165 170 175

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
 180 185 190

Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile
 195 200 205

Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
 210 215 220

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
 225 230 235 240

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
 245 250 255

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
 260 265 270

Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
 275 280 285

Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala
 290 295 300

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
 305 310 315 320

Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Gly Gly Gly Ser Arg
 325 330 335

Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu His
 340 345 350

His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys Ala
 355 360 365

Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp His
 370 375 380

Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu Pro
 385 390 395 400

Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr Ser
 405 410 415

Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe Met
 420 425 430

Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln
 435 440 445

Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys Arg
 450 455 460

Gln Ile Phe Leu Asp Gln Asn Met Leu Ala Val Ile Asp Glu Leu Met
 465 470 475 480

Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser Leu
 485 490 495

Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu
 500 505 510

His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser Tyr
 515 520 525

Leu Asn Ala Ser
 530

<210> 49
 <211> 533
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> hIL12AB_004

<400> 49

Met Gly Cys His Gln Gln Leu Val Ile Ser Trp Phe Ser Leu Val Phe
 1 5 10 15

Leu Ala Ser Pro Leu Val Ala Ile Trp Glu Leu Lys Lys Asp Val Tyr
 20 25 30

Val	Val	Glu	Leu	Asp	Trp	Tyr	Pro	Asp	Ala	Pro	Gly	Glu	Met	Val	Val		
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Leu	Thr	Cys	Asp	Thr	Pro	Glu	Glu	Asp	Gly	Ile	Thr	Trp	Thr	Leu	Asp		
	50					55					60						
Gln	Ser	Ser	Glu	Val	Leu	Gly	Ser	Gly	Lys	Thr	Leu	Thr	Ile	Gln	Val		
65					70				75						80		
Lys	Glu	Phe	Gly	Asp	Ala	Gly	Gln	Tyr	Thr	Cys	His	Lys	Gly	Gly	Glu		
				85					90					95			
Val	Leu	Ser	His	Ser	Leu	Leu	Leu	Leu	His	Lys	Lys	Glu	Asp	Gly	Ile		
			100						105					110			
Trp	Ser	Thr	Asp	Ile	Leu	Lys	Asp	Gln	Lys	Glu	Pro	Lys	Asn	Lys	Thr		
		115					120					125					
Phe	Leu	Arg	Cys	Glu	Ala	Lys	Asn	Tyr	Ser	Gly	Arg	Phe	Thr	Cys	Trp		
	130					135					140						
Trp	Leu	Thr	Thr	Ile	Ser	Thr	Asp	Leu	Thr	Phe	Ser	Val	Lys	Ser	Ser		
145					150					155					160		
Arg	Gly	Ser	Ser	Asp	Pro	Gln	Gly	Val	Thr	Cys	Gly	Ala	Ala	Thr	Leu		
				165					170					175			
Ser	Ala	Glu	Arg	Val	Arg	Gly	Asp	Asn	Lys	Glu	Tyr	Glu	Tyr	Ser	Val		
			180					185					190				
Glu	Cys	Gln	Glu	Asp	Ser	Ala	Cys	Pro	Ala	Ala	Glu	Glu	Ser	Leu	Pro		
		195					200					205					
Ile	Glu	Val	Met	Val	Asp	Ala	Val	His	Lys	Leu	Lys	Tyr	Glu	Asn	Tyr		
	210					215					220						
Thr	Ser	Ser	Phe	Phe	Ile	Arg	Asp	Ile	Ile	Lys	Pro	Asp	Pro	Pro	Lys		
225					230					235					240		
Asn	Leu	Gln	Leu	Lys	Pro	Leu	Lys	Asn	Ser	Arg	Gln	Val	Glu	Val	Ser		
				245				250						255			

Trp	Glu	Tyr	Pro	Asp	Thr	Trp	Ser	Thr	Pro	His	Ser	Tyr	Phe	Ser	Leu	260	265	270	
Thr	Phe	Cys	Val	Gln	Val	Gln	Gly	Lys	Ser	Lys	Arg	Glu	Lys	Lys	Asp	275	280	285	
Arg	Val	Phe	Thr	Asp	Lys	Thr	Ser	Ala	Thr	Val	Ile	Cys	Arg	Lys	Asn	290	295	300	
Ala	Ser	Ile	Ser	Val	Arg	Ala	Gln	Asp	Arg	Tyr	Tyr	Ser	Ser	Ser	Trp	305	310	315	320
Ser	Glu	Trp	Ala	Ser	Val	Pro	Cys	Ser	Gly	Gly	Gly	Gly	Gly	Gly	Ser	325	330	335	
Arg	Asn	Leu	Pro	Val	Ala	Thr	Pro	Asp	Pro	Gly	Met	Phe	Pro	Cys	Leu	340	345	350	
His	His	Ser	Gln	Asn	Leu	Leu	Arg	Ala	Val	Ser	Asn	Met	Leu	Gln	Lys	355	360	365	
Ala	Arg	Gln	Thr	Leu	Glu	Phe	Tyr	Pro	Cys	Thr	Ser	Glu	Glu	Ile	Asp	370	375	380	
His	Glu	Asp	Ile	Thr	Lys	Asp	Lys	Thr	Ser	Thr	Val	Glu	Ala	Cys	Leu	385	390	395	400
Pro	Leu	Glu	Leu	Thr	Lys	Asn	Glu	Ser	Cys	Leu	Asn	Ser	Arg	Glu	Thr	405	410	415	
Ser	Phe	Ile	Thr	Asn	Gly	Ser	Cys	Leu	Ala	Ser	Arg	Lys	Thr	Ser	Phe	420	425	430	
Met	Met	Ala	Leu	Cys	Leu	Ser	Ser	Ile	Tyr	Glu	Asp	Leu	Lys	Met	Tyr	435	440	445	
Gln	Val	Glu	Phe	Lys	Thr	Met	Asn	Ala	Lys	Leu	Leu	Met	Asp	Pro	Lys	450	455	460	
Arg	Gln	Ile	Phe	Leu	Asp	Gln	Asn	Met	Leu	Ala	Val	Ile	Asp	Glu	Leu	465	470	475	480
Met	Gln	Ala	Leu	Asn	Phe	Asn	Ser	Glu	Thr	Val	Pro	Gln	Lys	Ser	Ser	485	490	495	

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
500 505 510

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser
515 520 525

Tyr Leu Asn Ala Ser
530

<210> 50
<211> 85
<212> RNA
<213> Artificial Sequence

<220>
<223> miR-122

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ucacacuaaa uagcuacugc uaggc 85

<210> 51
<211> 22
<212> RNA
<213> Artificial Sequence

<220>
<223> miR-122-3p

<400> 51
aacgccauua ucacacuaaa ua 22

<210> 52
<211> 22
<212> RNA
<213> Artificial Sequence

<220>
<223> miR-122-3p binding site

<400> 52
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<210> 53
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<212> RNA
<213> Artificial Sequence

<220>

<223> miR-122-5p

<400> 53

uggaguguga caaugguguu ug

22

<210> 54

<211> 22

<212> RNA

<213> Artificial Sequence

<220>

<223> miR-122-5p binding site

<400> 54

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<210> 55

<211> 1829

<212> DNA

<213> Artificial Sequence

<220>

<223> hIL12AB_001

<400> 55

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ggtttagcct tgtgttcctg gcctcccccc ttgtcgctat ttgggagctc aagaaggacg 180

tgtacgtggg ggagttggat tggtagccag acgcgcccgg agagatggta gttctgacct 240

gtgatacccc agaggaggac ggcatacact ggacgctgga ccaaagcagc gaggttttgg 300

gctcagggaa aacgctgacc atccaggtga aggaattcgg cgacgcgggg cagtacacct 360

gccataaggg aggagaggtg ctgagccatt cccttcttct gctgcacaag aaagaggacg 420

gcatctgggc taccgacatc ctgaaagacc agaaggagcc caagaacaaa accttctga 480

ggtgcgaggc caagaactac tccggcaggt tcaactgttg gtggctgacc accatcagta 540

cagacctgac ttttagtgta aaaagctcca gaggctcgtc cgatcccca ggggtgacct 600

gcggcgagc cactctgagc gctgagcgcg tgcgcggtga caataaagag tacgagtaca 660

gcgttgagtg tcaagaagat agcgttgcc ctgccgccga ggagagcctg cctatcgagg 720

tgatggttga cgcagtgac aagcttaagt acgagaatta caccagctca ttcttcatta 780

gagatataat caagcctgac ccaccaaga acctgcagct gaagccactg aaaaactcac 840

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ggctctttgaa taaagtctga gtgggcggc	1829

<210> 56
 <211> 1829
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_002

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ggttcagcct ggtgttcctg gccagcccc tggtggccat ctgggagctg aagaaggacg	180
tgtacgtggg ggagttggat tggtagcccg acgcccccg cgagatgggtg gtgctgacct	240
gcgacacccc cgaggaggac ggcatcacct ggaccctgga ccagagcagc gaggtgctgg	300
gcagcggcaa gaccctgacc atccaggtga aggagttcgg cgacgccggc cagtacacct	360
gccacaaggg cggcgagggtg ctgagccaca gcctgctgct gctgcacaag aaggaggacg	420
gcatctggag caccgacatc ctgaaggacc agaaggagcc caagaacaag accttcctga	480
gatgcgaggc caagaactac agcggcagat tcacctgctg gtggctgacc accatcagca	540

ccgacctgac cttcagcgtg aagagcagca gaggcagcag cgacccccag ggcgtgacct	600
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gcgtggagtg ccaggaagat agcgctgcc ccgccgccga ggagagcctg cccatcgagg	720
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ccaagatag atactacagc agcagctgga gcgagtgggc cagcgtgccc tgcagcggcg	1080
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agaacatgct ggccgtgatc gacgagctga tgcaggccct gaacttcaac agcgagaccg	1560
tgccccagaa gagcagcctg gaggagcccg acttctacaa gaccaagatc aagctgtgca	1620
tcctgctgca cgccttcaga atcagagccg tgaccatcga cagagtgatg agctacctga	1680
acgccagctg ataataggct ggagcctcgg tggccatgct tcttgcccct tgggcctccc	1740
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ggtctttgaa taaagtctga gtgggcggc	1829

<210> 57
 <211> 1829
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<220>
 <223> hIL12AB_003

<400> 57	
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aaagaagagt aagaagaaat ataagagcca ccatgtgtca ccagcagttg gtcattcttt	120

ggttttccct ggtttttctg gcatctcccc tcgtggccat ctgggaactg aagaaagacg	180
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<220>

<223> hIL12AB_020

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 <212> DNA
 <213> Artificial Sequence

<220>
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<220>
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<210> 95

<211> 1890

<212> DNA
<213> Artificial Sequence

<220>
<223> hIL12AB_001

<220>
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<222> (1)..(1)
<223> 5' terminal guanosine cap

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<210> 96
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_002

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

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agcagcttct tcatcagaga tatcatcaag cccgaccccc ccaagaacct gcagctgaag      780
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<213> Artificial Sequence

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<220>
<223> hIL12AB_003

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<220>
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<223> 5' terminal guanosine cap

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_004

<220>
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 <222> (1)..(1)
 <223> 5' terminal guanosine cap

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cgtgtcatgt cctacttaaa tgccagctga taataggctg gagcctcggg ggccatgctt	1680
cttgcccctt gggcctcccc ccagcccctc ctccccttcc tgcacccgta cccccaaac	1740
accattgtca cactccagtg gtctttgaat aaagtctgag tgggaggcaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaaaaatc tag	1893

<210> 99
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_005

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 99	
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gagctgaaga aagacgtcta cgtagtagag ttggattggt acccagacgc acctggagaa	180
atggtggttc tcacctgtga cagccagaa gaagacggta tcacctggac gctggaccag	240
agctcagaag ttcttggcag tggaaaaacg ctgaccatac aagtaaaaga atttggggat	300
gctggccagt acacctgcca caaaggagga gaagttctca gccacagcct gctgctgctg	360
cacaagaaag aagatggcat ctggagcaca gatattttaa aagaccagaa ggagcccaag	420
aacaaaacct tccttcgatg tgaggccaag aactacagtg gccgcttcac ctgctggtgg	480

ctcaccacca tcagcacaga cctcaccttc tcggtgaaga gcagccgtgg cagctcagac	540
ccccaaggag tcacctgtgg ggcgggccacg ctgtcggcag aaagagttcg aggtgacaac	600
aaggaatatg aatactcggg ggaatgtcaa gaagattcgg cctgcccggc ggacagaagaa	660
agtcttccca tagaagtcac ggtggatgct gttcacaaat taaaatatga aaactacacc	720
agcagcttct tcatcagaga tatcatcaag ccagaccgc ccaagaacct gcagctgaag	780
cccctgaaga acagccggca ggtggaagtt tcctgggagt acccagatac gtggagcacg	840
ccgcacagct acttcagcct caccttctgt gtacaagtac aaggcaagag caagagagag	900
aagaaagatc gtgtcttcac agataaaacc tcggcgacgg tcatctgcag gaagaatgcc	960
tccatctcgg ttcgagccca ggaccgctac tacagcagca gctggagtga gtgggcctcg	1020
gtgccctgca gtggtggcgg cggcgggcggc agcagaaacc ttctgtggc cacgccggac	1080
cctggcatgt tcccgtgcct gcaccacagc caaaatttac ttcgagctgt ttctaakatg	1140
ctgcagaaaag cacggcaaac tttagaattc tacccttgca cctcagaaga aatagaccat	1200
gaagatatca ccaaagataa aaccagcact gtagaggcct gcctgcccct ggagctcacc	1260
aagaatgaat cctgcctcaa cagcagagag accagcttca tcaccaatgg cagctgcctg	1320
gccagcagga aaaccagctt catgatggcg ctctgcctga gcagcatcta tgaagatttg	1380
aagatgtacc aagtagaatt taaaaccatg aatgccaaagc tgctcatgga cccaagcgg	1440
cagatatttt tggatcaaaa catgctggct gtcattgatg agctcatgca agcattaaac	1500
ttcaactcag agacggtgcc ccagaagagc agcctggagg agccagattt ctacaaaacc	1560
aagatcaagc tctgcatctt attacatgcc ttccgcatcc gggcggtcac cattgaccgt	1620
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gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaccc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 100
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_006

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<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' terminal guanosine cap

<400> 100
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gagctgaaga aggacgtgta cgtggtggag ttggattggt accccgacgc ccccggcgag      180
atggtggtgc tgacctgtga ccccccgag gaggacggca tcacctggac cctggaccag      240
agcagcgagg tgctgggcag cggcaagacc ctgaccatcc aggtgaagga gttcggggac      300
gccggccagt acacctgcca caagggcggc gaggtgctga gccacagcct gctgctgctg      360
cacaagaagg aggacggcat ctggagcaca gatatcctga aggaccagaa ggagcccaag      420
aacaagacct tcctgagatg cgaggccaag aactacagcg gcagattcac ctgctggtgg      480
ctgaccacca tcagcacaga tttgaccttc agcgtgaaga gcagcagagg cagcagcgac      540
ccccagggcg tgacctgcgg cgccgccacc ctgagcgccg agagagtgag aggtgacaac      600
aaggagtacg agtacagcgt ggagtgccag gaagatagcg cctgccccgc cgccgaggag      660
agcctgcca tcgaggtgat ggtggacgcc gtgcacaagc tgaagtacga gaactacacc      720
agcagcttct tcatcagaga tatcatcaag cccgaccgcg cgaagaacct gcagctgaag      780
cccctgaaga acagccggca ggtggaggtg agctgggagt accccgacac ctggagcacc      840
ccccacagct acttcagcct gaccttctgc gtgcaggtgc agggcaagag caagagagag      900
aagaaagata gagtgttcac agataagacc agcgccaccg tgatctgcag aaagaacgcc      960
agcatcagcg tgagagccca agatagatac tacagcagca gctggagcga gtgggccagc     1020
gtgccctgca gcggcgggcg cggcggcggc agcagaaacc tgcccgTggc ccccccgac     1080
cccgcatgt tccctgcct gcaccacagc cagaacctgc tgagagccgt gagcaacatg     1140
ctgcagaagg cccggcagac cctggagttc taccctgca ccagcgagga gatcgaccac     1200
gaagatatca ccaaagataa gaccagcacc gtggaggcct gcctgcccct ggagctgacc     1260
aagaatgaaa gctgcctgaa cagcagagag accagcttca tcaccaacgg cagctgcctg     1320
gccagcagaa agaccagctt catgatggcc ctgtgcctga gcagcatcta cgaggacctg     1380
aagatgtacc aggtggagtt caagaccatg aacgccaagc tgctgatgga cccaagcgg     1440
cagatcttcc tggaccagaa catgctggcc gtgatcgacg agctgatgca ggccctgaac     1500
ttcaacagcg agaccgtgcc ccagaagagc agcctggagg agcccgactt ctacaagacc     1560

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aagatcaagc tgtgcatcct gctgcacgcc ttcagaatca gagccgtgac catcgacaga	1620
gtgatgagct acctgaacgc cagctgataa taggctggag cctcgggtggc catgcttctt	1680
gccccttggg cctcccccca gcccctcctc cccttcctgc acccgtaccc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 101
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_007

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 101	
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gagctgaaga aggacgttta cgtagtggag ttggattggg accctgacgc acctggagaa	180
atggtgggtc tcacctgtga cactcctgag gaggacggtc tcacctggac gttggaccag	240
tcttctgagg ttcttggcag tggaaaaact cttactattc aggtgaagga gtttggagat	300
gctggccagt acacctgcca caaggggtgg gaagttctca gccacagttt acttcttctt	360
cacaagaagg aggatggcat ctggtctact gacattttta aagaccagaa ggagcccaag	420
aacaaaacat tccttcgttg tgaagccaag aactacagtg gtcgtttcac ctgctgggtg	480
cttactacta tttctactga cttactttc tctgtgaagt cttctcgtgg ctcttctgac	540
cctcagggtg tcacctgtgg ggctgctact ctttctgctg agcgtgtgcg tggtgacaac	600
aaggagtatg aatactcggg ggagtgccag gaagattctg cctgccctgc tgctgaggag	660
tctcttccta ttgaggtgat ggtggatgct gtgcacaagt taaaatatga aaactacact	720
tcttctttct tcattcgtga cattataaaa cctgaccctc ccaagaacct tcagttaaaa	780
cctttaaaaa actctcgtca ggtggaggtg tcctgggagt accctgacac gtggtctact	840
cctcactcct acttctctct tactttctgt gtccaggtgc agggcaagtc caagcgtgag	900

aagaaggacc gtgtcttcac tgacaaaaca tctgctactg tcctctgcag gaagaatgca	960
tccatctctg tgcgtgctca ggaccgttac tacagctctt cctgggtctga gtgggcttct	1020
gtgccctgct ctggcggcgg cggcggcggc agcagaaatc ttctgtggc tactcctgac	1080
cctggcatgt tcccctgcct tcaccactcg cagaaccttc ttctgtgtgt gagcaacatg	1140
cttcagaagg ctctgcaaac tttagaattc tacccttgca cttctgagga gattgaccat	1200
gaagatatca ccaaagataa aacatctact gtggaggcct gccttccttt agagctgacc	1260
aagaatgaat cctgcttaaa ttctctgtgag acgtctttca tcaccaatgg cagctgcctt	1320
gcctcgcgca aaacatcttt catgatggct ctttgccttt cttccatcta tgaagattta	1380
aaaatgtacc aggtggagtt caagaccatg aatgcaaagc ttctcatgga cccaagcgt	1440
cagatatttt tggaccagaa catgcttgct gtcattgatg agctcatgca ggctttaaac	1500
ttcaactctg agacgggtgcc tcagaagtct tctttagaag agcctgactt ctacaagacc	1560
aagataaaac tttgcattct tcttcatgct ttccgcatcc gtgctgtgac tattgaccgt	1620
gtgatgtcct acttaaatgc ttcttgataa taggctggag cctcgggtggc caagcttctt	1680
gccccttggg cctcccccca gcccctcctc cccttcctgc acccgtagcc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 102
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_008

