SEQUENCE LISTING

<110> TOLLNINE, INC.

<120> IMMUNOMODULATING POLYNUCLEOTIDE CONJUGATES AND METHODS OF USE

<130> 18649-20003.40

<140> Not Yet Assigned
<141> Concurrently Herewith

<150> US 62/747,611
<151> 2018-10-18

<150> US 62/747,070
<151> 2018-10-17

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<400> 162
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<210> 169
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<210> 170
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<400> 171
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<210> 173
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<210> 175
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<400> 175
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<210> 176
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<400> 177
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<210> 179
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<210> 183
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<210> 184
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<400> 184

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<210> 185
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<220>
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<400> 185
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<210> 186
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<400> 186
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<210> 187
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<400> 187
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<210> 188
<211> 14
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<400> 188
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<400> 189
ucgtcgtgtc gtt 13

<210> 190
<211> 12
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<210> 191
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<220>
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<222> 11
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<400> 191
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<210> 192
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<220>
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<220>
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<220>
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<220>
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<222> 23
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<400> 192
ugctgctttt gtgcttttgt gctt 24

<210> 193
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<212> DNA
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<220>
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<222> (1)..(20)
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<220>
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<220>
<221> misc_feature
<222> 20
<223> modified by C3 spacer (-(CH2)3-OH) (3' phosphate)

<400> 193
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<210> 194
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<213> Artificial Sequence

<220>
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<220>
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<220>
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<400> 194
tccatgacgt tcctgacgtt 20

<210> 195
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<212> DNA
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<220>
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<222> 20
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<400> 195
tccatgacgt tcctgacgtt 20

<210> 196
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<212> DNA
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<220>
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<220>
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<222> 20
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<400> 196
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<210> 197
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<220>

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<400> 197
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<210> 198
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<400> 207

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<400> 210
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<210> 212
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<400> 218

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<210> 233
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<212> DNA
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<220>
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<223> nucleoside-3'-phosphate

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<212> DNA
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<210> 235
<211> 16
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<220>
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<222> 16
<223> nucleoside-3'-phosphate

<220>
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<210> 236
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<220>
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<223> nucleoside-3'-phosphate

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<210> 237
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<220>
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<223> nucleoside-3'-phosphate

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<221> misc_feature
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<220>
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<210> 239
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<222> 1
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<223> nucleoside-3'-phosphorothioate

<220>
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<220>
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<400> 240
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<210> 241
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<220>
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<222> 13
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<400> 241
ucgtcgtgtc gtt 13

<210> 242
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<220>
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<400> 242
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<210> 243
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<210> 244
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<400> 244
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<210> 245
<211> 13
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<220>
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<210> 247
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<210> 248
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<222> 13
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<220>
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<221> misc_feature
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<400> 258
ucgtcgtgtc gtt 13

<210> 259
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<220>
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<220>
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<400> 260
ucgtcgtgtc gtt 13

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<222> 12
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<220>
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<222> 13
<223> contains a 2'-OMe-modified ribose

<220>
<221> misc_feature
<222> 13
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<400> 261
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<210> 262
<211> 13
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<220>
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<220>

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<220>
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<222> 1, 4
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<210> 263
<211> 13
<212> DNA
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ucgtcgtguc gtt 13

<210> 264
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<223> 2'-fluoronucleotide

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<210> 265
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<210> 266
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cgtcgtgtcg tt 12

<210> 268
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acgacgtgac gtt 13

<210> 278
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<210> 296
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<222> 14
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<210> 299
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<210> 300
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<221> misc_feature
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<400> 301
tcgucgtgtc gtt 13

<210> 302
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tcgucgtgtc gtt 13

<210> 303
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<222> 7
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<400> 303
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<210> 304
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<220>
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<210> 305
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<210> 307
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<222> 13
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<210> 310
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<223> dT PEG2-NH2 triester

<220>
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<210> 311
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<210> 312
<211> 13
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<213> Artificial Sequence

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<222> 13
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tcgucgtgtc gtt 13

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<222> 14
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<400> 313
tucgtcgtga cgtt 14

<210> 314
<211> 14
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<222> 14
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<400> 314
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<210> 315
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<222> 1
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<400> 315
ucgtcgtgac gtt 13

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<222> 14
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<400> 316

uucgtcgtga cgtt 14

<210> 317
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<222> 9
<223> 5-iodo-2'-deoxyuridine

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<400> 317
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<210> 318
<211> 13
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<400> 318
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<210> 319
<211> 13
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<223> 5-iodo-2'-deoxyuridine

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<220>
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<400> 319
ucgacgtguc gtt 13

<210> 320
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<220>
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<400> 320
ucgtccatga cgtt 14

<210> 321
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<400> 321

ucgtccatgu cgtt 14

<210> 322
<211> 14
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<222> 10
<223> 5-iodo-2'-deoxyuridine

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<400> 322
tcgtccatgu cgtt 14

<210> 323
<211> 13
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<220>
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<220>
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<400> 323
ucgtcgtgac gtt 13

<210> 324
<211> 14
<212> DNA
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<400> 324
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<210> 325
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<400> 325
tgucgttcct tt 12

<210> 326
<211> 14
<212> DNA
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<220>

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<400> 326
tatgucgttc cttt 14

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<400> 327
tccatgacgt tccttt 16

<210> 328
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<222> 13
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<400> 328
ugctgctgag ctt 13

<210> 329
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<222> 13
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<400> 329
ugcagctgag ctt 13

<210> 330
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<220>
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<222> 13
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<400> 330
tcgtcgtgtc gtt 13

<210> 331
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<400> 331
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<220>
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<220>
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<220>
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<220>
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<210> 335
<211> 13
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<220>
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<400> 338
tatgugcttc cttt 14

<210> 339
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<222> 1,3,5,6,7,8,9,10,11,12,13
<223> nucleoside-3'-phosphorothioate

<220>
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<222> 1
<223> 5-iodo-2'-deoxyuridine

<220>

<221> misc_feature
<222> 2, 4
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 2
<223> cytidine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
<221> misc_feature
<222> 13
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<400> 371
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<210> 372
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<220>
<221> misc_feature
<222> 1,2,3,5,6,7,8,9,10,11,13
<223> nucleoside-3'-phosphorothioate

<220>
<221> misc_feature
<222> 1
<223> 5-iodo-2'-deoxyuridine

<220>
<221> misc_feature
<222> 4, 12
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 4
<223> thymidine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 12
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
<221> misc_feature
<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 372
ucgtcgtgtc gtt 13

<210> 373
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
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<223> nucleoside-3'-phosphorothioate

<220>
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<222> 2
<223> 5-iodo-2'-deoxyuridine

<220>
<221> misc_feature
<222> 14
<223> modified by X5-C3 as described in Table 2 of the specification

<400> 373
tucgtcgtga cgtt 14

<210> 374
<211> 14
<212> DNA
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<220>
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<220>
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<223> nucleoside-3'-phosphorothioate

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<222> 2
<223> 5-iodo-2'-deoxyuridine

<220>
<221> misc_feature
<222> 13,14
<223> linked by X5-DBCO as described in Table 2 of the specification

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<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 374
tucgtcgtga cgtt 14

<210> 375
<211> 14
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<213> Artificial Sequence

<220>
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<222> 2
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<220>
<221> misc_feature
<222> 12, 13
<223> linked by X5-DBCO as described in Table 2 of the specification

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<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 375
tucgtcgtga cgtt 14

<210> 376
<211> 14
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<220>
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<222> 2
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<220>
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<222> 11, 12
<223> linked by X5-DBCO as described in Table 2 of the specification

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<400> 376
tucgtcgtga cgtt 14

<210> 377
<211> 14
<212> DNA
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<220>
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<223> nucleoside-3'-phosphorothioate

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<220>
<221> misc_feature
<222> 10, 11
<223> linked by X5-DBCO as described in Table 2 of the specification

<220>
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<222> 14
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 377
tucgtcgtga cgtt 14