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 102	
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caactcgtga ttagctgggt cagtctcgtg ttcttggcct ctccgctggg ggccatctgg	120
gagcttaaga aggacgtgta cgtgggtggag ctcgattggg accccgacgc acctggcgag	180
atggtggtgc taacctgcga tcccccgag gaggacggga tcacttggac cctggatcag	240

agtagcgaag tcttgggctc tggcaaaaca ctcacaatcc aggtgaagga attcggagac	300
gctggtcagt acacttgcca caaggggggt gaagtgctgt ctcacagcct gctgttactg	360
cacaagaagg aggatgggat ctgggtcaacc gacatcctga aggatcagaa ggagcctaag	420
aacaagacct ttctgaggtg tgaagctaag aactattccg gaagattcac ttgctgggtg	480
ttgaccacaa tcagcactga cctgaccttt tccgtgaagt ccagcagagg aagcagcgat	540
cctcagggcg taacgtgctg cgcggtacc ctgtcagctg agcgggtag aggcgacaac	600
aaagagtatg agtactccgt ggagtgtcag gaagatagcg cctgccccgc agccgaggag	660
agtctgcca tcgaggtgat ggtggacgct gtccataagt taaaatacga aaattacaca	720
agttcctttt tcatccgcga tattatcaaa cccgatcccc ccaagaacct gcagctgaag	780
cccctgaaga atagccgaca ggtggaagtc tcttgggagt atcctgacac ctggtccacg	840
cctcacagct acttttagtct gactttctgt gtccagggtcc agggcaagag caagagagag	900
aaaaaggata gagtgtttac tgacaaaaca tctgctacag tcactctgcag aaagaacgcc	960
agtatctcag tgagggcgca agatagatac tacagtagta gctggagcga atgggctagc	1020
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cctgggatgt tcccttgctt ccatcactca cagaacctgc tcagagcagt gagcaacatg	1140
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gaagatataa caaaggataa aaccagcacc gtggaggcct gtctgcctct ggaactcaca	1260
aagaatgaaa gctgtctgaa ttccaggga acctccttca ttactaacgg aagctgtctc	1320
gcatctcgca aaacatcatt catgatggcc ctctgcctgt cttctatcta tgaagatctc	1380
aagatgtatc aggtggagtt caaaacaatg aacgccaagc tgctgatgga cccaagcgg	1440
cagatcttcc tggaccagaa catgctggca gtgatcgatg agctgatgca agccttgaac	1500
ttcaactcag agacgggtgcc gcaaaagtcc tcgttgaggg aaccagattt ttacaaaacc	1560
aaaatcaagc tgtgtatcct tcttcacgcc tttcggatca gagccgtgac tatcgaccgg	1620
gtgatgtcat acctgaatgc ttctgataa taggctggag cctcgggtggc catgcttctt	1680
gcccttggg cctcccccca gccctcctc cccttcctgc acccgtagcc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 103
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_009

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 103
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 gagctgaaga aagacgtcta cgtagtagag ttggattggt acccagacgc acctggagaa 180
 atggtggttc tcacctgcga cagccagaa gaagacggtc tcacctggac gctggaccag 240
 agcagcgaag tactgggcag tggaaaaacg ctgaccatac aagtaaaaga atttggcgat 300
 gctggccagt acacctgccca caaaggagga gaagtactga gccacagcct gctgctgctg 360
 cacaagaaag aagatggcat ctggagcacc gacattttta aagaccagaa ggagcccaag 420
 aacaaaacct tccttcgatg tgaggcgaag aactacagtg gccgcttcac ctgctggtgg 480
 ctcaccacca tcagcaccga cctcaccttc tcggtgaaga gcagccgtgg tagctcagac 540
 cccaaggag tcacctgtgg ggcgccacg ctgtcggcag aaagagttcg aggcgacaac 600
 aaggaatatg aatactcggg ggaatgtcaa gaagattcgg cctgcccggc ggagagaaga 660
 agtctgcca tagaagtcac ggtggatgct gttcacaaat taaaatatga aaactacacc 720
 agcagcttct tcacagaga tatcatcaag ccagaccccc ccaagaacct gcagctgaag 780
 cccctgaaga acagccggca ggtggaagtt tcctgggagt acccagatac gtggagcacg 840
 ccgcacagct acttcagcct caccttctgt gtacaagtac aaggcaagag caagagagag 900
 aagaaagatc gtgtcttcac cgacaaaacc tcggcgacgg tcacctgcag gaagaatgca 960
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 cctggcatgt ttccgtgcct gcaccacagc caaaatttat tacgagctgt tagcaacatg 1140
 ctgcagaaag cacggcaaac tttagaattc taccctgca cctcagaaga aatagaccat 1200
 gaagatatca ccaaagataa aaccagcact gtagaggcct gcctgcccct ggagctcacc 1260
 aagaacgaga gctgcctcaa tagcagagag accagcttca tcaccaatgg cagctgcctg 1320

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gccagcagga aaaccagctt catgatggcg ctctgcctga gcagcatcta tgaagatctg      1380
aagatgtacc aagtagaatt taaaaccatg aatgccaagc tgctcatgga cccaagcgg      1440
cagatattcc tcgaccaaaa catgctggct gtcattgatg agctcatgca agcattaaac      1500
ttcaactcag agacggtgcc ccagaagagc agcctggagg agccagattt ctacaaaacc      1560
aagatcaagc tctgcatctt attacatgcc ttccgcatcc gggcggtcac cattgaccgt      1620
gtcatgtcct acttaaatgc cagctgataa taggctggag cctcgggtggc catgcttctt      1680
gccccttggg cctcccccca gccctcctc cccttcctgc acccgtagcc cccaaacacc      1740
attgtcacac tccagtgggc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa      1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa      1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag                                     1890

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<210> 104
<211> 1890
<212> DNA
<213> Artificial Sequence

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<220>
<223> hIL12AB_010

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<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' terminal guanosine cap

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<400> 104
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gagctgaaga aagacgtcta cgtagtagag ttggattggt acccggacgc tcctggagaa      180
atggtgggtc tcacctgcga cactcctgaa gaagacggta tcacctggac gctggaccaa      240
agcagcgaag ttttaggctc tggaaaaacg ctgaccatac aagtaaaaga atttggcgac      300
gctggccagt acacgtgcc acaaggagga gaagttttaa gccacagttt acttcttctt      360
cacaagaaag aagatggcat ctggagtaca gatattttta aagaccagaa ggagcctaag      420
aacaaaacct tcctccgctg tgaagctaag aactacagtg gtcgtttcac ctgctggtgg      480
ctcaccacca tctccactga cctcaccttc tctgtaaaat caagccgtgg ttcttctgac      540
ccccaaggag tcacctgtgg ggctgccacg ctgagcgctg aaagagtctg aggcgacaac      600
aaggaatatg aatattctgt ggaatgtcaa gaagattctg cctgcccggc ggcagaagaa      660

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agtcttccca tagaagtcac ggtggacgct gttcacaaat taaaatatga aaactacacc      720
agcagcttct tcattcgtga catcatcaaa ccagaccctc ctaagaacct tcagttaaaa      780
ccgctgaaga acagccggca ggtggaagtt tcctgggagt acccagatac gtggagtacg      840
ccgcactcct acttcagttt aaccttctgt gtacaagtac aaggaaaatc aaaaagagag      900
aagaaagatc gtgtcttcac tgacaaaaca tctgccacgg tcatctgccg taagaacgct      960
tccatctcgg ttcgagccca ggaccgctac tacagcagca gctggagtga gtgggcatct     1020
gttccttgca gtggtggcgg cggcggcggc agccgcaacc ttctgtggc cacgccggac     1080
cctggcatgt tcccgctgcct tcaccactcg caaaatcttc ttcgtgctgt ttctaacatg     1140
ctgcagaagg cgcggaacac tttagaattc taccctgtga cttctgaaga aatagaccat     1200
gaagatatca ccaagataa aaccagcacg gtggaggcct gccttccttt agaacttact     1260
aagaacgaaa gttgccttaa cagccgtgag accagcttca tcaccaatgg cagctgcctt     1320
gctagcagga agaccagctt catgatggcg ctgtgccttt cttccatcta tgaagatctt     1380
aagatgtacc aagtagaatt taaaaccatg aatgccaaat tattaatgga cccaagcgg      1440
cagatattcc tcgacaaaaa catgctggct gtcattgatg agctcatgca agcattaaac     1500
ttcaactcag aaactgttcc ccagaagtca tctttagaag aaccagattt ctacaaaaca     1560
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gtcatgtcct acttaaatgc ttcttgataa taggctggag cctcgggtggc catgcttctt     1680
gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaccc cccaaacacc     1740
attgtcacac tccagtgggc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa     1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa     1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag                                     1890

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<210> 105
<211> 1890
<212> DNA
<213> Artificial Sequence

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<220>
<223> hIL12AB_011

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<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' terminal guanosine cap

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<400> 105

ggggaaataa gagagaaaag aagagtaaga agaaatataa gagccaccat gtgccaccag	60
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gagctgaaga aggacgtgta cgtggtggag ttggattggt acccgacgc gccgggggag	180
atggtggtgc tgacgtgcga cacgccggag gaggacggga tcacgtggac gctggaccag	240
agcagcgagg tgctggggag cgggaagacg ctgacgatcc aggtgaagga gttcggggac	300
gcggggcagt acacgtgccca caaggggggg gaggtgctga gccacagcct gctgctgctg	360
cacaagaagg aggacgggat ctggagcaca gatatcctga aggaccagaa ggagccgaag	420
aacaagacgt tcctgaggtg cgaggcgaag aactacagcg ggaggttcac gtgctggtgg	480
ctgacgacga tcagcacgga cctgacgttc agcgtgaaga gcagcagggg gagcagcgac	540
ccgcaggggg tgacgtgcgg ggcggcgacg ctgagcgcgg agagggtgag gggtgacaac	600
aaggagtacg agtacagcgt ggagtgccag gaagatagcg cgtgcccggc ggcggaggag	660
agcctgccga tcgaggtgat ggtggacgcg gtgcacaagc tgaagtacga gaactacacg	720
agcagcttct tcatcagaga tatcatcaag ccggacccgc cgaagaacct gcagctgaag	780
ccgctgaaga acagcaggca ggtggaggtg agctgggagt acccagatac gtggagcacg	840
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aataaaaactt tcctgagatg cgaggcaaaa aactatagcg gccgctttac ttgctgggtg	480
cttacaacaa tctctaccga tttactttc tccgtgaagt ctagcagagg atcctctgac	540
ccgcaaggag tgacttgcgg agccgccacc ttgagcgccg aaagagtccg tggcgataac	600

aaagaatacg agtactccgt ggagtgccag gaagattccg cctgcccagc tgccgaggag	660
tccctgccc a ttgaagtgat ggtggatgcc gtccacaagc tgaagtacga aaactatacc	720
agcagcttct tcatccggga tatcattaag cccgaccctc ctaaaaacct gcaacttaag	780
cccctaaaga atagtcggca ggttgaggtc agctgggaat atcctgacac atggagcacc	840
cccactctt atttctccct gaccttctgc gtgcaggtgc agggcaagag taaacgggag	900
aaaaaagata gggctctttac cgataaaacc agcgctacgg ttatctgtcg gaagaacgct	960
tccatctccg tccgcgctca ggatcgttac tactcgtcct catggagcga gtgggccagc	1020
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cctggcatgt tcccctgtct gcatcatagc cagaacctgc tcagagccgt gagcaacatg	1140
ctccagaagg ccaggcaaac tttggagttc taccctgtga catctgagga aatcgatcac	1200
gaagatataa ccaaagataa aacctctaca gtagaggctt gtttgcccct ggagttgacc	1260
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cagatcttcc tcgacaaaaa catgctcgct gtgatcgatg agctgatgca ggctctcaac	1500
ttcaattccg aaacagtgcc acagaagtcc agtctggaag aaccgactt ctacaagacc	1560
aagattaagc tgtgtatttt gctgcatgcy tttagaatca gagccgtgac cattgatcgg	1620
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gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaccc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 113
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_019

<220>
 <221> misc_feature
 <222> (1)..(1)

<223> 5' terminal guanosine cap

<400> 113

ggggaaataa gagagaaaag aagagtaaga agaaatataa gagccaccat gtgccaccag	60
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gagctgaaga aagacgttta cgtagtagag ttggattggt acccagacgc acctggagaa	180
atggtgggttc tcacctgtga cactcctgaa gaagacggta tcacctggac gctggaccaa	240
agctcagaag ttcttggcag tggaaaaacg ctgaccatac aagtaaaaga atttggggat	300
gctggccagt acacgtgcca caaaggagga gaagttctca gccacagttt acttcttctt	360
cacaagaaag aagatggcat ctggtccaca gatattttta aagaccagaa ggagcccaag	420
aacaaaacct tcctccgctg tgaggccaag aactacagtg gtcgtttcac ctgctgggtg	480
ctcaccacca tctccactga cctcaccttc tctgtaaaaa gcagccgtgg ttcttctgac	540
ccccaaggag tcacctgtgg ggctgccacg ctctcggcag aaagagtctg aggtgacaac	600
aaggaatatg aatattctgt ggaatgtcaa gaagattctg cctgcccggc ggagagaaga	660
agtcttccca tagaagtcac ggtggatgct gttcacaaat taaaatatga aaactacacc	720
agcagcttct tcattcgtga catcatcaaa ccagaccgc ccaagaacct tcagttaaaa	780
cctttaaaaa acagccggca ggtagaagtt tcctgggagt acccagatac gtggtccacg	840
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aagaaagatc gtgtcttcac tgacaaaaca tctgccacgg tcattctgcag gaagaatgcc	960
tccatctcgg ttcgagccca ggaccgtac tacagcagca gctggagtga gtgggcatct	1020
gttccctgca gtggtggcgg cggcggcggc agccgcaacc ttctgtggc cacgccggac	1080
cctggcatgt tcccgctgct tcaccactcc caaaatcttc ttctgtctgt ttctaactg	1140
ctgcagaagg cgcgccaac tttagaattc taccctgca cttctgaaga aatagaccat	1200
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gcctcgcgca agaccagctt catgatggcg ctgtgccttt cttccatcta tgaagattta	1380
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ttcaactcag aaactgttcc ccagaagtca tctttagaag agccagattt ctacaaaaca	1560
aaaataaaac tctgcattct tcttcatgcc ttccgcatcc gtgctgtcac cattgaccgt	1620
gtcatgtcct acttaaatgc ttcttgataa taggctggag cctcgggtggc catgcttctt	1680

gccccttggg cctccccca gccctcctc cccttcctgc acccgtaccc cccaaacacc	1740
attgtcacac tccagtgggc tttgaataaa gtctgagtg ggcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 114
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_020

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 114	
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gagctgaaga aggacgtgta cgtgggtggag ttggattggt accccgacgc tcccggcgag	180
atggtgggtgc tgacctgcga ccccccgag gaggacggga tcacctggac cctggatcag	240
tcaagcgagg tgctgggaag cggcaagacc ctgaccatcc aggtgaagga gttcggcgac	300
gccggccaat acacttgcca caagggaggc gaggtgctgt cccactccct cctgctgctg	360
cacaaaaagg aagacggcat ctggagcacc gacatcctga aagaccagaa ggagcctaag	420
aacaaaacat tcctcagatg cgaggccaag aattactccg ggagattcac ctgttggtgg	480
ctgaccacca tcagcacaga cctgaccttc agcgtgaaga gcagcagagg cagcagcgac	540
ccccagggcg tgacctgtgg cgccgccacc ctgagcgccg aaagagtgcg cggcgacaac	600
aaggagtacg agtactccgt ggaatgccag gaagatagcg cctgccccgc cgccgaggag	660
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tctagcttct tcatcagaga tatcatcaag cccgatcccc ccaagaacct gcagctgaaa	780
cccctgaaga acagccggca ggtggaggtg agctgggagt atccccgacac ctggtccacc	840
ccccacagct attttagcct gaccttctgc gtgcaagtgc agggcaagag caagagagag	900
aagaaggacc gcgtgttcac cgacaaaacc agcgccaccg tgatctgcag aaagaacgcc	960
agcatcagcg tgagggccca ggatagatac tacagttcca gctggagcga gtgggccagc	1020

gtgccctgca gcgggcggcg cgggggagggc tcgagaaacc tgcccgtggc tacccccgat	1080
cccggaatgt tcccctgcct gcaccacagc cagaacctgc tgagggcggt gtccaacatg	1140
cttcagaagg cccggcagac cctggagttc tacccctgta cctctgagga gatcgatcat	1200
gaagatatca caaaagataa aaccagcacc gtggaggcct gcctgcccct ggagctgacc	1260
aagaacgaga gctgcctgaa ctcccgcgag accagcttca tcacgaacgg cagctgcctg	1320
gccagcagga agacctcctt catgatggcc ctgtgcctga gcagcatcta cgaggacctg	1380
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caaatcttcc tggaccagaa catgctggca gtgatcgacg agtcatgca ggcctgaac	1500
ttcaatagcg agacgggtccc ccagaagagc agcctggagg agcccgactt ttacaagacc	1560
aagatcaagc tgtgcatcct gctgcacgcc tttagaatcc gtgccgtgac cattgacaga	1620
gtgatgagct acctgaatgc cagctgataa taggctggag cctcgggtggc catgcttctt	1680
gccccttggg cctcccccca gcccctcctc cccttcctgc acccgtagcc cccaaacacc	1740
attgtcacac tccagtgggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 115
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_021

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 115	
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gagctgaaga aagacgtgta cgtcgtggaa ctggactggt atccggacgc cccgggcgag	180
atggtggtgc tgacctgtga ccccccgag gaggacggca tcacctggac gctggaccaa	240
tcctccgagg tgctgggaag cggcaagacc ctgaccatcc aggtgaagga attcggggac	300
gccgggcagt acacctgcca caaggggggc gaagtgctgt cccactcgct gctgctcctg	360

cataagaagg aggatggaat ctggtccacc gacatcctca aagatcagaa ggagcccaag	420
aacaagacgt tcctgcgctg tgaagccaag aattattcgg ggcgattcac gtgctggtgg	480
ctgacaacca tcagcaccga cctgacgttt agcgtgaaga gcagcagggg gtccagcgac	540
ccccagggcg tgacgtgcgg cgccgccacc ctctccgccg agaggggtgcg gggggacaat	600
aaggagtacg agtacagcgt ggaatgccag gaggacagcg cctgccccgc cgcgaggaa	660
agcctcccga tagaggatgat ggtggacgcc gtgcacaagc tcaagtatga gaattacacc	720
agcagctttt tcatccggga cattatcaag cccgaccccc cgaagaacct ccagctgaag	780
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ccgcacagct acttctccct gaccttctgt gtgcaggtgc agggcaagtc caagagggaa	900
aagaaggaca gggttttcac cgacaagacc agcgcgaccg tgatctgccg gaagaacgcc	960
agcataagcg tccgcgcccc agataggtac tacagcagct cctggagcga gtgggctagc	1020
gtgccctgca gcggggggcg ggggtggggc tccaggaacc tgccagtggc gacccccgac	1080
cccggcatgt tcccctgcct ccatcacagc cagaacctgc tgagggccgt cagcaatatg	1140
ctgcagaagg ccaggcagac cctggaattc taccctgca cgtcggagga gatcgatcac	1200
gaggatatca caaaagacaa gacttccacc gtggaggcct gcctgcccct ggagctcacc	1260
aagaatgagt cctgtctgaa ctcccggaa accagcttca tcaccaacgg gtccctgcctg	1320
gccagcagga agaccagctt tatgatggc ctgtgcctgt cgagcatcta cgaggacctg	1380
aagatgtacc aggtcgagtt caagacaatg aacgccaaagc tgctgatgga cccaagagg	1440
caaatcttcc tggaccagaa tatgcttgcc gtcacgcagc agtcatgca ggcctgaac	1500
ttcaactccg agaccgtgcc ccagaagagc agcctggagg agcccgactt ctacaagacc	1560
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gtgatgtcct acctgaacgc cagctgataa taggctggag cctcgggtggc catgcttctt	1680
gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaacc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 116
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>

<223> hIL12AB_022

<220>

<221> misc_feature

<222> (1)..(1)

<223> 5' terminal guanosine cap

<400> 116

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gagctcaaaa aggacgtgta cgtggtggag ctcgactggt acccagacgc ccccggggag      180
atggtggtgc tgacctgcga ccccccgaa gaagacggca tcacgtggac cctcgaccag      240
tccagcgagg tgctggggag cgggaagact ctgaccatcc aggtcaagga gttcggggac      300
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cacaagaagg aggacgggat ctggtccaca gacatactga aggaccagaa ggagccgaag      420
aataaaacct ttctgaggtg cgaggccaag aactattccg gcagggttcac gtgctggtgg      480
cttacaacaa tcagcacaga cctgacgttc agcgtgaagt ccagccgcgg cagcagcgac      540
ccccaggggg tgacctgcgg cgccgccacc ctgagcgccg agcgggtgcg cggggacaac      600
aaggagtacg agtactccgt ggagtgccag gaagacagcg cctgtcccgc cgccgaagag      660
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agcagctttt tcatacgcgga catcatcaag cccgaccccc ccaagaacct gcagcttaag      780
cccctgaaga atagccggca ggtggaggtc tcctgggagt accccgacac ctggtcaacg      840
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aagaaagatc ggggtgttcac cgacaagacc tccgccacgg tgatctgcag gaagaacgcc      960
agcatctccg tgagggcgca agacaggtac tactccagca gctggtccga atgggccagc     1020
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cccggcatgt ttccctgcct gcaccacagc cagaacctcc tgagggccgt gtccaacatg     1140
ctgcagaagg ccaggcagac tctggagttc taccctgca cgagcgagga gatcgatcac     1200
gaggacatca ccaaggataa gaccagcact gtggaggcct gccttcccct ggagctgacc     1260
aagaacgaga gctgtctgaa ctccagggag acctcattca tcaccaacgg ctctgcctg      1320
gccagcagga aaaccagctt catgatggcc ttgtgtctca gctccatcta cgaggacctg      1380
aagatgtatc aggtcgagtt caagacaatg aacgccaagc tgctgatgga ccccaaaagg      1440
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cagatcttcc tggaccagaa catgctggcc gtcatcgacg agctgatgca ggcctgaac	1500
ttcaacagcg agacggtgcc ccagaaaagc tccctggagg agcccgactt ctacaagacc	1560
aagatcaagc tgtgcatcct gctgcacgcc ttcaggatca gggcagtgc catcgaccgg	1620
gtgatgtcat accttaacgc cagctgataa taggctggag cctcgggtggc catgcttctt	1680
gccccttggg cctcccccca gccctcctc cccttcctgc acccgtagcc cccaaacacc	1740
attgtcacac tccagtgggc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 117
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_023

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 117	
ggggaaataa gagagaaaag aagagtaaga agaaatataa gagccaccat gtgccatcag	60
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gagctgaaga aagacgtgta cgtcgtcgaa ctggactggt acccgcacgc ccccggggag	180
atggtggtgc tgacctgcga cacgccggag gaggacggca tcacctggac cctggatcaa	240
agcagcgagg tgctgggcag cggcaagacc ctgaccatcc aagtgaagga attcggcgat	300
gccggccagt acacctgtca caaagggggc gaggtgctca gccacagcct gctgctgctg	360
cacaagaagg aggatggcat ctggagcacc gatatcctga aggaccagaa agagcccaag	420
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ccacaggggg tgacgtgcgg ggccgcaacc ctgagcgccg aaaggggtgcg gggggacaac	600
aaggagtacg aatactccgt ggagtgccag gaagattcgg cctgccccgc cgcggaggag	660
agcctcccca tcgaggtaat ggtggacgcc gtgcataagc tgaagtacga gaactacacc	720
agctcgttct tcatccgaga catcatcaaa cccgaccgc caaaaaatct gcagctcaag	780

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cccctgaaga actccaggca ggtggaggtg agctgggagt accccgacac ctggtccacc      840
ccgcacagct acttctccct gacattctgc gtgcaggtgc agggcaagag caagcgggag      900
aagaaggaca ggggtgttcac cgacaagacg agcgccaccg tgatctgccg aaagaacgcc      960
agcatctcgg tgcgcgcccc ggataggtac tattccagct cctggagcga gtgggcctcg     1020
gtaccctgca gcggcggcgg gggcggcggc agtaggaatc tgcccgtggc taccgccgac     1080
ccgggcatgt tcccctgcct ccaccacagc cagaacctgc tgagggccgt gagcaacatg     1140
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gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaacc ccaaacacc     1740
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa     1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag                                     1890

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<210> 118
<211> 1890
<212> DNA
<213> Artificial Sequence

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<220>
<223> hIL12AB_024

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<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' terminal guanosine cap

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<400> 118
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gagctgaaga	aggacgtgta	cgctcgtggag	ctcgactggt	accccgacgc	ccctggcgag	180
atggtggtgc	tgacctgcga	caccccagag	gaggatggca	tcacctggac	cctggatcag	240
tcctccgagg	tgctgggctc	cggcaagacg	ctgaccatcc	aagtgaagga	gttcggtgac	300
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gtgccctgca	gtgggggggg	tggaggcggg	agcaggaacc	tgcccgtagc	aacccccgac	1080
cccgggatgt	tcccctgtct	gcaccactcg	cagaacctgc	tgcgcgcggt	gagcaacatg	1140
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gaagacatca	ccaaggacaa	aaccagcacc	gtggaggcgt	gcctgcccgt	ggagctgacc	1260
aagaacgaga	gctgcctcaa	ctccagggag	accagcttta	tcaccaacgg	ctcgtgccta	1320
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aagatgtatc	aggtggagtt	caagaccatg	aatgccaaac	tcctgatgga	ccccaaaggg	1440
cagatcttcc	tggaccagaa	catgctcgcg	gtgatcgatg	agctgatgca	ggccctgaac	1500
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aaaatcaagc	tgtgcatcct	gctccacgcc	ttccgcatcc	gggccgtgac	catcgacagg	1620
gtgatgagct	acctgaacgc	cagctgataa	taggctggag	cctcggtggc	catgcttctt	1680
gccccttggg	cctcccccca	gccctcctc	cccttcctgc	acccgtaccc	cccaaacc	1740
attgtcacac	tccagtggtc	tttgaataaa	gtctgagtgg	gcggcaaaaa	aaaaaaaaaa	1800
aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	1860

aaaaaaaaaa aaaaaaaaaa aaaaatctag

1890

<210> 119

<211> 1890

<212> DNA

<213> Artificial Sequence

<220>

<223> hIL12AB_025

<220>

<221> misc_feature

<222> (1)..(1)

<223> 5' terminal guanosine cap

<400> 119

ggggaaataa gagagaaaag aagagtaaga agaaatataa gagccaccat gtgccatcag 60

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gagctaaaga aggacgtgta cgtggtggag ctggactggt acccggacgc acccggcgag 180

atggtcgttc tgacctgcga tacgccagag gaggacggca tcacctggac cctcgatcag 240

agcagcgagg tcctggggag cggaagacc ctgaccatcc aggtcaagga gttcggcgac 300

gccggccagt acacctgcca caaagggtggc gaggtcctga gccactcgct gctgctcctg 360

cataagaagg aggacggaat ctggagcaca gacatcctga aagaccagaa ggagcccaag 420

aacaagacct tcctgaggtg cgaggccaag aactacagcg ggcgcttcac gtgctggtgg 480

ctgaccacca tcagcacgga cctcaccttc tccgtgaaga gcagccgggg atccagcgat 540

ccccaaggcg tcacctgcgg cgcggccacc ctgagcgcgg agagggtcag gggcgataat 600

aaggagtatg agtacagcgt ggagtgccag gaggacagcg cctgcccggc cgccgaggag 660

tccctgccaa tcgaagtgat ggtcgacgcc gtgcacaagc tgaagtacga gaactacacc 720

agcagcttct tcatccggga tatcatcaag cccgatcccc cgaagaacct gcagctgaag 780

cccctcaaga acagccggca ggtggaggtg agttgggagt accccgacac ctggtcaacg 840

ccccacagct acttctccct gaccttctgt gtgcaggtgc agggaaagag caagagggag 900

aagaaagacc gggctcttcac cgacaagacc agcgccacgg tgatctgcag gaagaacgca 960

agcatctccg tgagggccca ggacaggtac tacagctcca gctggtccga atgggcccagc 1020

gtgccctgta gcggcgggcg gggcggtggc agccgcaacc tcccagtggc ccccccgac 1080

cccgcatgt tcccctgcct gcaccacagc cagaatctgc tgagggccgt gagtaacatg 1140

ctgcagaagg caaggcaaac cctcgaattc tatccctgca cctccgagga gatcgaccac 1200

gaggatatca ccaaggacaa gaccagcacc gtcgaggcct gtctccccct ggagctgacc	1260
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gcctccagga agacctcggt catgatggcg ctgtgcctct caagcatata cgaggatctg	1380
aagatgtacc aggtggagtt taagacgatg aacgccaagc tgctgatgga cccgaagagg	1440
cagatcttcc tggaccagaa catgctggcc gtgatagacg agctcatgca ggcctgaac	1500
ttcaactccg agaccgtgcc gcagaagtca tccctcgagg agcccgactt ctataagacc	1560
aagatcaagc tgtgcatcct gctccacgcc ttccggataa gggccgtgac gatcgacagg	1620
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gccccttggg cctcccccca gcccctcctc cccttcctgc acccgtagcc cccaaacacc	1740
attgtcacac tccagtgggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 120
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_026

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 120	
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cagctcgtga tcagctgggt ctccctgggtg tttctcgcca gcccctgggt ggccatctgg	120
gagctgaaga aggacgtgta cgtggtggag ctggactggt accctgacgc cccgggggag	180
atggtcgtgc tgacctgcga ccccccgaa gaggacggtg tcacctggac cctggaccag	240
tccagcgagg tgctgggcag cggcaagacc ctgactattc aagtcaagga gttcggagac	300
gccggccagt acacctgcca caaggggtgga gaggtgttat cacacagcct gctgctgctg	360
cacaagaagg aagacgggat ctggagcacc gacatcctga aggaccagaa ggagcccaaa	420
aacaagacct tcctgcggtg cgaggccaag aactattcgg gccgctttac gtgctggtgg	480
ctgaccacca tcagcactga tctcaccttc agcgtgaagt cctcccgggg gtcgtccgac	540

ccccaggggg	tgacctgcgg	ggccgccacc	ctgtccgccg	agagagtgag	gggcgataat	600
aaggagtacg	agtacagcgt	tgagtgccag	gaagatagcg	cctgtcccgc	cgccgaggag	660
agcctgccc	tcgaggtgat	ggtggacgcc	gtccacaagc	tgaagtatga	gaactacacc	720
tcaagcttct	tcatcaggga	catcatcaaa	cccgatccgc	ccaagaatct	gcagctgaag	780
cccctgaaaa	atagcaggca	ggtggagggtg	agctgggagt	accccgacac	ctggtccacc	840
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aagaaggacc	gggtgttcac	cgacaagacc	tccgccaccg	tgatctgtag	gaagaacgcg	960
tcgatctcgg	tcagggccca	ggacaggtat	tacagcagca	gctggagcga	gtgggagcgc	1020
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cccggaatgt	tcccctgcct	gcaccattcg	cagaacctcc	tgagggccgt	gagcaacatg	1140
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gaagacatca	ccaaggacaa	aaccagcacc	gtggaggcct	gcctgcccct	ggagctgacc	1260
aaaaacgaat	cctgcctcaa	cagccgggag	accagcttca	tcaccaacgg	cagctgcctg	1320
gccagccgaa	agacctcctt	catgatggcc	ctctgcctga	gcagcatcta	tgaggatctg	1380
aagatgtatc	aggtggagtt	caagaccatg	aatgccaaagc	tgctgatgga	ccccaaagag	1440
cagatattcc	tggaccagaa	tatgctggcc	gtgatcgacg	agctgatgca	ggcctgaac	1500
ttcaacagcg	agaccgtccc	ccagaagtcc	agcctggagg	agccggactt	ttacaaaacg	1560
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attgtcacac	tccagtggtc	tttgaataaa	gtctgagtgg	gcggcaaaaa	aaaaaaaaaa	1800
aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	1860
aaaaaaaaaa	aaaaaaaaaa	aaaaatctag				1890

<210> 121
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_027

<220>

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<221> misc_feature
<222> (1)..(1)
<223> 5' terminal guanosine cap

<400> 121
ggggaaataa gagagaaaag aagagtaaga agaaatataa gagccaccat gtgtcaccag      60
cagctggtga tcagctggtt ctccctggtg ttcctggcca gcccctggt ggccatctgg      120
gagctcaaga aggacgtcta cgtcgtggag ctggattggt accccgacgc tcccggggag      180
atggtggtgc tgacctgcga ccccccgag gaggacggca tcacctggac gctggaccag      240
agctcagagg tgctgggaag cggaagaca ctgaccatcc aggtgaagga gttcggggat      300
gccgggcagt atacctgcca caagggcggc gaagtgctga gccattccct gctgctgctg      360
cacaagaagg aggacggcat atggtccacc gacatcctga aggatcagaa ggagccgaag      420
aataaaacct tcctgaggtg cgaggccaag aattacagcg gccgattcac ctgctggtgg      480
ctgaccacca tcagcaccga cctgaccttc agtgtgaagt cctcacgggg cagctcagat      540
ccccagggcg tgacctgcgg ggccgcgaca ctcagcgccg agcgggtgag gggtgataac      600
aaggagtacg agtattctgt ggagtgccag gaagactccg cctgtcccgc cgccgaggag      660
tccctgcca tcgaggtgat ggtggacgcc gtgcataaac tgaagtacga gaactacacc      720
tccagcttct tcatccggga tataatcaag cccgaccctc cgaaaaacct gcagctgaag      780
ccccttaaaa acagccggca ggtggaggtg agctgggagt accccgacac ctggagcacc      840
ccccatagct atttcagcct gaccttctgc gtgcaggtgc aggggaagtc caagcgcgag      900
aaaaaggacc ggggtgttcac cgacaagacg agcgccaccg tgatctgccg gaagaacgcc      960
agtataagcg taagggccca ggataggtac tacagctcca gctggtcgga gtgggcctcc     1020
gtgccctgtt ccggcggcgg ggggggtggc agcaggaacc tcccgtggc cacgccggac     1080
cccgcatgt tcccgtcct gcaccactcc caaaacctcc tgcgggccgt cagcaacatg     1140
ctgcaaaagg cgcggcagac cctggagttt taccctgta cctccgaaga gatcgaccac     1200
gaggatatca ccaaggataa gacctccacc gtggaggcct gtctccccct ggagctgacc     1260
aagaacgaga gctgtcttaa cagcagagag acctcgttca taacgaacgg ctctgcctc     1320
gcttccagga agacgtcggt catgatggcg ctgtgcctgt ccagcatcta cgaggacctg     1380
aagatgtatc aggtcgagtt caaaacctg aacgccaagc tgctgatgga cccaagagg     1440
cagatcttcc tggaccagaa catgctcgcc gtgatcgacg agctgatgca ggccctgaac     1500
ttcaacagcg aaaccgtgcc ccagaagtca agcctggagg agccggactt ctataagacc     1560
aagatcaagc tgtgtatcct gctacacgct ttctgtatcc gggccgtgac catcgacagg     1620

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gttatgtcgt acttgaacgc cagctgataa taggctggag cctcgggtggc catgcttctt	1680
gcccttggg cctccccca gccctcctc cccttcctgc acccgtaccc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 122
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_028

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 122	
ggggaaataa gagagaaaag aagagtaaga agaaatataa gagccaccat gtgccaccaa	60
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gagctgaaga aggacgtgta cgtgggtggag ctggactggg accccgacgc ccccggcgag	180
atgggtgggtcc tgacctgcga cagccggaa gaggacggca tcacctggac cctggatcag	240
tccagcgagg tgctgggctc cggcaagacc ctgaccattc aggtgaagga gttcggcgac	300
gccggtcagt acacctgcca caagggcggc gaggtgctga gccacagcct actgctcctg	360
cacaaaaagg aggatggaat ctggtccacc gacatcctca aggaccagaa ggagccgaag	420
aacaagacgt tcctccgggt cgaggccaag aactacagcg gcaggtttac ctgctgggtg	480
ctgaccacca tcagcaccga cctgacattt tccgtgaaga gcagccgcgg cagcagcgat	540
ccccagggcg tgacctgcgg ggcggccacc ctgtccgccg agcgtgtgag gggcgacaac	600
aaggagtacg agtacagcgt ggaatgccag gaggacagcg cctgtcccgc cgccgaggag	660
agcctgccaa tcgaggatcat ggtggacgcc gtgcacaagc tgaagtacga gaactacag	720
agcagcttct tcatcaggga catcatcaaa ccggacccgc ccaagaacct gcagctgaaa	780
cccttgaaaa acagcaggca ggtggaagtg tcttgggagt accccgacac ctggtccacc	840
ccccacagct actttagcct gaccttctgt gtgcagggtc agggcaagtc caagagggag	900
aagaaggaca ggggtgttcac cgacaaaacc agcgccaccg tgatctgcag gaagaacgcc	960

tccatcagcg tgcggggccca ggacaggtat tacagctcgt cgtggagcga gtgggccagc	1020
gtgccctgct ccgggggagc cggcggcgga agccggaatc tgcccgtggc ccccccgat	1080
cccggcatgt tcccgtgtct gcaccacagc cagaacctgc tgcggggccgt gagcaacatg	1140
ctgcagaagg cccgccaaac cctggagttc tacccttgta caagcgagga gatcgaccat	1200
gaggacatta ccaaggacaa gaccagcacc gtggaggcct gcctgcccct cgagctcaca	1260
aagaacgaat cctgcctgaa tagccgcgag accagcttta tcacgaacgg gtcctgcctc	1320
gccagccgga agacaagctt catgatggcc ctgtgcctga gcagcatcta cgaggacctg	1380
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cagatcttcc tggaccagaa catgctggcc gtcacgcagc agtcatgca ggccctgaac	1500
ttcaacagcg agaccgtgcc ccagaagagc agcctggagg agcccgactt ctacaagacg	1560
aagatcaagc tctgcatcct gctgcacgct ttccgcatcc gcgcggtgac catcgaccgg	1620
gtgatgagct acctcaacgc cagttgataa taggctggag cctcgggtggc catgcttctt	1680
gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaacc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 123
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_029

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 123	
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gagctgaaga aggacgtgta cgtggtggag ctggactggt accctgacgc ccccggcgaa	180
atggtggtgc tgacgtgcga ccccccgag gaggatggca tcacctggac cctggaccaa	240
agcagcgagg tcctcggaag cggcaagacc ctactatcc aagtgaagga gttcggggat	300

gcggggccagt acacctgcca caagggcggc gaggtgctgt ctcatagcct gctgctcctg	360
cataagaagg aagacggcat ctggagcacc gacatactga aggatcagaa ggagcccaag	420
aacaagacct tcctgaggtg cgaggccaag aactactccg ggcgcttcac ctgttggtgg	480
ctgaccacca tctccaccga cctgaccttc agcgtgaaga gcagcagggg gagcagcgac	540
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aaggagtacg agtactcggc cgaatgccag gaggactccg cctgccccgc cgccgaggag	660
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aagaaggata ggggtgttcac cgacaagacc tccgccacgg tgatctgtcg gaaaaacgcc	960
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cccgggatgt tcccatgcct gcaccacagc caaaacctgc tgagggccgt ctccaatatg	1140
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gccccttggg cctcccccca gccctcctc cccttcctgc acccgtagcc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 124
<211> 1890

<212> DNA
<213> Artificial Sequence

<220>
<223> hIL12AB_030

<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' terminal guanosine cap

<400> 124
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gaactgaaaa aggacgtgta cgtggtcgag ctggattggt accccgacgc ccccggcgaa 180
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aacaagacct tcctgcggtg tgaggcgaag aactacagcg gccgtttcac ctgctggtgg 480
ctgacgacaa tcagcaccga cttgacgttc tccgtgaagt cctccagagg cagctccgac 540
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ccgggcatgt tcccgtgcct gcaccactca cagaatctgc tgagggccgt gagcaatatg 1140
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gaagacatca ccaaggacaa gaccagcaca gtggaggcct gcctgcccct ggaactgacc 1260
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cagatcttcc tggaccagaa tatgctggcc gtgatcgatg agttaatgca ggcgctgaac	1500
ttcaacagcg agacggtgcc ccaaaagtcc tcgctggagg agcccgactt ctacaagacc	1560
aagatcaagc tgtgcatcct cctgcacgcc ttccgaatcc gggccgtaac catcgacagg	1620
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gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaacc cccaaacacc	1740
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 125
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_031

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 125	
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gagctgaaga aagacgtgta cgtggtggag ctggactggt atcccgaacg cccggggggag	180
atggtggtgc tgacctgcga cccccggaa gaggacggca tcacctggac gctcgaccag	240
tcgtccgaag tgctgggggtc gggcaagacc ctcaccatcc aggtgaagga gttcggagac	300
gccggccagt acacctgtca taaggggggg gaggtgctga gccacagcct cctgctcctg	360
cacaaaaagg aggacggcat ctggagcacc gatatcctca aggaccagaa ggagcccaag	420
aacaagacgt tcctgaggtg tgaggccaag aactacagcg ggcgggttcac gtgttggtgg	480
ctcaccacca tctccaccga cctcaccttc tccgtgaagt caagcagggg cagctccgac	540
ccccaaggcg tcacctgcgg cgccgccacc ctgagcgccg agagggtcag gggggataac	600
aaggaatacg agtacagtgt ggagtgccaa gaggatagcg cctgtcccgc cgccgaagag	660
agcctgcca tcgaagtgat ggtggacgcc gtgcacaagc tgaagtacga gaactacacc	720

tccagcttct tcatacagga tatcatcaag cccgatcccc ccaagaacct gcagctgaag	780
cccctgaaga acagcaggca ggtggagggtg agctgggagt atcccgacac gtggagcacc	840
ccgcacagct acttctcgct gaccttctgc gtgcagggtgc aagggaagtc caagaggag	900
aagaaggata ggggtgttcac cgacaaaacg agcgccaccg tgatctgccg gaagaatgcc	960
agcatctctg tgagggccca ggacaggtag tattccagct cctggtcgga gtgggccagc	1020
gtgccctgta gcggcggggg cgggggcggc agcaggaacc tcccggttgc ccccccgac	1080
cccggcatgt ttccgtgcct gcaccactcg caaaacctgc tgcgcgcggt ctccaacatg	1140
ctgcaaaaag cgcgccagac gctggagttc taccctcgca ccagcgagga gatcgatcat	1200
gaagatatca ccaaagacaa gacctcgacc gtggaggcct gcctgcccct ggagctcacc	1260
aagaacgaaa gctgcctgaa cagcaggag acaagcttca tcaccaacgg cagctgcctg	1320
gcctcccga agaccagctt catgatggcc ctgtgcctgt ccagcatcta cgaggatctg	1380
aagatgtacc aagtggagtt taagaccatg aacgccaagc tgttaatgga cccaaaagg	1440
cagatcttcc tggatcagaa catgctggcc gtcatcgacg agctgatgca agccctgaac	1500
ttcaacagcg agacggtgcc ccagaagagc agcctcgagg agcccgactt ctataagacc	1560
aagataaagc tgtgcattct gctgcacgcc ttcagaatca gggccgtgac catcgatagg	1620
gtgatgagct acctgaacgc cagctgataa taggctggag cctcgggtggc catgcttctt	1680
gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaccc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 126
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_032