<210> 378
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
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<223> nucleoside-3'-phosphorothioate

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<222> 2
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<221> misc_feature
<222> 9, 10
<223> linked by X5-DBCO as described in Table 2 of the specification

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<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

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tucgtcgtga cgtt 14

<210> 379
<211> 14
<212> DNA
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<220>

<223> Synthetic Construct

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<221> misc_feature
<222> 8, 9
<223> linked by X5-DBCO as described in Table 2 of the specification

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<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 379
tucgtcgtga cgtt 14

<210> 380
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
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<223> 5-iodo-2'-deoxyuridine

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<221> misc_feature
<222> 7, 8
<223> linked by X5-DBCO as described in Table 2 of the specification

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<400> 380
tucgtcgtga cgtt 14

<210> 381
<211> 14
<212> DNA
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<220>
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<223> nucleoside-3'-phosphorothioate

<220>
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<222> 2
<223> 5-iodo-2'-deoxyuridine

<220>
<221> misc_feature
<222> 6, 7
<223> linked by X5-DBCO as described in Table 2 of the specification

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<222> 14
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 381
tucgtcgtga cgtt 14

<210> 382
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
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<223> nucleoside-3'-phosphorothioate

<220>
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<222> 2
<223> 5-iodo-2'-deoxyuridine

<220>
<221> misc_feature
<222> 5, 6
<223> linked by X5-DBCO as described in Table 2 of the specification

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<222> 14
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 382
tucgtcgtga cgtt 14

<210> 383
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
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<222> 2
<223> 5-iodo-2'-deoxyuridine

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<221> misc_feature
<222> 4, 5
<223> linked by X5-DBCO as described in Table 2 of the specification

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<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 383
tucgtcgtga cgtt 14

<210> 384

<211> 14
<212> DNA
<213> Artificial Sequence

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<220>
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<222> 3, 4
<223> linked by X5-DBCO as described in Table 2 of the specification

<220>
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<400> 384
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<210> 385
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
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<222> 2, 3
<223> linked by X5-DBCO as described in Table 2 of the specification

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<400> 385
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<210> 386
<211> 14
<212> DNA
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<220>
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<222> 2
<223> 5-iodo-2'-deoxyuridine

<220>
<221> misc_feature
<222> 14
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 386
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<210> 387
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
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<222> (1)..(14)
<223> nucleoside-3'-phosphorothioate

<220>
<221> misc_feature
<222> 1
<223> modified by X5-DBCO as described in Table 2 of the specification

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<222> 2
<223> 5-iodo-2'-deoxyuridine

<220>
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<222> 14
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 387
tucgtcgtga cgtt 14

<210> 388
<211> 13
<212> DNA
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<220>
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<223> nucleoside-3'-phosphorothioate

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<223> linked by X5-DBCO as described in Table 2 of the specification

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<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 388
tucgcgtgac gtt 13

<210> 389

<211> 13
<212> DNA
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<220>
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<220>
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<222> (1)..(13)
<223> nucleoside-3'-phosphorothioate

<220>
<221> misc_feature
<222> 4,5
<223> linked by X5-DBCO as described in
Table 2 of the specification

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<400> 389
tucgcgtgac gtt 13

<210> 390
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
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<223> nucleoside-3'-phosphate

<220>
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<220>
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<222> 2,3
<223> nucleoside-3'-phosphorothioate

<220>

<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
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<222> (5)..(13)
<223> nucleoside-3'-phosphorothioate

<220>
<221> misc_feature
<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 390
ucgtcgtgtc gtt 13

<210> 391
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
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<222> 1,2,4
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 1
<223> 5-iodouridine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 2
<223> cytidine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 3,5,6,7,8,9,10,11,12,13
<223> nucleoside-3'-phosphorothioate

<220>
<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
<221> misc_feature
<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 391
ucgtcgtgtc gtt 13

<210> 392
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
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<222> (1)..(4)
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 1
<223> 5-iodouridine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 2
<223> cytidine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 3
<223> guanosine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
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<222> (5)..(13)
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<220>
<221> misc_feature
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<400> 392
ucgtcgtgtc gtt 13