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 126	
ggggaaataa gagagaaaag aagagtaaga agaaatataa gagccaccat gtgtcaccag	60

cagctggtga	tttcttggtt	cagtctggtg	tttcttgcca	gccccctggt	ggccatctgg	120
gagctgaaga	aagacgtata	cgctctggag	ctggactggt	atccccgacgc	tcccggcgag	180
atggtggtcc	tcacctgcga	caccccagag	gaggacggca	tcacctggac	cctggaccag	240
agctccgagg	tcctggggcag	cggtaaagacc	ctcaccatcc	aggtgaagga	gtttggtgat	300
gccgggcagt	atacctgcca	caagggcggc	gagggtgctgt	cccacagcct	cctgttactg	360
cataagaagg	aggatggcat	ctggagcacc	gacatcctca	aggaccagaa	agagcccaag	420
aacaagacct	ttctgcggtg	cgaggcgaaa	aattactccg	gccggttcac	ctgctggtgg	480
ctgaccacca	tcagcacgga	cctgacgttc	tccgtgaagt	cgagcagggg	gagctccgat	540
ccccagggcg	tgacctgcgg	cgcgggcacc	ctgagcgccg	agcgcgcccg	cggggacaat	600
aaggaatacg	aatatagcgt	ggagtgccag	gaggacagcg	cctgccccgc	ggccgaggag	660
agcctcccga	tcgaggtgat	ggtggatgcc	gtccacaagc	tcaaatacga	aaactacacc	720
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ccccactcct	acttcagcct	gaccttctgc	gtccaggtgc	agggaaagtc	caaacgggag	900
aagaaggata	gggtctttac	cgataagacg	tcggccaccg	tcatctgcag	gaagaacgcc	960
agcataagcg	tgcgggcgca	ggatcggtac	tacagctcga	gctggtccga	atgggcctcc	1020
gtgccctgta	gcggaggggg	tggcgggggc	agcaggaacc	tgcccgtggc	caccccgac	1080
ccgggcatgt	ttccctgcct	gcatcacagt	cagaacctgc	tgagggccgt	gagcaacatg	1140
ctccagaagg	cccgccagac	cctggagttt	taccctgca	ccagcgaaga	gatcgatcac	1200
gaagacatca	ccaaagacaa	gacctccacc	gtggaggcct	gtctgcccct	ggagctgacc	1260
aagaacgaga	gctgtctgaa	cagcagggag	acctccttca	tcaccaacgg	ctcctgcctg	1320
gcatcccgga	agaccagctt	catgatggcc	ctgtgtctga	gctctatcta	cgaggacctg	1380
aagatgtacc	aggtcgagtt	caagaccatg	aacgccaagc	tgctgatgga	ccccaaagcga	1440
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ttcaatagcg	agaccgtgcc	ccagaaaagc	agcctggagg	agcccgactt	ctacaagacc	1560
aagatcaaac	tgtgcatact	gctgcacgcg	ttcaggatcc	gggccgtcac	catcgaccgg	1620
gtgatgtcct	atctgaatgc	cagctgataa	taggctggag	cctcggtggc	catgcttctt	1680
gccccttggg	cctcccccca	gcccctctc	cccttctgc	acccgtaccc	cccaaacc	1740
attgtcacac	tccagtggtc	tttgaataaa	gtctgagtgg	gcggcaaaaa	aaaaaaaaaa	1800

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 127
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_033

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 127	
ggggaaataa gagagaaaag aagagtaaga agaaatataa gagccaccat gtgccaccag	60
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gagctgaaaa aagacgtgta cgtggtggag ctggactggt acccggaacg cccggcgag	180
atggtggtgc tgacgtgcga cccccggaa gaggacggca tcacctggac cctggaccag	240
tcatccgagg tcctgggcag cggcaagacg ctcaccatcc aggtgaagga gttcggcgac	300
gccggccagt acacatgcca taaggcgagg gaggtgctga gccacagcct gctcctcctg	360
cacaagaagg aggatggcat ctggtctaca gacatcctga aggaccagaa agagcccaag	420
aacaagacct tcctccggtg cgaggccaag aactactccg ggcggtttac ttgttggtgg	480
ctgaccacca tcagcaccga cctcaccttc agcgtgaaga gctcccgagg gagctccgac	540
ccccaggggg tcacctgcgg cgccgccacc ctgagcgccg agcgggtgag gggcgacaac	600
aaggagtatg aatacagcgt ggaatgcaa gaggacagcg cctgtcccgc ggccgaggaa	660
agcctgcca tcgaggtgat ggtggacgcc gtccacaaac tcaagtacga gaactacacc	720
agcagtttct tcattcgca catcatcaag ccggaccccc caaaaaacct gcagctcaaa	780
cccctgaaga acagcaggca ggtggaggtc agctgggagt acccggaac ctggagcacc	840
ccccatagct acttcagcct gaccttctgc gtgcaggtgc agggcaagag caaacgcgag	900
aagaaggacc ggggtgtttac cgacaagacc agcgccacgg tgatctgccg aaagaatgca	960
agcatctccg tgagggcgca ggaccgtac tactctagca gctggagcga gtgggccagc	1020
gtgccctgca gcggtggcgg cgaggcggc agccgtaacc tccccgtggc ccccccgac	1080
cccgcatgt tcccgtgtct gcaccactcc cagaacctgc tgagggccgt cagcaatatg	1140

ctgcagaagg cccggcagac gctggagttc tacccttgca cctccgagga gatcgaccat	1200
gaggacatta ccaaggacaa gacgagcact gtggaggcct gcctgcccct ggagctcacc	1260
aaaaacgaga gctgcctgaa tagcagggag acgtccttca tcaccaacgg cagctgtctg	1320
gccagcagga agaccagctt catgatggcc ctgtgcctct cctccatata tgaggatctg	1380
aagatgtacc aggtggagtt caagaccatg aacgccaagc tgctgatgga tccaagagg	1440
cagatcttcc tggaccagaa tatgctggcc gtgattgacg agctgatgca ggcctgaac	1500
tttaatagcg agaccgtccc ccagaagagc agcctggagg agcccgactt ctataagacc	1560
aagatcaagc tgtgcatact gctgcacgcg tttaggataa gggccgtcac catcgacagg	1620
gtgatgagct acctgaatgc cagctgataa taggctggag cctcgggtggc catgcttctt	1680
gccccttggg cctcccccca gccctcctc cccttcctgc acccgtagcc cccaaacacc	1740
attgtcacac tccagtgggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 128
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_034

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 128	
ggggaaataa gagagaaaag aagagtaaga agaaatataa gagccaccat gtgccaccaa	60
cagctggtga tctcctggtt cagcctggtg ttctctgccca gcccctggt ggccatctgg	120
gagctgaaga aagacgtgta cgtggtggag ctggactggt atcccgacgc ccccggcgag	180
atggtcgtgc tgacctgcga cccccggag gaggacggca tcacctggac cctggatcag	240
tcctccgagg tgctgggcag cggaagacc ctgaccatcc aggtgaaaga gttcggagat	300
gccggccagt atacctgtca caaggggggt gaggtgctga gccatagcct cttgcttctg	360
cacaagaagg aggacggcat ctggtccacc gacatcctca aggaccaaaa ggagccgaag	420
aataaaacgt tcctgaggtg cgaagccaag aactattccg gacggttcac ctgctggtgg	480

ctgaccacca tcagcaccga cctcaccttc tccgtaaagt caagcagggg cagctccgac	540
ccccagggcg tgacctgcgg agccgccacc ctgagcgcag agaggggtgag gggcgacaac	600
aaggagtacg aatactccgt cgagtgccag gaggacagcg cctgccccgc cgccgaggaa	660
agtctgcca tcgaggtgat ggtggacgcc gtgcacaagc tcaaatacga gaactacacc	720
agcagcttct tcatccggga tatcatcaag cccgaccctc caaagaatct gcagctgaaa	780
ccccttaaga acagcaggca ggtggaggtc agctgggagt accccgacac ctggagcacg	840
cccactcct actttagcct gaccttttgc gtgcaggtgc aggggaaaag caagcgggag	900
aagaaggaca ggggtgttcac cgataagacc tccgctaccg tgatctgcag gaagaacgcc	960
tcaatcagcg tgagggccca ggatcggtag tactccagct cctggagcga gtgggccagc	1020
gtgccctgct ctggcggtgg cggcgggggc agccggaacc tgccggtggc cactcccgac	1080
ccgggcatgt tcccgtgcct ccaccattcc cagaacctgc tgcgggccgt gtccaatatg	1140
ctccagaagg caaggcagac cctggagttc tacccttgca ccagcgagga gatcgatcac	1200
gaggacatca ccaaagacaa aaccagcacg gtcgaggcct gcctgcccct ggaactcacc	1260
aagaacgaaa gctgtctcaa cagccgcgag accagcttca taaccaacgg ttctgtctg	1320
gcctcccgca agaccagctt tatgatggcc ctctgtctga gctccatcta tgaagacctg	1380
aaaatgtacc aggtggagtt caaaaccatg aacgccaagc ttctgatgga cccaagagg	1440
cagatcttcc tggatcagaa catgctggcc gtgatcgacg agctgatgca ggcctgaac	1500
tttaactccg agaccgtgcc ccagaaaagc agcctggaag agcccgatth ctacaaaacg	1560
aagatcaagc tgtgcatcct gctgcacgcc ttccggatcc gtgcggtgac catcgatagg	1620
gtgatgagct acctgaacgc cagctgataa taggctggag cctcgggtggc catgcttctt	1680
gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaacc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 129
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_035

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<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' terminal guanosine cap

<400> 129
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cagctggtaa tcagctgggt cagcctgggt ttctctcgct cgcccctggg ggccatctgg      120
gagttaaaga aggacgtgta cgtgggtggag ctggattggg accccgacgc cccgggcgag      180
atggtcgtgc tcacctgcga tcccccgag gaggacggga tcacctggac cctggaccaa      240
tccagcgagg tgctgggcag cggcaagacc ctgaccatac aggtgaagga atttggggac      300
gccgggcagt acacctgcca caagggcggg gaagtgctgt ccactccct cctgctgctg      360
cataagaagg aggacggcat ctggagcacc gacatcctga aggacaaaaa ggagcccaag      420
aacaagacct tcctgaggtg cgaggccaaa aactattccg gccgctttac ctgttggtgg      480
ctgaccacca tctccaccga tctgaccttc agcgtgaagt cgtctagggg ctctccgac      540
ccccagggcg taacctgcgg cgccgcgacc ctgagcgccg agagggtgcg gggcgataac      600
aaagagtacg agtactcggg ggagtgccag gaggacagcg cctgtccggc ggccgaggag      660
agcctgcca tcgaggtgat ggtggacgcc gtccacaagc tgaagtacga gaactacacc      720
agttcgttct tcatcaggga catcatcaag ccggaccccc ccaagaacct ccagctgaag      780
cccctgaaga acagcaggca ggtggaagtg tcctgggagt atcccgacac ctggagcacc      840
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aagaaggacc ggggtgttcac cgataagacg agcgccaccg ttatctgcag gaagaacgcc      960
tccataagcg tgagggcgca ggaccgttac tacagcagca gctggagtga gtgggcaagc     1020
gtgccctgta gcggcggggg cgggggcggg tcccgaacc tcccgtcgc ccccccgac     1080
ccaggcatgt ttccgtgcct gcaccacagc cagaacctgc tgcgggccgt tagcaacatg     1140
ctgcagaagg ccaggcagac cctcgagttc tatccctgca catctgagga gatcgaccac     1200
gaagacatca ctaaggataa gacctccacc gtggaggcct gtctgcccct cgagctgacc     1260
aagaatgaat cctgcctgaa cagccgagag accagcttta tcaccaacgg ctctgcctg      1320
gccagcagga agacctcctt catgatggcc ctgtgcctct ccagcatcta cgaggatctg      1380
aagatgtacc aggtagagtt caagacgatg aacgccaagc tcctgatgga cccaagagg      1440
cagatattcc tggaccagaa catgctggcg gtgatcgacg agctgatgca ggcctgaat      1500
ttcaacagcg agacggtgcc acagaagtcc agcctggagg agccagactt ctacaagacc      1560

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aagatcaaac tgtgcatcct cctgcacgcg ttcaggatcc gcgccgtcac catagacagg	1620
gtgatgagtt atctgaacgc cagctgataa taggctggag cctcgggtggc catgcttctt	1680
gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaccc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 130
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_036

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 130	
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cagctggtaa tcagctgggt tagcctgggtg ttcctggcca gccactgggt ggccatctgg	120
gagctgaaga aggacgtgta cgtgggtggaa ctggactgggt accccgacgc ccctggcgag	180
atggtggtac tgacctgtga cccccggag gaagacggtg tcacctggac cctggatcag	240
agctccgagg tgctgggctc cggcaagaca ctgaccatcc aagttaagga atttggggac	300
gccggccagt acacctgcca caaggggggc gaggtgctgt cccactccct gctgcttctg	360
cataagaagg aggatggcat ctggtccacc gacatactga aggaccagaa ggagcccaag	420
aataagacct tcctgagatg cgaggccaag aactactcgg gaaggttcac ctgctgggtg	480
ctgaccacca tcagcaccga cctgaccttc tccgtgaaga gctcccgggg cagctccgac	540
ccccagggcg taacctgtgg ggccgctacc ctgtccgccg agagggtccg gggcgacaac	600
aaggaatacg agtacagcgt ggagtgccag gaggactccg cctgccccgc cgccgaggag	660
tcgctgcca tagaggatgat ggtggacgcc gtgcacaagc tcaagtacga gaattacacc	720
agcagcttct ttatcaggga cataattaag ccggaccccc caaagaatct gcagctgaag	780
cccctgaaga atagccggca ggtggaagtg tcctgggagt accccgacac ctggagcacc	840
cccactcct atttctcact gacattctgc gtgcagggtgc aagggaaaag caagaggag	900

aagaaggata ggggtgttcac cgacaagaca agcgccaccg tgatctgccg aaaaaatgcc	960
agcatcagcg tgagggccca ggatcgggat tacagcagct cctggagcga gtgggccagc	1020
gtgccctgtt ccggcggggg agggggcggc tcccgaacc tgccggtggc ccccccgac	1080
cctggcatgt tcccctgcct gcatcacagc cagaacctgc tccgggccgt gtcgaacatg	1140
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gaagacataa ccaaggacaa gaccagcacg gtggaggcct gcctgcccct ggagcttacc	1260
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cagatcttcc tggaccagaa catgctagcc gtgatcgacg agctgatgca ggccctcaac	1500
ttcaactcgg agacggtgcc ccagaagtcc agcctcgagg agcccgactt ctacaagacc	1560
aagatcaagc tgtgcatact gctgcatgcc ttcaggataa gggcggtgac tatcgacagg	1620
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gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaacc cccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 131
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_037

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 131	
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caactggtga tcagctgggt ctccctgggt ttcttgcca gcccctgggt ggccatctgg	120
gagctcaaaa aagacgtgta cgtggtggag ctcgattggt acccagacgc gccgggggaa	180
atggtggtgc tgacctgcga cccccagag gaggatggca tcacgtggac gctggatcag	240

tccagcgagg	tgctgggggag	cggcaagacg	ctcaccatcc	aggtgaagga	atttggcgac	300
gcggggccagt	atacctgtca	caagggcggc	gaggtgctga	gccactccct	gctgctgctg	360
cacaagaagg	aggatgggat	ctggtcaacc	gatatcctga	aagaccagaa	ggagcccaag	420
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aaggagtacg	agtacagcgt	ggaatgtcag	gaggacagcg	cctgtcccgc	cgccgaggag	660
tcgctgcca	tcgaggtgat	ggtcgacgcg	gtgcacaagc	tcaaatacga	gaattacacc	720
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cccgggatgt	tcccggtgtct	gcatactctc	cagaacctgc	tgcgggccgt	gagcaatatg	1140
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gcctccagga	agacctcggt	tatgatggcc	ctctgcctgt	ccagcatcta	cgaggacctg	1380
aagatgtacc	aggtggagtt	caagaccatg	aacgcgaagt	tgctcatgga	ccccaaagag	1440
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aagatcaagc	tgtgcatcct	gctgcacgcc	ttccggatcc	gggccgtgac	catcgacagg	1620
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gccccttggg	cctcccccca	gccctcctc	cccttcctgc	acccgtaccc	cccaaacacc	1740
attgtcacac	tccagtggtc	tttgaataaa	gtctgagtgg	gcggcaaaaa	aaaaaaaaaa	1800
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aaaaaaaaaa	aaaaaaaaaa	aaaaatctag				1890

<210> 132
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_038

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 132
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 gccggccagt acacctgcca caagggcggg gaggtgctct cccatagcct gctcctcctg 360
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 ctcaccacca tctctaccga cctgacgttc tccgtcaagt caagcagggg gagctcggac 540
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 cccctcaaga actcccgcca ggtggaggtg tcctgggagt accccgacac ctggtccacc 840
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 aagaaagaca ggggtgttcac cgacaagacg agcgccaccg tgatctgcag gaaaaacgcc 960
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gccccttggg cctcccccca gccctcctc cccttcctgc acccgtaacc ccaaacacc	1740
attgtcacac tccagtggtc tttgaataaa gtctgagtgg gcggcaaaaa aaaaaaaaaa	1800
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1860
aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 133
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_039

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 133	
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gagctgaaga aagacgtgta cgtggtggag ctggactggt acccggacgc tcccggggag	180
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gccggccaat atacctgcca caaggggggg gaggtcctgt cgcattccct gctgctgctt	360
cacaaaaagg aggatggcat ctggagcacc gacatcctga aggaccagaa agaaccaag	420
aacaagacgt tcctgcgctg cgaggccaag aactacagcg gccggttcac ctgttggtgg	480
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ccccagggag tgacctgcgg cgccgccacc ctgagcgccg aaagggtgag gggcgacaat	600
aaagagtacg agtattccgt ggagtgccag gaggacagcg cctgtcccgc cgccgaggag	660

tccctgccta tgcaggtgat ggtcgacgcg gtgcacaagc tcaagtacga aaactacacc	720
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cagatctttc tggaccagaa catgctggcc gtgatcgatg aactcatgca ggcctgaat	1500
ttcaattccg agaccgtgcc ccagaagagc tccctggagg aaccgactt ctacaaaaca	1560
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aaaaaaaaaa aaaaaaaaaa aaaaatctag	1890

<210> 134
 <211> 1890
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_040

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> 5' terminal guanosine cap

<400> 134

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gagctgaaaa aggacgtgta cgtggtggag ctggactggt atcccgcgc cccgggag	180
atggtggtgc tgacctgcga ccccccgag gaggacggca ttacctggac actggaccag	240
agcagcgagg tcctgggcag cgggaagacc ctgacaattc aggtgaagga gttcggcgac	300
gccggacagt acacgtgccca caaggggggg gaggtgctgt cccacagcct cctcctgctg	360
cacaagaagg aggatggcat ctggagcacc gacatcctga aggatcagaa ggagcccaag	420
aacaagacct ttctgagatg cgaggccaag aattacagcg gccgtttcac ctgctggtgg	480
ctcaccacca tcagcaccga cctgaccttc agcgtgaaat cctccagggg ctccctccgac	540
ccgcagggag tgacctgcgg cgccgccaca ctgagcgccg agcgggtcag aggggacaac	600
aaggagtacg agtacagcgt tgagtgccag gaggacagcg cctgtcccgc ggccgaggaa	660
tccctgcca tcgaggtgat ggtggacgca gtgcacaagc tgaagtacga gaactatacc	720
tcgagcttct tcatccggga tatcattaag cccgatcccc cgaagaacct gcagctcaaa	780
cccctgaaga acagcaggca ggtggaggtc tcctgggagt accccgacac atggtccacc	840
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ttcaacagcg agaccgtgcc ccagaagtcc tccctggagg agcccgactt ctacaagacc	1560
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gcccttggg cctcccccca gccctcctc cccttctgc acccgtaacc cccaaacacc	1740

attgtcacac tccagtgggc tttgaataaa gtctgagtg ggcggcaaaaa aaaaaaaaaa 1800
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1860
 aaaaaaaaaa aaaaaaaaaa aaaaatctag 1890