<210> 393
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<220>
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<220>
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<222> 1
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<220>
<221> misc_feature
<222> 4,10,11,12,13
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
<221> misc_feature
<222> 10
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<220>
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<222> 11
<223> guanosine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 12,13
<223> thymidine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 13

<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 393
ucgtcgtgtc gtt 13

<210> 394
<211> 13
<212> DNA
<213> Artificial Sequence

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<220>
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<222> 1
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<220>
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<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

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<222> 2,10
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<220>
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<222> 3,11
<223> guanosine having a 3' ethyl triester

<220>
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<222> 12,13
<223> thymidine having a 3' ethyl triester

<220>
<221> misc_feature

<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 394
ucgtcgtgtc gtt 13

<210> 395
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
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<223> nucleoside-3'-phosphate

<220>
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<222> 1
<223> 5-iodouridine having a 3' ethyl triester

<220>
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<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
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<222> 2,5,10
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<220>
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<222> 3,6,8,11
<223> guanosine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 7,9,12,13
<223> thymidine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 13
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<400> 395

ucgtcgtgtc gtt 13

<210> 396
<211> 13
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<223> nucleoside-3'-phosphorothioate

<220>
<221> misc_feature
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<223> 5-iodo-2'-deoxyuridine

<220>
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<222> 2,4,5,10
<223> nucleoside-3'-phosphate

<220>
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<222> 2,5,10
<223> cytidine having a 3' ethyl triester

<220>
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<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
<221> misc_feature
<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 396
ucgtcgtgtc gtt 13

<210> 397
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<220>
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<220>
<221> misc_feature
<222> 4,6,8,11
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
<221> misc_feature
<222> 6,8,11
<223> guanosine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 13
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<400> 397
ucgtcgtgtc gtt 13

<210> 398
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<220>
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<223> 5-iodo-2'-deoxyuridine

<220>
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<222> 4,7,9,12
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
<221> misc_feature
<222> 7,9,12
<223> thymidine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 398
ucgtcgtgtc gtt 13

<210> 399
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<220>
<221> misc_feature
<222> 1
<223> 5-iodo-2'-deoxyuridine

<220>
<221> misc_feature
<222> 2,4,7,9,12
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature

<222> 2
<223> cytidine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
<221> misc_feature
<222> 7,9,12
<223> thymidine having a 3' ethyl triester

<220>
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<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 399
ucgtcgtgtc gtt 13

<210> 400
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<223> nucleoside-3'-phosphorothioate

<220>
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<222> 4, 7, 9, 12
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 1
<223> 5-iodo-2'-deoxyuridine

<220>
<221> misc_feature
<222> 4, 7, 9
<223> thymidine having a 3' ethyl triester

<220>

<221> misc_feature
<222> 12
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
<221> misc_feature
<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

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ucgtcgtgtc gtt 13

<210> 401
<211> 13
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<220>
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<220>
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<222> 1, 3, 5, 6, 8, 10, 11, 13
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<220>
<221> misc_feature
<222> 2, 4, 7, 9, 12
<223> nucleoside-3'-phosphate

<220>
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<222> 1
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<220>
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<222> 2
<223> cytidine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 4, 7, 9
<223> thymidine having a 3' ethyl triester

<220>
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<222> 12
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
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<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

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ucgtcgtgtc gtt 13

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<220>
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<220>
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<222> 1
<223> 5-iodo-2'-deoxyuridine

<220>
<221> misc_feature
<222> 2, 4, 11
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 2
<223> cytidine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
<221> misc_feature
<222> 11
<223> guanosine having a 3' ethyl triester

<220>
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<400> 402
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<210> 403
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<220>
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<223> nucleoside-3'-phosphate

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<222> 2, 10
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<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
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<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

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<210> 404
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<222> 2, 4, 13
<223> nucleoside-3'-phosphate

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<222> 14
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<210> 405
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<223> nucleoside-3'-phosphate