<210> 135
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 5'UTR-001 (Upstream UTR)

<400> 135
 gggaaataag agagaaaaga agagtaagaa gaaatataag agccacc 47

<210> 136
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 5'UTR-002 (Upstream UTR)

<400> 136
 gggagatcag agagaaaaga agagtaagaa gaaatataag agccacc 47

<210> 137
 <211> 145
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 5'UTR-003 (Upstream UTR)

<400> 137
 ggaataaaaag tctcaacaca acatatacaa aacaaacgaa tctcaagcaa tcaagcattc 60
 tactttctatt gcagcaattt aaatcatttc ttttaaagca aaagcaattt tctgaaaatt 120
 ttcaccattt acgaacgata gcaac 145

<210> 138
 <211> 42
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> 5'UTR-004 (Upstream UTR)

<400> 138
 gggagacaag cuuggcauuc cgguacuguu gguaaagcca cc 42

<210> 139
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-005 (Upstream UTR)

 <400> 139
 gggagatcag agagaaaaga agagtaagaa gaaatataag agccacc 47

 <210> 140
 <211> 145
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-006 (Upstream UTR)

 <400> 140
 ggaataaaaag tctcaacaca acatatacaa aacaaacgaa tctcaagcaa tcaagcattc 60
 tactttctatt gcagcaatth aaatcatttc ttttaaagca aaagcaatth tctgaaaatt 120
 ttcaccattth acgaacgata gcaac 145

 <210> 141
 <211> 42
 <212> RNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-007 (Upstream UTR)

 <400> 141
 gggagacaag cuuggcauuc cgguacuguu gguaaagcca cc 42

 <210> 142
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-008 (Upstream UTR)

 <400> 142
 gggaattaac agagaaaaga agagtaagaa gaaatataag agccacc 47

 <210> 143
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 5'UTR-009 (Upstream UTR)

 <400> 143
 gggaaattag acagaaaaga agagtaagaa gaaatataag agccacc 47

 <210> 144
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-010 (Upstream UTR)

 <400> 144
 gggaaataag agagtaaaga acagtaagaa gaaatataag agccacc 47

 <210> 145
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-011 (Upstream UTR)

 <400> 145
 gggaaaaaag agagaaaaga agactaagaa gaaatataag agccacc 47

 <210> 146
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-012 (Upstream UTR)

 <400> 146
 gggaaataag agagaaaaga agagtaagaa gatataataag agccacc 47

 <210> 147
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-013 (Upstream UTR)

 <400> 147
 gggaaataag agacaaaaca agagtaagaa gaaatataag agccacc 47

 <210> 148
 <211> 47

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-014 (Upstream UTR)

 <400> 148
 gggaaattag agagtaaaga acagtaagta gaattaaaag agccacc 47

 <210> 149
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-015 (Upstream UTR)

 <400> 149
 gggaaataag agagaataga agagtaagaa gaaatataag agccacc 47

 <210> 150
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-016 (Upstream UTR)

 <400> 150
 gggaaataag agagaaaaga agagtaagaa gaaaattaag agccacc 47

 <210> 151
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-017 (Upstream UTR)

 <400> 151
 gggaaataag agagaaaaga agagtaagaa gaaatttaag agccacc 47

 <210> 152
 <211> 92
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 5'UTR-018 (Upstream UTR)

 <400> 152
 tcaagctttt ggaccctcgt acagaagcta atacgactca ctataggga ataagagaga 60
 aaagaagagt aagaagaaat ataagagcca cc 92

<210> 153
 <211> 142
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 142-3p 5'UTR-001 (Upstream UTR including miR142-3p)

<400> 153
 tgataatagt ccataaagta ggaaacacta cagctggagc ctcggtggcc atgcttcttg 60
 ccccttgggc ctccccccag cccctcctcc ccttcctgca cccgtacccc cgtggtcttt 120
 gaataaagtc tgagtgggcg gc 142

<210> 154
 <211> 142
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 142-3p 5'UTR-002 (Upstream UTR including miR142-3p)

<400> 154
 tgataatagg ctggagcctc ggtggctcca taaagtagga aacactacac atgcttcttg 60
 ccccttgggc ctccccccag cccctcctcc ccttcctgca cccgtacccc cgtggtcttt 120
 gaataaagtc tgagtgggcg gc 142

<210> 155
 <211> 142
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 142-3p 5'UTR-003 (Upstream UTR including miR142-3p)

<400> 155
 tgataatagg ctggagcctc ggtggccatg cttcttgccc cttccataaa gtaggaaaca 60
 ctacatgggc ctccccccag cccctcctcc ccttcctgca cccgtacccc cgtggtcttt 120
 gaataaagtc tgagtgggcg gc 142

<210> 156
 <211> 142
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 142-3p 5'UTR-004 (Upstream UTR including miR142-3p)

<400> 156
 tgataatagg ctggagcctc ggtggccatg cttcttgccc cttgggcctc cccccagtcc 60
 ataaagtagg aaacactaca cccctcctcc ccttcctgca cccgtacccc cgtgggtcttt 120
 gaataaagtc tgagtgggcg gc 142

<210> 157
 <211> 142
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 142-3p 5'UTR-005 (Upstream UTR including miR142-3p)

<400> 157
 tgataatagg ctggagcctc ggtggccatg cttcttgccc cttgggcctc cccccagccc 60
 ctcctcccct tctccataaa gtaggaaaca ctacactgca cccgtacccc cgtgggtcttt 120
 gaataaagtc tgagtgggcg gc 142

<210> 158
 <211> 142
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 142-3p 5'UTR-006 (Upstream UTR including miR142-3p)

<400> 158
 tgataatagg ctggagcctc ggtggccatg cttcttgccc cttgggcctc cccccagccc 60
 ctcctcccct tcttgcaccc gtaccccctc cataaagtag gaaacactac agtgggtcttt 120
 gaataaagtc tgagtgggcg gc 142

<210> 159
 <211> 142
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 142-3p 5'UTR-007 (Upstream UTR including miR142-3p)

<400> 159
 tgataatagg ctggagcctc ggtggccatg cttcttgccc cttgggcctc cccccagccc 60
 ctcctcccct tcttgcaccc gtaccccctg ggtctttgaa taaagttcca taaagtagga 120
 aacactacac tgagtgggcg gc 142

<210> 160
 <211> 371

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> 3'UTR-001 (Creatine Kinase UTR)

 <400> 160
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 gagtcttgct ccctcactcc tcgccccgcc ccctgtccca gagtcccacc tgggggctct 120
 ctccaccctt ctcagagttc cagtttcaac cagagttcca accaatgggc tccatcctct 180
 ggattctggc caatgaaata tctccctggc agggctcctt tcttttccca gagctccacc 240
 ccaaccagga gctctagtta atggagagct ccagcacac tcggagcttg tgctttgtct 300
 ccacgcaaag cgataaataa aagcattggg ggcctttggg ctttgaataa agcctgagta 360
 ggaagtctag a 371

<210> 161
 <211> 568
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> 3'UTR-002 (Myoglobin UTR)

 <400> 161
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 atctcgtgta gccatataga gtttgcttct gagtgtctgc tttgtttagt agagggtgggc 120
 aggaggagct gaggggctgg ggctgggggtg ttgaagttgg ctttgcatgc ccagcgatgc 180
 gcctccctgt gggatgtcat caccctggga accgggagtg gcccttggct cactgtgttc 240
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 acctccaaac tggctgtaac cccaaatcca agccattaac tacacctgac agtagcaatt 360
 gtctgattaa tcaactggccc cttgaagaca gcagaatgtc cttttgcaat gaggaggaga 420
 tctgggctgg gcggggccagc tggggaagca tttgactatc tggaacttgt gtgtgcctcc 480
 tcaggatatg cagtgactca cctggtttta ataaaacaac ctgcaacatc tcatggtctt 540
 tgaataaagc ctgagtagga agtctaga 568

<210> 162
 <211> 289
 <212> DNA
 <213> Artificial Sequence

 <220>

<223> 3'UTR-003 (alpha-actin UTR)

<400> 162

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acacactcca cctccagcac gcgacttctc aggacgacga atcttctcaa tgggggggcg      60
gctgagctcc agccacccccg cagtcacttt ctttgtaaca acttccgttg ctgccatcgt      120
aaactgacac agtggtttata acgtgtacat acattaactt attacctcat tttgttattt      180
ttcgaaacaa agccctgtgg aagaaaatgg aaaacttgaa gaagcattaa agtcattctg      240
ttaagctgcg taaatgggtct ttgaataaag cctgagtagg aagtctaga      289
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<210> 163

<211> 379

<212> DNA

<213> Artificial Sequence

<220>

<223> 3'UTR-004 (Albumin UTR)

<400> 163

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catcacattt aaaagcatct cagcctacca tgagaataag agaaagaaaa tgaagatcaa      60
aagcttattc atctgttttt ctttttcgtt ggtgtaaagc caacaccctg tctaaaaaac      120
ataaatttct ttaatcattt tgcctctttt ctctgtgctt caattaataa aaaatggaaa      180
gaatctaata gagtgggtaca gcactgttat ttttcaaaga tgtgttgcta tcctgaaaat      240
tctgtaggtt ctgtggaagt tccagtgttc tctcttattc cacttcggta gaggatttct      300
agtttcttgt gggctaatta aataaatcat taatactctt ctaatgggtct ttgaataaag      360
cctgagtagg aagtctaga      379
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<210> 164

<211> 118

<212> DNA

<213> Artificial Sequence

<220>

<223> 3'UTR-005 (alpha-globin UTR)

<400> 164

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gctgccttct gcggggcttg ctttctggcc atgcccttct tctctccctt gcacctgtac      60
ctcttgggtct ttgaataaag cctgagtagg aaggcggccg ctcgagcatg catctaga      118
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<210> 165

<211> 908

<212> DNA

<213> Artificial Sequence

<220>

<223> 3'UTR-006 (G-CSF UTR)

<400> 165

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ggactgggag gtagataggt aaataccaag tattttattac tatgactgct cccagaccct      240
ggctctgcaa tgggcactgg gatgagccgc tgtgagcccc tggtcctgag ggtccccacc      300
tgggaccctt gagagtatca ggtctccac gtgggagaca agaaatccct gtttaatatt      360
taaacagcag tgttccccat ctgggtcctt gcaccctca ctctggcctc agccgactgc      420
acagcggccc ctgcatcccc ttggctgtga ggcccctgga caagcagagg tggccagagc      480
tgggaggcat ggccctgggg tcccacgaat ttgctgggga atctcgtttt tcttcttaag      540
acttttggga catggtttga ctcccgaaca tcaccgacgc gtctcctggt tttctgggtg      600
gcctcgggac acctgccttg cccccacgag ggtcaggact gtgactcttt ttagggccag      660
gcaggtgcct ggacatttgc cttgctggac ggggactggg gatgtgggag ggagcagaca      720
ggaggaatca tgtcaggcct gtgtgtgaaa ggaagctcca ctgtcaccct ccacctcttc      780
acccccact caccagtgtc cctccactg tcacattgta actgaacttc aggataataa      840
agtgtttgcc tccatggtct ttgaataaag cctgagtagg aaggcggccg ctcgagcatg      900
catctaga                                          908
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<210> 166

<211> 835

<212> DNA

<213> Artificial Sequence

<220>

<223> 3'UTR-007 (Colla2; collagen, type I, alpha 2 UTR)

<400> 166

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actcaatcta aattaaaaaa gaaagaaatt tgaaaaaact ttctctttgc catttcttct      60
tcttcttttt taactgaaag ctgaatcctt ccatttcttc tgcacatcta cttgcttaaa      120
ttgtgggcaa aagagaaaaa gaaggattga tcagagcatt gtgcaataca gtttcattaa      180
ctccttcccc cgctccccca aaaatttgaa tttttttttc aacactctta cacctgttat      240
ggaaaatgtc aacctttgta agaaaaccaa aataaaaatt gaaaaataaa aaccataaac      300
atttgcacca cttgtggctt ttgaatatct tccacagagg gaagtttaaa acccaaactt      360
ccaaaggttt aaactacctc aaaacacttt cccatgagtg tgatccacat tgtaggtgc      420
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tgacctagac agagatgaac tgaggtcctt gttttgtttt gttcataata caaaggtgct	480
aattaatagt atttcagata cttgaagaat gttgatgggtg ctagaagaat ttgagaagaa	540
atactcctgt attgagttgt atcgtgtgggt gtatttttta aaaaatttga tttagcattc	600
atatatttcca tcttattccc aattaaagt atgcagatta ttgccccaaa tcttcttcag	660
attcagcatt tgttctttgc cagtctcatt ttcattcttct tccatgggtc cacagaagct	720
ttgtttcttg ggcaagcaga aaaattaaat tgtacctatt ttgtatatgt gagatgttta	780
aataaattgt gaaaaaatg aaataaagca tgtttggttt tccaaaagaa catat	835

<210> 167
 <211> 297
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3'UTR-008 (Col6a2; collagen, type VI, alpha 2 UTR)

<400> 167	
cgccgcccgc cgggccccgc agtcgaggggt cgtgagccca ccccgcccat ggtgctaagc	60
gggcccgggt cccacacggc cagcacggct gctcactcgg acgacgccct gggcctgcac	120
ctctccagct cctcccacgg ggtccccgta gccccggccc ccgcccagcc ccaggtctcc	180
ccaggccctc cgcaggctgc ccggcctccc tccccctgca gccatcccaa ggctcctgac	240
ctacctggcc cctgagctct ggagcaagcc ctgacccaat aaaggctttg aacccat	297

<210> 168
 <211> 602
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3'UTR-009 (RPN1; ribophorin I UTR)

<400> 168	
ggggctagag ccctctccgc acagcgtgga gacggggcaa ggaggggggt tattaggatt	60
ggtggttttg ttttgctttg tttaaagccg tgggaaaatg gcacaacttt acctctgtgg	120
gagatgcaac actgagagcc aaggggtggg agttgggata atttttatat aaaagaagtt	180
tttccacttt gaattgctaa aagtggcatt tttcctatgt gcagtcactc ctctcatttc	240
taaaataggg acgtggccag gcacgggtggc tcatgcctgt aatcccagca ctttgggagg	300
ccgaggcagg cggctcacga ggtcaggaga tcgagactat cctgggctaac acggtaaaac	360
cctgtctcta ctaaaagtac aaaaaattag ctgggcgtgg tgggtgggcac ctgtagtccc	420

agctactcgg gaggctgagg caggagaaaag gcatgaatcc aagaggcaga gcttgcagtg 480
agctgagatc acgccattgc actccagcct gggcaacagt gttaagactc tgtctcaaat 540
ataaataaat aaataaataa ataaataaat aaataaaaat aaagcgagat gttgccctca 600
aa 602

<210> 169
<211> 785
<212> DNA
<213> Artificial Sequence

<220>
<223> 3'UTR-010 (LRP1; low density lipoprotein receptor-related protein 1 UTR)

<400> 169
ggccctgccc cgctcggactg cccccagaaa gcctcctgcc ccctgccagt gaagtccttc 60
agtgagcccc tccccagcca gcccttcctt ggccccgccg gatgtataaa tgtaaaaatg 120
aaggaattac attttatatg tgagcgagca agccggcaag cgagcacagt attatttctc 180
catccccctc ctgcctgctc cttggcaccc ccatgctgcc ttcagggaga caggcaggga 240
gggcttgggg ctgcacctcc taccctccca ccagaacgca cccactggg agagctggtg 300
gtgcagcctt cccctccctg tataagacac tttgccaagg ctctcccctc tcgccccatc 360
cctgcttgcc cgctcccaca gcttctgag ggctaattct ggggaaggag agttctttgc 420
tgccccctgtc tggaagacgt ggctctgggt gaggtaggcg ggaaaggatg gagtgtttta 480
gttcttgggg gagggcaccc caaaccacag ccccaactcc aggggcacct atgagatggc 540
catgctcaac cccctccca gacaggccct cctgtctcc agggccccca ccgaggttcc 600
cagggtgga gacttctct ggtaaacatt cctccagcct cccctcccct ggggacgcca 660
aggaggtggg ccacaccag gaagggaag cgggcagccc cgttttgggg acgtgaacgt 720
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attgt 785

<210> 170
<211> 3001
<212> DNA
<213> Artificial Sequence

<220>
<223> 3'UTR-011 (Nnt1; cardiotrophin-like cytokine factor 1 UTR)

<400> 170

atattaagga tcaagctggt agctaataat gccacctctg cagttttggg aacaggcaaa	60
taaagtatca gtatacatgg tgatgtacat ctgtagcaaa gctcttggag aaaatgaaga	120
ctgaagaaag caaagcaaaa actgtataga gagatttttc aaaagcagta atccctcaat	180
tttaaaaaag gattgaaaat tctaaatgtc tttctgtgca ttttttttgt gttaggaatc	240
aaaagtattt tataaaagga gaaagaacag cctcatttta gatgtagtcc tgttggattt	300
tttatgcctc ctgagtaacc agaaatgttt taaaaaacta agtgtttagg atttcaagac	360
aacattatac atggctctga aatatctgac acaatgtaaa cattgcaggc acctgcattt	420
tatgtttttt ttttcaacaa atgtgactaa tttgaaactt ttatgaactt ctgagctgtc	480
cccttgcaat tcaaccgcag tttgaattaa tcatatcaaa tcagttttaa ttttttaa	540
tgtacttcag agtctatatt tcaagggcac attttctcac tactatttta atacattaaa	600
ggactaaata atctttcaga gatgctggaa acaaatcatt tgctttatat gtttcattag	660
aataccaatg aaacatacaa cttgaaaatt agtaatagta tttttgaaga tcccatttct	720
aattggagat ctctttaatt tcgatcaact tataatgtgt agtactatat taagtgcact	780
tgagtggaat tcaacatttg actaataaaa tgagttcatc atgttggcaa gtgatgtggc	840
aattatctct ggtgacaaaa gagtaaaatc aaatatcttct gcctgttaca aatatcaagg	900
aagacctgct actatgaaat agatgacatt aatctgtctt cactgtttat aatacggatg	960
gatttttttt caaatcagtg tgtgttttga ggtcttatgt aattgatgac atttgagaga	1020
aatggtggct ttttttagct acctctttgt tcatttaagc accagtaaag atcatgtctt	1080
tttatagaag tgtagatttt ctttgtgact ttgctatcgt gcctaaagct ctaaatatag	1140
gtgaatgtgt gatgaatact cagattattt gtctctctat ataattagtt tggactaag	1200
tttctcaaaa aattattaac acatgaaaga caatctctaa accagaaaaa gaagtagtac	1260
aaattttggt actgtaatgc tcgctgttag tgagtttaaa acacacagta tcttttggtt	1320
ttataatcag tttctatttt gctgtgcctg agattaagat ctgtgtatgt gtgtgtgtgt	1380
gtgtgtgctt ttgtgtgtta aagcagaaaa gactttttta aaagttttaa gtgataaatg	1440
caatttggtt attgatctta gatcactagt aaactcaggg ctgaattata ccatgtatat	1500
tctattagaa gaaagtaaac accatcttta ttcctgccct ttttcttctc tcaaagtagt	1560
tgtagttata tctagaaaga agcaattttg atttcttgaa aaggtagttc ctgcactcag	1620
tttaaaactaa aaataatcat acttggattt tatttatatt tgatcatagta aaaattttaa	1680
tttatatata tttttattta gtattatctt attctttgct atttgccaat cctttgtcat	1740

caattgtggtt aaatgaattg aaaattcatg ccctgttcat tttatttttac tttattgggtt	1800
aggatatttta aaggatttttt gtatatataa tttctttaaata taatattcca aaagggttagt	1860
ggacttagat tataaatttat ggcaaaaatc taaaaacaac aaaaatgatt tttatacatt	1920
ctatttcatt attcctctttt ttccaataag tcatacaatt ggtagatatg acttatttta	1980
tttttgtatt attcactata tctttatgat atttaagtat aaataattaa aaaaatttat	2040
tgtaccttat agtctgtcac caaaaaaaaa aaattatctg taggtagtga aatgctaattg	2100
ttgatttgtc tttaaggggt tgtaactat cctttatttt ctcatgtgtc tttaaattagg	2160
agtttgtggt taaattactc atctaagcaa aaaatgtata taaatcccat tactgggtat	2220
atacccaaag gattataaat catgctgcta taaagacaca tgcacacgta tgtttattgc	2280
agcactattc acaatagcaa agacttgga ccaacccaaa tgtccatcaa tgatagactt	2340
gattaagaaa atgtgcacat atacaccatg gaatactatg cagccataaa aaaggatgag	2400
ttcatgtcct ttgtagggac atggataaag ctggaaacca tcattctgag caaactattg	2460
caaggacaga aaaccaaaaca ctgcatgttc tcaactcatag gtgggaattg aacaatgaga	2520
acacttgga acaaggtggg gaacaccaca caccagggcc tgtcatgggg tggggggagt	2580
ggggagggat agcattagga gatataccta atgtaaatga tgagttaatg ggtgcagcac	2640
accaacatgg cacatgtata catatgtagc aaacctgcac gttgtgcaca tgtaccctag	2700
aacttaaagt ataattaaaa aaaaaagaa aacagaagct atttataaag aagttatttg	2760
ctgaaataaa tgtgatcttt cccattaaaa aaataaagaa attttgggggt aaaaaaacac	2820
aatatattgt attcttgaaa aattctaaga gagtggtatg gaagtgttct caccacaaaa	2880
gtgataacta attgaggtaa tgcacatatt aattagaaag attttgtcat tccacaatgt	2940
atatatactt aaaaatatgt tatacacaat aaatacatat attaaaaaat aagtaaattg	3000
a	3001

<210> 171
 <211> 1037
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3'UTR-012 (Col6a1; collagen, type VI, alpha 1 UTR)

<400> 171	
cccaccctgc acgccggcac caaacctgt cctcccaccc ctcccactc atcactaaac	60
agagtaaaat gtgatgcgaa ttttcccgac caacctgatt cgctagattt tttttaagga	120

aaagcttgga aagccaggac acaacgctgc tgcctgcttt gtgcaggggc ctccggggct	180
cagccctgag ttggcatcac ctgcgcaggg ccctctgggg ctgagccctg agctagtgtc	240
acctgcacag ggccctctga ggctcagccc tgagctggcg tcacctgtgc agggccctct	300
ggggctcagc cctgagctgg cctcacctgg gttccccacc ccgggctctc ctgccctgcc	360
ctcctgcccg ccctccctcc tgcctgcgca gtccttccc taggcacctc tgtgctgcat	420
cccaccagcc tgagcaagac gccctctcgg ggctgtgcc gcactagcct ccctctctc	480
tgtccccata gctggttttt cccaccaatc ctcacctaac agttacttta caattaaact	540
caaagcaagc tcttctctc agcttggggc agccattggc ctctgtctcg ttttgggaaa	600
ccaaggtcag gaggccgttg cagacataaa tctcggcgac tcggccccgt ctcctgaggg	660
tcctgctggg gaccggcctg gaccttggcc ctacagccct ggaggccgct gctgaccagc	720
actgaccccg acctcagaga gtactcgagc gggcgctggc tgactcaag accctcgaga	780
ttaacggtgc taaccccgtc tgctcctccc tcccgcagag actggggcct ggactggaca	840
tgagagcccc ttggtgccac agagggtgt gtcttactag aaacaacgca aacctctcct	900
tcctcagaat agtgatgtgt tcgacgtttt atcaaaggcc ccctttctat gttcatgtta	960
gttttgctcc ttctgtgttt ttttctgaac catatccatg ttgctgactt ttccaaataa	1020
aggttttcac tcctctc	1037

<210> 172
 <211> 577
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3'UTR-013 (Calr; calreticulin UTR)

<400> 172	
agaggcctgc ctccagggtg ggactgaggg ctgagcgctc ctgccgcaga gctggccgcg	60
ccaaataatg tctctgtgag actcgagaac tttcatTTTT ttccaggctg gttcggattt	120
gggggtggatt ttggTTTTgt tcccctctc cactctcccc caccctctcc ccgccctttt	180
TTTTTTTTTT ttttaaactg gtattttatc tttgattctc cttcagccct caccctgggt	240
tctcatcttt cttgatcaac atcttttctt gcctctgtcc ctttctctca tctcttagct	300
cccctccaac ctgggggggca gtggtgtgga gaagccacag gcctgagatt tcattctgtc	360
tccttcctgg agcccagagg agggcagcag aaggggggtg tgtctccaac ccccagcac	420
tgaggaagaa cggggctctt ctatttcac ccctcccttt ctcccctgcc ccaggactg	480

ggccacttct ggggtggggca gtgggtccca gattggctca cactgagaat gtaagaacta 540
 caaacaaaat ttctattaaa ttaaattttg tgtctcc 577

<210> 173
 <211> 2212
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3'UTR-014 (Colla1; collagen, type I, alpha 1 UTR)

<400> 173
 ctccctccat cccaacctgg ctccctccca cccaaccaac tttcccccca acccggaac 60
 agacaagcaa cccaaactga acccctcaa aagccaaaaa atgggagaca atttcacatg 120
 gactttggaa aatatttttt tcctttgcat tcatctctca aacttagttt ttatctttga 180
 ccaaccgaac atgacaaaaa accaaaagtg cattcaacct taccaaaaaa aaaaaaaaaa 240
 aaagaataaa taaataactt tttaaaaaag gaagcttggg ccacttgctt gaagacccat 300
 gcgggggtaa gtccctttct gcccgttggg cttatgaaac cccaatgctg ccctttctgc 360
 tcctttctcc acacccccct tggggcctcc cctccactcc ttcccaaata tgtctcccca 420
 gaagacacag gaaacaatgt attgtctgcc cagcaatcaa aggcaatgct caaacaccca 480
 agtggccccc accctcagcc cgctcctgcc cgcccagcac ccccaggccc tgggggacct 540
 ggggttctca gactgccaaa gaagccttgc catctggcgc tcccatggct cttgcaacat 600
 ctccccttcg tttttgaggg ggtcatgccg ggggagccac cagcccctca ctgggttcgg 660
 aggagagtca ggaagggcca cgacaaagca gaaacatcgg atttggggaa cgcgtgtcaa 720
 tcccttgtgc cgcagggctg ggcgggagag actgttctgt tccttgtgta actgtgttgc 780
 tgaaagacta cctcgttctt gtcttgatgt gtcaccgggg caactgcctg ggggcgggga 840
 tgggggcagg gtggaagcgg ctccccatth tataccaaag gtgctacatc tatgtgatgg 900
 gtgggggtggg gagggaatca ctggtgctat agaaattgag atgccccccc aggccagcaa 960
 atgttccttt ttgttcaaag tctattttta ttccttgata tttttctttt tttttttttt 1020
 tttttgtgga tggggacttg tgaatttttc taaaggtgct atttaacatg ggaggagagc 1080
 gtgtgcggct ccagcccagc ccgctgctca ctttccaccc tctctccacc tgcctctggc 1140
 ttctcaggcc tctgctctcc gacctctctc ctctgaaacc ctctccaca gctgcagccc 1200
 atcctcccgg ctccctccta gtctgtcctg cgctctctgt ccccggtttt cagagacaac 1260
 ttcccaaagc acaaagcagt ttttccccct aggggtggga ggaagcaaaa gactctgtac 1320

ctattttgta tgtgtataat aatttgagat gtttttaatt attttgattg ctggaataaa	1380
gcatgtggaa atgacccaaa cataatccgc agtggcctcc taatttcctt ctttggagtt	1440
gggggagggg tagacatggg gaaggggctt tggggtgatg ggcttgccctt ccattcctgc	1500
cctttccctc cccactattc tcttctagat ccctccataa cccactccc ctttctctca	1560
cccttcttat accgcaaacc tttctacttc ctctttcatt ttctattctt gcaatttcct	1620
tgcacctttt ccaaatcctc ttctcccctg caataccata caggcaatcc acgtgcacaa	1680
cacacacaca cactcttcac atctgggggt gtccaaacct catacccact ccccttcaag	1740
cccatccact ctccaccccc tggatgccct gcacttggtg gcggtgggat gctcatggat	1800
actgggaggg tgaggggagt ggaaccctg aggaggacct gggggcctct ccttgaactg	1860
acatgaaggg tcatctggcc tctgctccct tctcaccac gctgacctcc tgccgaagga	1920
gcaacgcaac aggagagggg tctgctgagc ctggcgaggg tctgggaggg accaggagga	1980
aggcgtgctc cctgctcgct gtccctggcc tgggggagtg aggagacag acacctggga	2040
gagctgtggg gaaggcactc gcaccgtgct cttgggaagg aaggagacct ggccctgctc	2100
accacggact gggtgccctg acctcctgaa tccccagaac acaaccccc tgggctgggg	2160
tgggtctggg aaccatcgtg ccccgccctc ccgcctactc ctttttaagc tt	2212

<210> 174
 <211> 729
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3'UTR-015 (Plod1; procollagen-lysine, 2-oxoglutarate
 5-dioxygenase 1 UTR)

<400> 174	
ttggccaggc ctgaccctct tggacctttc ttctttgccg acaaccactg cccagcagcc	60
tctgggacct cgggggtcca gggaaccag tccagcctcc tggctgttga cttcccattg	120
ctcttgagac caccaatcaa agagattcaa agagattcct gcaggccaga ggcggaacac	180
acctttatgg ctggggctct ccgtgggtgt ctggaccag cccctggaga caccattcac	240
ttttactgct ttgtagtac tcgtgctctc caacctgtct tcctgaaaaa ccaaggcccc	300
cttccccac ctcttccatg gggtagact tgagcagaac aggggcttcc ccaagttgcc	360
cagaaagact gtctgggtga gaagccatgg ccagagcttc tcccaggcac aggtgttgca	420
ccagggactt ctgcttcaag ttttggggta aagacacctg gatcagactc caagggtgc	480
cctgagtctg ggacttctgc ctccatggct ggtcatgaga gcaaaccgta gtcccctgga	540

gacagcgact ccagagaacc tcttgggaga cagaagaggc atctgtgcac agctcgatct	600
tctacttgcc tgtggggagg ggagtgcac gtccacacac cacactgggt caccctgtcc	660
tggatgcctc tgaagagagg gacagaccgt cagaaactgg agagtttcta ttaaaggcca	720
tttaaacca	729

<210> 175
 <211> 847
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3'UTR-016 (Nucb1; nucleobindin 1 UTR)

<400> 175	
tcctccggga cccagccct caggattcct gatgctcaa ggcgactgat gggcgctgga	60
tgaagtggca cagtcagctt ccctgggggc tgggtgtcatg ttgggctcct ggggcggggg	120
cacggcctgg catttcacgc attgctgcca cccaggtcc acctgtctcc actttcacag	180
cctccaagtc tgtggctctt cccttctgtc ctccgagggg cttgccttct ctctgttcca	240
gtgaggtgct cagtgatcgg cttaacttag agaagccgc cccctccct tctccgtctg	300
tccaagagg gtctgtcttg agcctgcgtt cctaggtggc tcggcctcag ctgctgggt	360
tgtggccgcc ctagcatcct gtatgccac agctactgga atccccgtg ctgctccggg	420
ccaagcttct ggttgattaa tgagggcatg ggggtggccc tcaagacctt cccctacctt	480
ttgtggaacc agtgatgcct caaagacagt gtcccctcca cagctgggtg ccaggggcag	540
gggatcctca gtatagccgg tgaacctga taccaggagc ctgggcctcc ctgaacctt	600
ggcttccagc catctcatcg ccagcctcct cctggacctc ttggccccca gcccttccc	660
cacacagccc cagaagggtc ccagagctga cccactcca ggacctaggc ccagcccctc	720
agcctcatct ggagcccctg aagaccagtc ccaccacct ttctggcctc atctgacact	780
gctccgcac ctgctgtgtg tcctgttcca tgttccggtt ccatccaaat acactttctg	840
gaacaaa	847

<210> 176
 <211> 110
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3'UTR-017 (alpha-globin)

<400> 176
gctggagcct cggtaggcat gcttcttgcc ccttgggcct cccccagcc cctcctcccc 60
ttcctgcacc cgtacccccg tggctcttga ataaagtctg agtgggcggc 110

<210> 177
<211> 119
<212> DNA
<213> Artificial Sequence

<220>
<223> 3'UTR-018

<400> 177
tgataatagg ctggagcctc ggtggccatg cttcttgccc cttgggcctc cccccagccc 60
ctcctcccct tcctgcaccc gtacccccgt ggtctttgaa taaagtctga gtgggcggc 119

<210> 178
<211> 183
<212> PRT
<213> Artificial Sequence

<220>
<223> Tumor necrosis factor ligand superfamily member 4 isoform 1 [Homo sapiens]

<400> 178

Met Glu Arg Val Gln Pro Leu Glu Glu Asn Val Gly Asn Ala Ala Arg
1 5 10 15

Pro Arg Phe Glu Arg Asn Lys Leu Leu Leu Val Ala Ser Val Ile Gln
20 25 30

Gly Leu Gly Leu Leu Leu Cys Phe Thr Tyr Ile Cys Leu His Phe Ser
35 40 45

Ala Leu Gln Val Ser His Arg Tyr Pro Arg Ile Gln Ser Ile Lys Val
50 55 60

Gln Phe Thr Glu Tyr Lys Lys Glu Lys Gly Phe Ile Leu Thr Ser Gln
65 70 75 80

Lys Glu Asp Glu Ile Met Lys Val Gln Asn Asn Ser Val Ile Ile Asn
85 90 95

Cys Asp Gly Phe Tyr Leu Ile Ser Leu Lys Gly Tyr Phe Ser Gln Glu
100 105 110

Val Asn Ile Ser Leu His Tyr Gln Lys Asp Glu Glu Pro Leu Phe Gln
115 120 125

Leu Lys Lys Val Arg Ser Val Asn Ser Leu Met Val Ala Ser Leu Thr
130 135 140

Tyr Lys Asp Lys Val Tyr Leu Asn Val Thr Thr Asp Asn Thr Ser Leu
145 150 155 160

Asp Asp Phe His Val Asn Gly Gly Glu Leu Ile Leu Ile His Gln Asn
165 170 175

Pro Gly Glu Phe Cys Val Leu
180

<210> 179
<211> 133
<212> PRT
<213> Artificial Sequence

<220>
<223> TNFSF4 isoform 2 [Homo sapiens]

<400> 179

Met Val Ser His Arg Tyr Pro Arg Ile Gln Ser Ile Lys Val Gln Phe
1 5 10 15

Thr Glu Tyr Lys Lys Glu Lys Gly Phe Ile Leu Thr Ser Gln Lys Glu
20 25 30

Asp Glu Ile Met Lys Val Gln Asn Asn Ser Val Ile Ile Asn Cys Asp
35 40 45

Gly Phe Tyr Leu Ile Ser Leu Lys Gly Tyr Phe Ser Gln Glu Val Asn
50 55 60

Ile Ser Leu His Tyr Gln Lys Asp Glu Glu Pro Leu Phe Gln Leu Lys
65 70 75 80

Lys Val Arg Ser Val Asn Ser Leu Met Val Ala Ser Leu Thr Tyr Lys
85 90 95

Asp Lys Val Tyr Leu Asn Val Thr Thr Asp Asn Thr Ser Leu Asp Asp
100 105 110

Phe His Val Asn Gly Gly Glu Leu Ile Leu Ile His Gln Asn Pro Gly
115 120 125

Glu Phe Cys Val Leu
130

<210> 180

<211> 198

<212> PRT

<213> Artificial Sequence

<220>

<223> TNFSF4 [Mus musculus]

<400> 180

Met Glu Gly Glu Gly Val Gln Pro Leu Asp Glu Asn Leu Glu Asn Gly
1 5 10 15

Ser Arg Pro Arg Phe Lys Trp Lys Lys Thr Leu Arg Leu Val Val Ser
20 25 30

Gly Ile Lys Gly Ala Gly Met Leu Leu Cys Phe Ile Tyr Val Cys Leu
35 40 45

Gln Leu Ser Ser Ser Pro Ala Lys Asp Pro Pro Ile Gln Arg Leu Arg
50 55 60

Gly Ala Val Thr Arg Cys Glu Asp Gly Gln Leu Phe Ile Ser Ser Tyr
65 70 75 80

Lys Asn Glu Tyr Gln Thr Met Glu Val Gln Asn Asn Ser Val Val Ile
85 90 95

Lys Cys Asp Gly Leu Tyr Ile Ile Tyr Leu Lys Gly Ser Phe Phe Gln
100 105 110

Glu Val Lys Ile Asp Leu His Phe Arg Glu Asp His Asn Pro Ile Ser
115 120 125

Ile Pro Met Leu Asn Asp Gly Arg Arg Ile Val Phe Thr Val Val Ala
130 135 140

Ser Leu Ala Phe Lys Asp Lys Val Tyr Leu Thr Val Asn Ala Pro Asp
145 150 155 160

Thr Leu Cys Glu His Leu Gln Ile Asn Asp Gly Glu Leu Ile Val Val
165 170 175

Gln Leu Thr Pro Gly Tyr Cys Ala Pro Glu Gly Ser Tyr His Ser Thr
180 185 190

Val Asn Gln Val Pro Leu
195

<210> 181
<211> 549
<212> RNA
<213> Artificial Sequence

<220>
<223> TNFSF4, ORF [Homo sapiens]

<400> 181
auggaaaggg uccaaccccu ggaagagaau gugggaaaug cagccaggcc aagauucgag 60
aggaacaagc uauugcuggu ggccucugua auucagggac uggggcugcu ccugugcuuc 120
accuacaucu gccugcacuu cucugcucuu cagguaucac aucgguauc ucgaaaucaa 180
aguaucaaag uacaauuuac cgaauauaag aaggagaaaag guuucauccu cacuucccaa 240
aaggagggaug aaaucaugaa ggugcagaac aacucaguca ucaucaacug ugauggguuu 300
uauucaucu cccugaaggg cuacuucucc caggaaguca acauuagccu ucauuaccag 360
aaggauagagg agccccucuu ccaacugaag aaggucaggu cugucaacuc cuugauggug 420
gccucucuga cuuacaaaga caaagucuac uugaauguga ccacugacaa uaccuccug 480
gaugacuucc augugaaugg cggagaacug auucuuauc aucaaaauc uggugaauuc 540
uguguccuu 549