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<222> 8, 13
<223> thymidine having a 3' ethyl triester

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<222> 14
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<210> 406
<211> 14
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<220>
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<223> nucleoside-3'-phosphate

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<222> 7, 13
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<222> 2, 4, 12
<223> nucleoside-3'-phosphate

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<221> misc_feature
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<223> cytidine having a 3' ethyl triester

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<220>
<221> misc_feature
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<400> 407
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<210> 408
<211> 13
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<220>
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<222> 1
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<222> 2, 4, 12
<223> nucleoside-3'-phosphate

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<222> 6,7
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<220>
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<222> 13
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<400> 408
ucgtcgtgtc gtt 13

<210> 409
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<220>
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<223> 5-iodo-2'-deoxyuridine

<220>
<221> misc_feature
<222> 2, 4, 8, 13
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 2
<223> cytidine having a 3' ethyl triester

<220>
<221> misc_feature
<222> 4
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<400> 409
ucgtcgttgt cgtt 14

<210> 410
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<220>
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<220>
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<222> 2, 4, 12
<223> nucleoside-3'-phosphate

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<222> 2
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<400> 410
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<220>
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<211> 13
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<223> nucleoside-3'-phosphate

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<400> 412
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<210> 413
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<220>
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<222> 4
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<400> 413
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<220>
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ucgtcgtgtc gtt 13

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<220>
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<220>
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<223> nucleoside-3'-phosphate

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<220>
<221> misc_feature
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<400> 415
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<210> 416
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<220>
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<220>
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<223> nucleoside-3'-phosphate

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<400> 416
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<210> 417
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<210> 418
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<400> 419
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<220>
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Table 2 of the specification

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<220>
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<220>
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Table 2 of the specification

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<213> Artificial Sequence

<220>
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<220>
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<210> 423
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<223> nucleoside-3'-phosphorothioate

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<223> 5-iodo-2'-deoxyuridine

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<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

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Table 2 of the specification

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<210> 424
<211> 13
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<220>
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<220>
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<222> 1
<223> 5-iodo-2'-deoxyuridine

<220>

<221> misc_feature
<222> 4
<223> nucleoside-3'-phosphate

<220>
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<223> nucleoside having a 3' PEG2-NH2 triester (N1)

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<223> modified by X3 abasic spacer described in
Table 2 of the specification

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<210> 425
<211> 13
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<220>
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<222> 4
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
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<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

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ucgtcgtgtc gtt 13

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<211> 13
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<220>
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<223> nucleoside-3'-phosphorothioate

<220>
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<220>
<221> misc_feature
<222> 4
<223> nucleoside-3'-phosphate

<220>
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<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

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<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 426
ccgtcgtgtc gtt 13

<210> 427
<211> 13
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<220>
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<220>
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<222> 4
<223> nucleoside-3'-phosphate

<220>
<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

<220>
<221> misc_feature
<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

<400> 427
ucgtcgtgtc gtt 13

<210> 428
<211> 13
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<223> nucleoside-3'-phosphate

<220>
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<220>

<221> misc_feature
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<223> nucleoside-3'-phosphorothioate

<220>
<221> misc_feature
<222> 4
<223> nucleoside having a 3' PEG2-NH2 triester (N1)

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<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphate)

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ucgtcgtgtc gtt 13

<210> 429
<211> 13
<212> DNA
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<220>
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tucgacgtt 9

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<222> 5
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<400> 456
tacgt 5

<210> 457
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tucgt 5

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tucgucgtga cgtt 14

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<400> 468
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<210> 469
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<220>
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<222> 5
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<400> 469
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<222> 4
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<400> 470
ucgtcgtgtc g 11

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<211> 9
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<400> 471
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tucgtcgtga cgtt 14

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<222> 13
<223> 2'-OMOE thymidine

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<222> 13
<223> modified by C3 spacer (-(CH2)3-OH) (3'-phosphorothioate)

<400> 487
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<222> 12, 13
<223> 2'-OMOE thymidine