<210> 182
<211> 3484
<212> RNA
<213> Artificial Sequence

<220>
<223> TNFSF4, transcript variant 1, mRNA, NM_003326

<400> 182
ggcccuggga ccuuugccua uuuucugauu gauaggcuuu guuuugucu uaccuccuuc 60
uuucugggga aaacuucagu uuuaucgcac guuccccuuu uccaauaucu caucuuccu 120
cuaccagau ugugaagaug gaaagggucc aaccuccugga agagaaugug ggaaugcag 180

ccaggccaag	auucgagagg	aacaagcuau	ugcugguggc	cucuguaauu	cagggacugg	240
ggcugcuccu	gugcuucacc	uacaucugcc	ugcacuucuc	ugcucuucag	guaucacauc	300
gguauccucg	aauucaaagu	aucaaaguac	aauuuaccga	auauaagaag	gagaaagguu	360
ucauccucac	uucccaaaaag	gaggaugaaa	ucaugaaggu	gcagaacaac	ucagucauca	420
ucaacuguga	uggguuuuuau	cucaucucucc	ugaagggcua	cuucucccag	gaagucaaca	480
uuagccuuca	uuaccagaag	gaugaggagc	cccucuucca	acugaagaag	gucaggucug	540
ucaacuccuu	gauggugggcc	ucucugacuu	acaaagacaa	agucuacuug	aaugugacca	600
cugacaauac	cucccuggau	gacuuccaug	ugaaugggcg	agaacugauu	cuuauccauc	660
aaaauccugg	ugaauucugu	guccuuugag	gggcugaugg	caauaucuaa	aaccaggcac	720
cagcaugaac	accaagcugg	ggguggacag	ggcauggauu	cuucauugca	agugaaggag	780
ccucccagcu	cagccacgug	ggaugugaca	agaagcagau	ccuggcccuc	ccgcccccac	840
cccucagggg	uaauuuaaaac	uuauuuuaua	uaccaguuaa	ucuuaauuuu	ccuuaauuuu	900
ucuaaaauugc	cuagccguca	cacccaaga	uugccuugag	ccuacuaggc	accuuuguga	960
gaaagaaaaa	auagaugccu	cuucuucaag	augcauuguu	ucuauugguc	aggcaauugu	1020
cauaauaaaac	uuauugcauu	gaaaacggua	ccugacuacc	auuugcugga	aaauugacau	1080
guguguggca	uuaucaaaaau	gaagaggagc	aaggagugaa	ggaguggggg	uaugaaucug	1140
ccaaaggugg	uaugaaccaa	cccuggaag	ccaaagcggc	cucuccaagg	uuaaaauugau	1200
ugcaguuuugc	auauugccua	aauuuuuacu	uucucauuug	gugggggguuc	aaaagaagaa	1260
ucagcuugug	aaaaaucagg	acuugaagag	agccgucuaa	gaaauaccac	gugcuuuuuu	1320
ucuuuaccuau	uuugcuuucc	cagccuccaa	acauaguuaa	uagaaauuuc	ccuuccaaga	1380
acugucuggg	gaugugaugc	uuugaaaaau	cuaaucagug	acuuaagaga	gauuuucuug	1440
uauacagggg	gagugagaua	acuuauugug	aaggguuagc	uuuacuguac	aggauagcag	1500
ggaacuggac	aucucagggg	aaaagucagu	acggauuuua	auagccuggg	gaggaaaaca	1560
cauucuuugc	cacagacagg	caaagcaaca	caugcucauc	cuccugccua	ugcugagaua	1620
cgcacucagc	uccaugucuu	guacacacag	aaacauugcu	gguuucaaga	aaugagguga	1680
uccuauuauc	aaauucaauc	ugaugucaaa	uagcacuaag	aaguuauugu	gccuuaugaa	1740
aaauaaugau	cucugucuag	aaauaccaua	gaccuauauu	agucucacau	ugauaaauuga	1800
aacuagaagg	gucuauaauc	agccuaugcc	agggcuucua	uggaaauagua	uccccuuaug	1860
uuuaguugaa	auguccccuu	aacuugauau	aauguguuau	gcuuauaggc	cuguggacaa	1920

ucugauuuuu	caugucaacu	uuccagauga	uuuguaacuu	cucugugcca	aaccuuuuau	1980
aaacauaaa	uuuugagaua	uguauuuuaa	aauguagca	cauguuuccc	ugacauuuuc	2040
aaugaggau	acaacaucac	agaaucuuuc	uggaugauuc	uguguuauca	aggaauugua	2100
cugugcuaca	auuauucua	gaaucuccag	aaagguggag	ggcuguucgc	ccuuacacua	2160
aauggucua	guuggauuuu	uuuuuccugu	uuucuauuuc	cucuaaagua	caccuucac	2220
uauauuccca	ucccucuaau	uuaaucuguu	augaaggaag	guaaaauaaa	augcuaaaau	2280
gaagaaaug	uagguaaggu	aagaggauc	aaguucugag	uggcugccaa	ggcacucaca	2340
gaucuaau	cauggcuaaa	uauuuauuga	gggccuacug	uggaccaggc	acugggcuaa	2400
auacuuacau	uuacaagaau	cauucugaga	cagauauuca	augauaucug	gcuucacuac	2460
ucagaagau	gugugugugu	uugugugugu	gugugugugu	guauuucacu	uuuuguuauu	2520
gaccauguuc	ugcaaaaauug	caguucacua	gugagugaua	uccgaaaaag	uaaacguuuu	2580
ugacuauagg	uaauauuuua	gaaaauugcau	gguucauuuu	uaaguuuugga	auuuuuaucu	2640
auauuucua	cagaugugca	gugcacaugc	aggccuaagu	auauguugug	uguguuguuu	2700
gucuuuugaug	ucaugguuccc	cucucuauagg	ugcucacucg	cuuugggugc	accugggccug	2760
cucuucccau	guuggccucu	gcaaccacac	agggauauuu	cugcuauugca	ccagccucac	2820
uccaccuucc	uuccaucaaa	aaauugugug	ugugucucag	ucccuguaag	ucauguccuu	2880
cacagggaga	auuaacccuu	cgauauacau	ggcagaguuu	ugugggaaaa	gaauugaaug	2940
aaaagucagg	agaucagaau	uuuaauuuug	acuuagccac	uaacuagcca	uguaaccuug	3000
ggaaagucau	uucccauuuc	ugggucuugc	uuuucuuuc	guuaaaugag	aggaauguaa	3060
aaauucuaac	aguuuagaau	cuuauugcuu	caguguuauuc	ugugaauugca	cauauuaaa	3120
gucuauguuc	uuguugcuau	gagucaagga	guguaaccuu	cuccuuuacu	auguugaaug	3180
uauuuuuuuc	uggacaagcu	uacaucuucc	ucagccaucu	uugugagucc	uucagagca	3240
guuaucuuu	guuaguuaa	uauuuucua	uuagagaauug	cuuaagggau	uccaaucccg	3300
auccaaauc	uaauuuguuc	uuaaguauac	ugggcagguc	cccuauuuu	agucauaauu	3360
uuguauuuag	ugcuuuccug	gcucucagag	aguauuaaua	uugauuuua	uaauuauugu	3420
aauguaaua	uugcuuuua	cauggaaaca	aauaaaagau	cucagaauuc	acuaaaaaaa	3480
aaaa						3484

<210> 183
 <211> 1609
 <212> RNA

<213> Artificial Sequence

<220>

<223> Mus musculus Tnfsf4, mRNA, NM_009452

<400> 183

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auugcuuuuu gucuccuguu cugggaccuu uaucuucuga cccgcaggcu ugacuuugcc      60
cuuauuggcu ccuuuguggu gaagagcagu cuucccccag guuccccgcc acagcuguau      120
cuccucugca ccccgacugc agagauggaa ggggaagggg uucaaccccu ggaugagaau      180
cuggaaaacg gaucaaggcc aagauucaag uggaagaaga cgcuaaggcu gguggucucu      240
gggaucaagg gagcagggau gcuucugugc uucaucuaug ucugccugca acucucuucc      300
ucuccggcaa aggaccucc aauccaaaga cucagaggag caguuaccag augugaggau      360
gggcaacuau ucaucagcuc auacaagaau gaguaucaaa cuauggaggu gcagaacaau      420
ucgguuguca ucaagugcga ugggcuuuau aucaucuacc ugaagggcuc cuuuuuccag      480
gaggucaaga uugaccuuca uuuccgggag gaucauaauc ccaucucuau uccaaugcug      540
aacgaugguc gaaggauugu cuucacugug guggccucuu uggcuuucaa agauaaaguu      600
uaccugacug uaaaugcucc ugauacucuc ugcgaaacacc uccagauaaa ugauggggag      660
cugauuguug uccagcuaac gccuggauac ugugcuccug aaggaucuua ccacagcacu      720
gugaaccaag uaccacugug aaauccacuc ugagggugga cgggacacag guucuuucuc      780
gagagagaug agugcauccu gcucaugaga ugugacugaa ugcagagccu acccuacuuc      840
cucacucagg gauauuuaaa ucaugucuua cauaacaguu gaccucucau ucccaggauu      900
gccuugagcc ugcuaagagc uguucuggga augaaaaaaaa aaauaaaugu cucuuaaga      960
cacauugcuu cugucgguca gaagcucauc guaaauaaca ucugccacug aaaauggcgc      1020
uugauugcua ucuucuagaa uuuugauguu gucaaaagaa agcaaaacau ggaaagggug      1080
guguccaccg gccaguagga gcuggagugc ucucuucaag guuaagguga uagaaguuaa      1140
cauguugccu aaaacugucu cucaucucau ggggggcuug gaaagaagau uaccccggug      1200
aaagcaggac uugaagauga cuguuaaagc aacaaggugc acucuuuucc uggccccuga      1260
auacacauaa aagacaacuu ccuucaaaga acuaccuagg gacuaugaua cccaccaaag      1320
aaccacguca gcgaugcaaa gaaaaccagg agagcuuugu uuauuuugca gaguauacga      1380
gagauuuuac ccugagggcu auuuuuauua uacaggauga gagugaacug gaugucucag      1440
gauaaaggcc aagaaggauu uuucacaguc ugagcaagac uguuuuuugua gguucucucu      1500
ccaaaacuuu uagguaaaau uuugauaaau uaaaaauuuu uaguuaauuu uuuggaccuu      1560
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uuucaauaga agauugaaac auuuccagau gguuucauau cccacaag 1609

<210> 184
<211> 737
<212> RNA
<213> Artificial Sequence

<220>
<223> mRNA sequence: Human OX40L with 5'-UTR, 3'-UTR, and miR-122 binding site

<400> 184
gggaaauaag agagaaaaga agaguaagaa gaaauauaag agccaccaug gaaagggucc 60
aaccuccugga agagaauugug ggaaauvcag ccaggccaag auucgagagg aacaagcuau 120
ugcugguggc cucuguaauu caggacugc ggcugcuccu gugcuucacc uacaucugcc 180
ugcacuucuc ugcucuucag guaucacauc gguauccucg aaaucaaagu aucaaaguac 240
aauuuaccga auauaagaag gagaaagguu ucauccucac uucccaaaag gaggaugaaa 300
ucaugaaggu gcagaacaac ucagucauca ucaacuguga uggguuuuau cucaucuccc 360
ugaagggcua cuucucccag gaagucaaca uuagccuua uuaccagaag gaugaggagc 420
cccucuucca acugaagaag gucaggucug ucaacuccuu gaugguggcc ucucugacuu 480
acaaagacaa agucuacuug aaugugacca cugacaauac cuccucggau gacuuccaug 540
ugaauvgcgga agaacugauu cuuauccauc aaaauccugg ugaauucugu guccuuugau 600
aaauvgcugg agccucggug gccaugcuuc uugcccccug ggccuccccc cagccccucc 660
uccccuuccu gcacccguac cccccaaca ccuugucac acuccagugg ucuuugaaua 720
aagucugagu gggcggc 737

<210> 185
<211> 782
<212> RNA
<213> Artificial Sequence

<220>
<223> mRNA sequence: murine OX40L with 5'-UTR, 3'-UTR, and miR-122 binding site

<400> 185
gggaaauaag agagaaaaga agaguaagaa gaaauauaag agccaccaug gaaggggaag 60
ggguucaacc ccuggaugag aaucuggaaa acggaucaag gccaaagauuc aaguggaaga 120
agacgcuaag gcuggugguc ucugggauca agggagcagg gaugcuucug ugcuucaucu 180
augucugccu gcaacucucu uccucuccgg caaaggaccc uccaauccaa agacucagag 240

gagcaguuac cagaugugag gauggggaac uauucaucag cucauacaag aaugaguauc	300
aaacuaugga ggugcagaac aaucgguug ucaucaagug cgaugggcuu uauaucaucu	360
accugaaggg cuccuuuuuc caggagguca agauugaccu ucauuuccgg gaggaucuaa	420
aucccaucuc uauuccaag cugaacgaug gucgaaggau ugucuucacu gugguggccu	480
cuuuggcuuu caaagauaaa guuuaccuga cuguaaaugc uccugauacu cucugcgaac	540
accuccagau aaaugauggg gagcugauug uguccagcu aacgccugga uacugugcuc	600
cugaaggauc uuaccacagc acugugaacc aaguaccacu gugauaaauag gcuggagccu	660
cgguggccau gcuucuugcc ccuugggccu ccccccagcc ccuccucucc uuccugcacc	720
cguaccccc aaacaccauu gucacacucc aguggucuuu gaauaaaguc ugagugggcg	780
gc	782

<210> 186
 <211> 549
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Codon optimized human OX40L sequences

<400> 186	
atggaaaggg tccaaccctt ggaagagaat gtgggaaatg cagccaggcc aagattcgag	60
aggaacaagc tattgctggg ggctctgtga attcaggagc tggggctgct cctgtgcttc	120
acctacatct gcctgcactt ctctgctctt caggatcac atcgggtatcc tcgaattcaa	180
agtatcaaag tacaatttac cgaatataag aaggagaaag gtttcacatc cacttcccaa	240
aaggaggatg aaatcatgaa ggtgcagaac aactcagtca tcatcaactg tgatgggttt	300
tatctcatct ccctgaaggg ctacttctcc caggaagtca acattagcct tcattaccag	360
aaggatgagg agccccctct ccaactgaag aaggtcaggt ctgtcaactc cttgatgggtg	420
gcctctctga cttacaaaga caaagtctac ttgaatgtga ccaactgacaa tacctccctg	480
gatgacttcc atgtgaatgg cggagaactg attcttatcc atcaaaatcc tggatgaattc	540
tgtgtcctt	549

<210> 187
 <211> 594
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Codon optimized mouse OX40L sequences

<400> 187
atggaagggg aaggggttca acccctggat gagaatctgg aaaacggatc aaggccaaga 60
ttcaagtgga agaagacgct aaggctggtg gtctctggga tcaagggagc agggatgctt 120
ctgtgcttca tctatgtctg cctgcaactc tcttcctctc cggcaaagga ccctccaatc 180
caaagactca gaggagcagt taccagatgt gaggatgggc aactattcat cagctcatac 240
aagaatgagt atcaaactat ggaggtgcag aacaattcgg ttgtcatcaa gtgcatggg 300
ctttatatca tctacctgaa gggctccttt ttccaggagg tcaagattga ccttcatttc 360
cgggaggatc ataatcccat ctctattcca atgctgaacg atggtcgaag gattgtcttc 420
actgtggtgg cctcttttggc tttcaaagat aaagtttacc tgactgtaaa tgctcctgat 480
actctctgcg aacacctcca gataaatgat ggggagctga ttgttgtcca gctaacgcct 540
ggatactgtg ctctgaagg atcttaccac agcactgtga accaagtacc actg 594

<210> 188
<211> 549
<212> RNA
<213> Artificial Sequence

<220>
<223> Codon-optimized sequence 1 for ENSP 281834

<400> 188
auggagagag ugcagccccc ggaggagaac gugggcaacg ccgccagacc cagauucgag 60
agaaacaagc ugcugcuggu ggccagcgug auccagggcc ugggccugcu gcugugcuuc 120
accuacau cu gccugcacuu cagcgcccug caggugagcc acagauaccc cagaauccag 180
agcaucaagg ugcaguucac cgaguacaag aaggagaagg gcuucauccu gaccagccag 240
aaggaggacg agaucaugaa ggugcagaac aacagcguga ucaucaacug cgacggcuuc 300
uaccugauca gccugaaggg cuacuucagc caggagguga acaucagccu gcacuaccag 360
aaggacgagg agccccuguu ccagcugaag aaggugagaa gcgugaacag ccugauggug 420
gccagccuga ccuacaagga caagguguac cugaacguga ccaccgacaa caccagccug 480
gacgacuucc acgugaacgg cggcgagcug auccugaucc accagaaccc cggcgaguuc 540
ugcgugcug 594

<210> 189
<211> 549
<212> RNA
<213> Artificial Sequence

<220>

<223> Codon-optimized sequence 2 for ENSP 281834

<400> 189

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auggagcugug ugcagccucu ugaggagaau gugggaaaug cagcccggcc ucgauucgaa      60
cguaauaaaac uccugcucgu ggccuccgug auccaggguc ucgguuuuuu gcuguguuuu      120
accuauauau gcuuacacuu uagugcauua caggucucac accgguaccc ucgcauucag      180
ucuauaaaag ugcaguuuac cgaguauaag aaggagaaag guuuuauacu gacuucucag      240
aaagaggacg agaucaugaa ggugcagaau aaugcguca uuaucaacug cgauggauuc      300
uaucauuuuu ccuaaaaggg guacuucagc caggagguca auauaucacu gcacuaucua      360
aaggacgagg agccccuguu ucaacugaag aaagugcgau caguuuacuc ucugaugguu      420
gccucucuga ccuauaagga caaagucuac uugaacguga caacugacaa caccucacug      480
gaugacuuc augugaauug gggggaacug auucuuauc aucagaaucc aggagaauuc      540
ugugugcuc                                     549
```

<210> 190

<211> 549

<212> RNA

<213> Artificial Sequence

<220>

<223> Codon-optimized sequence 3 for ENSP 281834

<400> 190

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auggagcggg ugcagcccuu ggaggagaau gugggcaaug cugcccggcc cagguuugaa      60
agaaacaagc ugcugcuggu ggccagcguc auccagggcc ugggccugcu gcugugcuuc      120
accuacau cuu gccugcacuu cagcgcccug caggugagcc accgcuaccc ccgcauccag      180
agcaucaagg ugcaguucac agaguacaag aaggagaagg gcuucauccu gaccagccag      240
aaggaggau agaucaugaa ggugcagaac aacagcguca ucaucaacug ugauggcuuc      300
uaccugauca gccugaaggg cuacuucagc caggagguga acaucagccu gcacuaccag      360
aaggauagag agccccucu ccagcugaag aaggugcgcu cugugaacag ccugauggug      420
gccagccuga ccuacaagga caagguguac cugaauguga ccacagacaa caccagccug      480
gaugacuucc acgugaauug aggagagcug auccugauc accagaaccc uggagaguuc      540
ugugugcug                                     549
```

<210> 191

<211> 549

<212> RNA

<213> Artificial Sequence

<220>

<223> Codon-optimized sequence 4 for ENSP 281834

<400> 191

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auggagcggg ugcagccccc ggaggagaac gugggcaacg ccgcccggcc gcguuuugag      60
cgaaauaagu uacugcuugu ugcaucugug auacaggggu ugguuuuacu ucuuugcuuu      120
acauauauuu gucuccacuu uagugcgcuu cagguaucac aucgguaccc gcgcauccag      180
ucaaucaagg uccaguucac ugaauauaaa aaggagaaag gauucauucu gacuucacaa      240
aaagaggacg aaaucaugaa agugcagaac aacucuguaa uuauaaacug cgauggguuc      300
uaucugauca gucugaaggg auauuuuagc caggaaguaa auauuucacu acauuauacag      360
aaggacgaag aaccacuuuu ucaacugaag aaaguccggu ccgugaacuc ccugaugguu      420
gcuagccuua ccuacaagga uaaagucuau uaaaacguca caacagauaa cacuagccuc      480
gacgauuucc augugaacgg aggugaacug auauugaucc aucaaaaccc cggcgaguuc      540
ugcguuuua                                     549
```

<210> 192

<211> 549

<212> RNA

<213> Artificial Sequence

<220>

<223> Codon-optimized sequence 5 for ENSP 281834

<400> 192

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auggagcggg uccagccccc cgaggagaac guugguaaug ccgcacgucc cagguuugaa      60
cgcaacaagc ugcuguuggu ggccagcguc auucaggggc ugguuuuguu gcugugcuuc      120
acuuacaucu gucugcauuu uagugcacuc cagguguccc accgcuaccc ccguaucacaa      180
uccauuaaag uccaauuuac cgaauacaaa aaagagaagg guuucauucu uaccucccag      240
aaggagggaug aaauuaugaa ggugcagaac aaauucuguua ucaucaacug ugacggauuc      300
uauugauuu cacugaaggg auacuuuucc caggagguga acaucagucu gcauuauacag      360
aaggacgaag aaccgcuuuu ucaacugaag aagguuagga gugugaacuc cuuaauggua      420
gccagccuga cauauaagga caagguauau cugaacguca ccacugauaa caccucuuaa      480
gacgauuuuc auguaaaggg gggagaauug auacucauuc accagaaucc gggugaguuu      540
uguguucug                                     549
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<210> 193

<211> 399
 <212> RNA
 <213> Artificial Sequence

 <220>
 <223> Codon-optimized sequence 1 for ENSP 356691

 <400> 193
 auggugagcc acagauaccc cagaauccag agcaucaagg ugcaguucac cgaguacaag 60
 aaggagaagg gcuucauccu gaccagccag aaggaggacg agaucaugaa ggugcagaac 120
 aacagcguga ucaucaacug cgacggcuuc uaccugauca gccugaaggg cuacuucagc 180
 caggagguga acaucagccu gcacuaccag aaggacgagg agccccuguu ccagcugaag 240
 aaggugagaa gcgugaacag ccugauggug gccagccuga ccuacaagga caagguguac 300
 cugaacguga ccaccgacaa caccagccug gacgacuucc acgugaacgg cggcgagcug 360
 auccugaucc accagaaccc cggcgaguuc ugcgugcug 399

<210> 194
 <211> 399
 <212> RNA
 <213> Artificial Sequence

 <220>
 <223> Codon-optimized sequence 2 for ENSP 356691

 <400> 194
 augguuucuc accguuaccc acggauccag ucuaucaagg uucaguuuac cgaguacaaa 60
 aaggaaaaag gguucauccu caccucucag aaagaggacg aaaucaugaa ggugcagaau 120
 aacucuguaa ucauuauug cgacgguuuu uaucugauuu cacugaaggg cuacuuuagu 180
 caggaaguua auauuaguuu gcacuaccaa aaggacgagg agccucucuu ccaacuaaaa 240
 aagguaagau ccguuauuc ccuauggug gccuccuuaa cuuauaagga caagguguau 300
 cugaauguga ccacagauaa cacaucccug gacgacuucc auguaaaugg cggcgaguua 360
 auucugauac accagaaccc uggcgaguuc ugcgugcug 399

<210> 195
 <211> 399
 <212> RNA
 <213> Artificial Sequence

 <220>
 <223> Codon-optimized sequence 3 for ENSP 356691

 <400> 195
 auggugagcc accgcuaccc ccgcauccag agcaucaagg ugcaguucac agaguacaag 60

aaggagaagg gcuucauccu gaccagccag aaggaggaug agaucaugaa ggugcagaac	120
aacagcguca ucaucaacug ugauggcuuc uaccugauca gccugaaggg cuacuucagc	180
caggagguga acaucagccu gcacuaccag aaggaugagg agccccucuu ccagcugaag	240
aaggugcgcu cugugaacag ccugauggug gccagccuga ccuacaagga caagguguac	300
cugaauguga ccacagacaa caccagccug gaugacuucc acgugaaugg aggagagcug	360
auccugaucc accagaaccc uggagaguuc ugugugcug	399

<210> 196
 <211> 399
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Codon-optimized sequence 4 for ENSP 356691

<400> 196	
auggugagcc accgguaccc ccggauccag agcaucaagg ugcaguucac cgaauacaag	60
aaggagaagg guuuuauccu gacgagccag aaggaagacg agauuaugaa gguccaaaac	120
aacucaguca ucauaaacug cgauggauuu uaccugaucu cucugaaagg guacuucucc	180
caggaaguga auauuagcuu gcacuaucua aaagaugagg agccucuauu ccagcucaag	240
aaggucagaa gcgucaauag ucugaugguc gcaucauuua ccuauaaaga caaaguauau	300
cuaaauguga cgacagacaa uacaucccuc gaugauuuuc acgucaacgg aggcgaacuc	360
auucugaucc accagaaucc aggggaauuu ugcgugcug	399

<210> 197
 <211> 399
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Codon-optimized sequence 5 for ENSP 356691

<400> 197	
auggucucac accgguaccc ccguauccag aguauuaagg ugcaauucac ggaguauaaa	60
aaagaaaagg gauucauucu gacgucucag aaggaagaug agaucaugaa gguccagaac	120
aauucuguga ucauuauuug cgauggauuu uaucugauuu cacuuaaagg auauuuuucc	180
caggagguaa auaucaguuu gcacuaucag aaagacgagg agccauuuuu ccagcugaag	240
aaggugagau cagugaauag ccugaugguu gcgucacuga cguauaaaga caaaguuuau	300
cuaaacguua ccacugauaa uacaucccuu gaugauuuuc augugaacgg gggugaacug	360

auccuuauac accagaaccc cggagaguuc uguguguug 399

<210> 198
 <211> 399
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Codon-optimized sequence 1 for ENSP 439704

<400> 198
 auggugagcc acagauaccc cagaauccag agcaucaagg ugcaguucac cgaguacaag 60
 aaggagaagg gcuucauccu gaccagccag aaggaggacg agaucaugaa ggugcagaac 120
 aacagcguga ucaucaacug cgacggcuuc uaccugauca gccugaaggg cuacuucagc 180
 caggagguga acaucagccu gcacuaccag aaggacgagg agccccuguu ccagcugaag 240
 aaggugagaa gcgugaacag ccugauggug gccagccuga ccuacaagga caagguguac 300
 cugaacguga ccaccgacaa caccagccug gacgacuucc acgugaacgg cggcgagcug 360
 auccugaucc accagaaccc cggcgaguuc ugcgugcug 399

<210> 199
 <211> 399
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Codon-optimized sequence 2 for ENSP 439704

<400> 199
 auggugucac accgguaccc ucggauccag ucuauuaaag uucaauuuac ggaguacaag 60
 aaagaaaaag gcuuuauccu uacaagccaa aaggaagacg agaucaugaa agugcaaaac 120
 aacaguguga uuauaaaauug ugauggcuuc uaccuuauua gucugaaggg cuacuuuagu 180
 caggaaguga auauuagccu acacuaccag aaagacgagg agccccucuu ucaacugaaa 240
 aaggugcgcu ccgugaauuc guugaugguc gccucucuga ccuacaaaga uaagguguau 300
 cuuaacguua cuaccgacaa uacuagucug gacgacuucc acgucaacgg aggcgaacuu 360
 auucugaucc accagaaccc cggcgaauc ugcgugcug 399

<210> 200
 <211> 399
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Codon-optimized sequence 3 for ENSP 439704

<400> 200
auggugagcc accgcuaccc ccgcauccag agcaucaagg ugcaguucac agaguacaag 60
aaggagaagg gcuucauccu gaccagccag aaggaggau agaucaugaa ggugcagaac 120
aacagcgua ucaucaacug ugauggcuuc uaccugauca gccugaaggg cuacuucagc 180
caggagguga acaucagccu gcacuaccag aaggauagg agccccucu ccagcugaag 240
aaggugcgcu cugugaacag ccugauggug gccagccuga ccuacaagga caagguguac 300
cugaauguga ccacagacaa caccagccug gaugacuucc acgugaaugg aggagagcug 360
auccugaucc accagaaccc uggagaguuc ugugugcug 399

<210> 201
<211> 399
<212> RNA
<213> Artificial Sequence

<220>
<223> Codon-optimized sequence 4 for ENSP 439704

<400> 201
auggugagcc accgguaccc ccggauccag agcaucaagg ugcaguucac agaguacaag 60
aaggagaagg gauuuauucu cacaagucag aaagaagaug agaucaugaa gguucagaac 120
aacucagua uuauuaauug cgacggauuc uaucucaua gccucaaagg cuauuucagc 180
caggagguga auaucagccu gcacuaccag aaggauagg aaccucucu ucagcugaaa 240
aaaguccgcu cugugaauuc ccucaugguc gcuucccuga ccuacaagga uaaaguuuau 300
uugaacguua caacagauaa uacaucgcug gacgacuucc augugaaugg uggcgaacua 360
auucuaauac accaaaaucc aggcgaauuu uguguccuu 399

<210> 202
<211> 399
<212> RNA
<213> Artificial Sequence

<220>
<223> Codon-optimized sequence 5 for ENSP 439704

<400> 202
augguaucac auagauaccc acguauuca agcauuuagg ugcaguucac agaguacaaa 60
aaggagaagg guuucuuacu gacgucacag aaggaggacg agauaaugaa ggugcagaau 120
aauguguga ucaucaauug ugauggauuc uauuugauca gccucaaagg uuauuucua 180
caggaaguga acauuucccu gcacuaccag aaggacgaag agccuuuguu ucagcugaag 240

aaggugcgcgcag cagugaacag uuugauggua gccucccuaa cuuauaaaga uaaaguuuau 300
 cugaacguga caaccgauaa cacaucccug gacgacuuuc acgucaaugg aggugaguua 360
 auccugaucc aucagaaucc cggagaaauuc ugcguucuu 399

<210> 203
 <211> 2
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> GS linker

<220>
 <221> repeat_unit
 <222> (1)..(1)
 <223> G can be repeated n times, wherein n is 1 to 100

<220>
 <221> misc_feature
 <222> (1)..(2)
 <223> sequence can be repeated n times, wherein n is 1 to 100

<400> 203

Gly Ser
 1

<210> 204
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> GS linker

<220>
 <221> misc_feature
 <222> (1)..(5)
 <223> sequence can be repeated n times, wherein n is 1 to 5

<400> 204

Gly Gly Gly Gly Ser
 1 5

<210> 205
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>

<223> GS linker

<400> 205

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
1 5 10

<210> 206

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> GS linker

<400> 206

Gly Gly Ser Gly Gly Gly Gly Gly
1 5

<210> 207

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> GS linker

<400> 207

Gly Ser Gly Ser Gly Ser Gly Ser
1 5

<210> 208

<211> 1

<212> PRT

<213> Artificial Sequence

<220>

<223> Gly-rich linker

<220>

<221> misc_feature

<222> (1)..(1)

<223> sequence can be repeated n times, wherein n is 1 to 100

<400> 208

Gly

1

<210> 209

<211> 5

<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<220>
<221> VARIANT
<222> (1)..(5)
<223> sequence can be repeated n times, wherein n is 1 to 100

<400> 209

Glu Ala Ala Ala Lys
1 5

<210> 210
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 210

Gly Gly Gly Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 211
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 211

Gly Ser Gly Ser Gly Ser
1 5

<210> 212
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 212

Gly Gly Gly Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly
1 5 10 15

<210> 213
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 213

Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
1 5 10

<210> 214
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 214

Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
1 5 10

<210> 215
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 215

Gly Gly Ser Gly Gly
1 5

<210> 216
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 216

Gly Ser Gly Ser Gly Ser Gly Ser
1 5

<210> 217
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 217

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
1 5 10 15

Gly Gly

<210> 218
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 218

Ala Ala Gly Ala Ala Thr Ala Ala
1 5

<210> 219
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 219

Gly Gly Ser Ser Gly
1 5

<210> 220
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 220

Gly Ser Gly Gly Gly Thr Gly Gly Gly Ser Gly
1 5 10

<210> 221
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 221

Gly Ser Gly Ser Gly Ser Gly Ser Gly Gly Ser Gly
1 5 10

<210> 222
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 222

Gly Ser Gly Gly Ser Gly Ser Gly Gly Ser Gly Gly Ser Gly
1 5 10

<210> 223
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> linker

<400> 223

Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser
1 5 10

<210> 224
<211> 6
<212> DNA
<213> Artificial Sequence

<220>
<223> restriction site motif for XbaI

<400> 224
tctaga

6

<210> 225
<211> 6

<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	restriction site motif for EcoRI	
<400>	225	
	gaattc	6
<210>	226	
<211>	5	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	restriction site motif for EcoRII	
<400>	226	
	ccwgg	5
<210>	227	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	restriction site motif for HindIII	
<400>	227	
	aagctt	6
<210>	228	
<211>	20	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	enzyme site in the T7 RNA polymerase	
<220>		
<221>	misc_feature	
<222>	(2)..(5)	
<223>	n may be any nucleotide	
<220>		
<221>	misc_feature	
<222>	(7)..(7)	
<223>	n may be any nucleotide	
<220>		
<221>	misc_feature	
<222>	(10)..(10)	
<223>	n may be any nucleotide	

<220>
<221> misc_feature
<222> (14)..(14)
<223> n may be any nucleotide

<220>
<221> misc_feature
<222> (16)..(17)
<223> n may be any nucleotide

<220>
<221> misc_feature
<222> (19)..(19)
<223> n may be any nucleotide

<400> 228
gnnnnwnocrn ctcncnnwnd

20

<210> 229
<211> 4
<212> DNA
<213> Artificial Sequence

<220>
<223> structural motif

<400> 229
ggggg

4

<210> 230
<211> 4
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 230
atcg

4

<210> 231
<211> 6
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 231
atcccg

6

<210> 232
<211> 9
<212> RNA

<213> Artificial Sequence

<220>

<223> Kozak sequence

<400> 232

ccrccaugg

9

<210> 233

<211> 6

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic polynucleotide

<220>

<221> misc_feature

<222> (1)..(6)

<223> guanine bases can be substituted by at least 1, at least 2, at least 3 or at least 4 adenine nucleotides

<400> 233

gggaga

6

<210> 234

<211> 6

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic polynucleotide

<220>

<221> misc_feature

<222> (1)..(6)

<223> guanine bases can be substituted by at least 1, at least 2, at least 3 or at least 4 cytosine bases

<400> 234

gggaga

6

<210> 235

<211> 6

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic polynucleotide

<220>

<221> misc_feature

<222> (1)..(6)
 <223> guanine bases can be substituted by at least 1, at least 2, at least 3 or at least 4 thymine

<400> 235
 gggaga

6

<210> 236
 <211> 1596
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_002

<400> 236
 atgtgccacc agcagctggt gatcagctgg ttcagcctgg tgttcctggc cagccccctg 60
 gtggccatct gggagctgaa gaaggacgtg tacgtggtgg agttggattg gtaccccgac 120
 gccccggcg agatggtggt gctgacctgc gacacccccg aggaggacgg catcacctgg 180
 accctggacc agagcagcga ggtgctgggc agcggcaaga ccctgaccat ccaggtgaag 240
 gagttcggcg acgccggcca gtacacctgc cacaagggcg gcgaggtgct gagccacagc 300
 ctgctgctgc tgcacaagaa ggaggacggc atctggagca ccgacatcct gaaggaccag 360
 aaggagccca agaacaagac cttcctgaga tgcgaggcca agaactacag cggcagattc 420
 acctgctggt ggctgaccac catcagcacc gacctgacct tcagcgtgaa gagcagcaga 480
 ggcagcagcg acccccaggg cgtgacctgc ggcgccgcca ccctgagcgc cgagagagtg 540
 agaggcgaca acaaggagta cgagtacagc gtggagtgcc aggaagatag cgctgcccc 600
 gccgccgagg agagcctgcc catcgagggtg atggtggacg ccgtgcacaa gctgaagtac 660
 gagaactaca ccagcagctt cttcatcaga gatatcatca agcccgaccc cccaagaac 720
 ctgcagctga agccccctgaa gaacagccgg caggtggagg tgagctggga gtaccccgac 780
 acctggagca cccccacag ctacttcagc ctgaccttct gcgtgcaggt gcagggcaag 840
 agcaagagag agaagaaaga tagagtgttc accgacaaga ccagcgccac cgtgatctgc 900
 agaaagaacg ccagcatcag cgtgagagcc caagatagat actacagcag cagctggagc 960
 gagtgggcca gcgtgccctg cagcggcggc ggcggcggcg gcagcagaaa cctgcccgtg 1020
 gccacccccg accccggcat gttcccctgc ctgcaccaca gccagaacct gctgagagcc 1080
 gtgagcaaca tgctgcagaa ggcccggcag accctggagt tctaccctg caccagcgag 1140
 gagatcgacc acgaagatat caccaaagat aagaccagca ccgtggaggc ctgcctgccc 1200
 ctggagctga ccaagaacga gagctgcctg aacagcagag agaccagctt catcaccaac 1260

ggcagctgcc tggccagcag aaagaccagc ttcattgatgg ccctgtgcct gagcagcatc	1320
tacgaggacc tgaagatgta ccaggtggag ttcaagacca tgaacgcca gctgctgatg	1380
gacccaagc ggcagatctt cctggaccag aacatgctgg ccgtgatcga cgagctgatg	1440
caggccctga acttcaacag cgagaccgtg cccagaaga gcagcctgga ggagcccgac	1500
ttctacaaga ccaagatcaa gctgtgcatc ctgctgcacg ccttcagaat cagagccgtg	1560
accatcgaca gactgatgag ctacctgaac gccagc	1596

<210> 237
 <211> 1596
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> hIL12AB_002

<400> 237	
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gccccggcg agaugguggu gcugaccugc gacacccccg aggaggacgg caucaccugg	180
accuggacc agagcagcga ggugcugggc agcggcaaga ccugaccau ccaggugaag	240
gaguucggcg acgccggcca guacaccugc cacaagggcg gcgaggugcu gagccacagc	300
cugcugcugc ugcacaagaa ggaggacggc aucuggagca ccgacauccu gaaggaccag	360
aaggagccca agaacaagac cuuccugaga ugcgaggcca agaacuacag cggcagauuc	420
accugcuggu ggcugaccac caucagcacc gaccugaccu ucagcgugaa gagcagcaga	480
ggcagcagcg acccccaggg cgugaccugc ggcgccgcca ccugagcgc cgagagagug	540
agaggcgaca acaaggagua cgaguacagc guggagugcc aggaagauag cgccugcccc	600
gccgccgagg agagccugcc caucgaggug augguggacg ccgugcaca gcugaaguac	660
gagaacuaca ccagcagcuu cuucaucaga gauaucauca agcccgaccc cccaagaac	720
cugcagcuga agccccugaa gaacagccgg cagguggagg ugagcuggga guaccccgac	780
accuggagca cccccacag cuacuucagc cugaccuucu gcgugcaggu gcagggcaag	840
agcaagagag agaagaaaga uagaguguuc accgacaaga ccagcgccac cgugaucugc	900
agaaagaacg ccagcaucag cgugagagcc caagauagau acuacagcag cagcuggagc	960
gagugggcca gcgugcccug cagcggcggc ggcggcggcg gcagcagaaa ccugcccug	1020
gccacccccg accccggcau guuccccugc cugcaccaca gccagaaccu gcugagagcc	1080

gugagcaaca ugcugcagaa ggcccggcag acccuggagu ucuaccccug caccagcgag	1140
gagaucgacc acgaagauau caccaaagau aagaccagca ccguggaggc cugccugccc	1200
cuggagcuga ccaagaacga gagcugccug aacagcagag agaccagcuu caucaccaac	1260
ggcagcugcc uggccagcag aaagaccagc uucaugaugg ccugugccu gagcagcauc	1320
uacgaggacc ugaagaugua ccagguggag uucaagacca ugaacgcca gcugcugaug	1380
gacccaagc ggcaucauu ccuggaccag acaugcugg ccgugaucga cgagcugaug	1440
caggcccuga acuucaacag cgagaccgug cccagaaga gcagccugga ggagcccgac	1500
uucuacaaga ccaagaucua gcugugcauc cugcugcacg ccuucagaau cagagccgug	1560
accaucgaca gagugaugag cuaccugaac gccagc	1596

<210> 238
 <211> 138
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> 3UTR-018 + miR-122-5p binding site

<400> 238	
uaauaggcug gagccucggu ggccaugcuu cuugcccccuu gggccucucc ccagcccuc	60
cuccccuucc ugcacccgua cccccaaac accauuguca cacuccagug gucuugaau	120
aaagucugag ugggcggc	138

<210> 239
 <211> 138
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> 3UTR-018 + miR-122-3p binding site

<400> 239	
uaauaggcug gagccucggu ggccaugcuu cuugcccccuu gggccucucc ccagcccuc	60
cuccccuucc ugcacccgua ccccuauuu agugugauaa uggcguugug gucuugaau	120
aaagucugag ugggcggc	138

<210> 240
 <211> 141
 <212> RNA
 <213> Artificial Sequence

<220>

<223> 3UTR-019 + miR-122 binding site

<400> 240

ugauaaauagg cuggagccuc gguggccaug cuucuugccc cuugggccuc cccccagccc 60
cuccucuccu uccugcaccc guacccccca aacaccuug ucacacucca guggucuug 120
aaauaaagucu gagugggcgg c 141

<210> 241

<211> 1817

<212> RNA

<213> Artificial Sequence

<220>

<223> mIL12_miR122

<400> 241

gggaaauaag agagaaaaga agaguaagaa gaaauauaag agccaccaug uguccucaga 60
agcuaaccuau cuccugguuu gccaucguuu ugcugguguc uccacucaug gccauguggg 120
agcuggagaa agacguuuau guuguagagg uggacuggac ucccgaugcc ccuggagaaa 180
cagugaaccu caccugugac acgccugaag aagaugacau caccuggacc ucagaccaga 240
gacauggagu cauaggcucu ggaaagaccc ugaccaucac ugucaaagag uuccuagaug 300
cuggccagua caccugccac aaaggaggcg agacucugag ccacucacau cugcugcucc 360
acaagaagga aaauaggauu ugguccacug aaauuuuaaa aaauuucaaa aacaagacuu 420
uccugaagug ugaagcacca aaauacuccg gacgguucac gugcucaugg cuggugcaaa 480
gaaacaugga cuugaaguuc aacaucaaga gcaguagcag uccccugac ucucgggcag 540
ugacaugugg aauggcgucu cugucugcag agaaggucac acuggaccaa agggacuau 600
agaaguauuc aguguccugc caggaggau 660
ucaccugccc aacugccgag gagaccugc 720
ccauugaacu ggcguuggaa gcacggcagc agaauaaaaua ugagaacuac agcaccagcu 780
ucuucaucag ggacaucauc aaaccagacc cgcccaagaa cuugcagaug aagccuuuga 840
agaacucaca gguggagguc agcugggagu acccugacuc cuggagcacu ccccauuccu 900
acuucucccu caaguucuuu guucgaaucc agcgcaagaa agaaaagaug aaggagacag 960
aggaggggug uaaccagaaa ggugcguucc ucguagagaa gacaucuacc gaaguccaau 1020
gcaaaggcgg gaugucugc gugcaagcuc aggaucgcuu uuacaauucc ucaugcagca 1080
agugggcaug uguucccugc aggguccgau ccggaggcgg agggagcggg gccggaggga 1140
gcggaggcgg agggagcagg gucauuccag ucucuggacc ugccaggugu cuuagccagu 1200
cccgaaaccu gcugaagacc acagaugaca uggugaagac ggccagagaa aaacugaaac

auuauuccug cacugcugaa gacaucgauc augaagacau cacacgggac caaaccagca	1260
cauugaagac cuguuuacca cuggaacuac acaagaacga gaguugccug gcuacuagag	1320
agacuucuuc cacaacaaga gggagcugcc ugccccaca gaagacgucu uugaugauga	1380
cccugugccu ugguagcauc uaugaggacu ugaagaugua ccagacagag uuccaggcca	1440
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