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<400> 488
ucgtcgtgtc gtt 13

<210> 489
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<222> 13
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<400> 489
ucgtcgtgtc gtt 13

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<211> 120
<212> PRT
<213> Artificial Sequence

<220>
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Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Asn Phe
            20                  25                  30
Ala Met Thr Trp Val Arg Gln Ala Pro Gly Glu Gly Leu Glu Trp Val
        35                  40                  45
Ser Thr Ile Gly Ser Gly Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
    50                  55                  60
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
65                  70                  75                  80
Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
                85                  90                  95
Asp Ser Thr Val Ser Trp Ser Gly Asp Phe Phe Asp Tyr Trp Gly Leu
            100                 105                 110
Gly Thr Leu Val Thr Val Ser Ser
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<210> 491
<211> 120
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<220>
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<400> 491

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Asn Phe
            20                  25                  30
Ala Val Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Thr Ile Gly Ser Gly Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
    50                  55                  60
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
65                  70                  75                  80
Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
                85                  90                  95
Asp Ser Thr Val Ser Trp Ser Gly Asp Phe Phe Asp Tyr Trp Gly Gln
            100                 105                 110
Gly Thr Leu Val Thr Val Ser Ser
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<223> Synthetic Construct

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Asn Phe
            20   25   30
Ala Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Thr Ile Gly Ser Gly Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
    50   55   60
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
65   70   75   80
Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
                85   90   95
Asp Ser Thr Val Ser Trp Ser Gly Asp Phe Phe Asp Tyr Trp Gly Gln
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 493
<211> 120
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Asn Phe
            20   25   30
Ala Leu Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Thr Ile Gly Ser Gly Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
    50   55   60
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
65   70   75   80
Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
                85   90   95
Asp Ser Thr Val Ser Trp Ser Gly Asp Phe Phe Asp Tyr Trp Gly Gln
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 494
<211> 120

<212> PRT
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 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Asn Phe
            20   25   30
Ala Leu Thr Trp Val Arg Gln Ala Pro Gly Glu Gly Leu Glu Trp Val
        35   40   45
Ser Thr Ile Gly Ser Gly Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
    50   55   60
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
65   70   75   80
Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
                85   90   95
Asp Ser Thr Val Ser Trp Ser Gly Asp Phe Phe Asp Tyr Trp Gly Leu
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 495
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 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Asn Phe
            20   25   30
Ala Val Thr Trp Val Arg Gln Ala Pro Gly Glu Gly Leu Glu Trp Val
        35   40   45
Ser Thr Ile Gly Ser Gly Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
    50   55   60
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
65   70   75   80
Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
                85   90   95
Asp Ser Thr Val Ser Trp Ser Gly Asp Phe Phe Asp Tyr Trp Gly Leu
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 496
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 496
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Ser Pro Gly
 1   5   10   15
Glu Arg Ala Thr Phe Ser Cys Arg Ala Ser Gln Asn Val Lys Asn Asp
            20   25   30
Leu Ala Trp Tyr Gln Gln Arg Pro Gly Gln Ala Pro Arg Leu Leu Ile
        35   40   45
Tyr Ala Ala Arg Ile Arg Glu Thr Gly Ile Pro Glu Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Thr Ser Leu Gln Ser
65   70   75   80
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Asp Trp Pro Pro
                85   90   95
Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 497
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 497
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Ser Pro Gly
 1   5   10   15
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Asn Val Lys Asn Asp
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
        35   40   45
Tyr Ala Ala Arg Ile Arg Glu Thr Gly Ile Pro Ala Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65   70   75   80
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Asp Trp Pro Pro
                85   90   95
Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 498
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 498
Gly Phe Ser Phe Ser Asn Phe Ala Met Thr
 1   5   10

<210> 499
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 499
Gly Phe Ser Phe Ser Asn Phe Ala Val Thr
 1   5   10

<210> 500
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 500
Gly Phe Ser Phe Ser Asn Phe Ala Leu Thr
 1   5   10

<210> 501
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 501

Thr Ile Gly Ser Gly Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
 1   5   10   15

<210> 502
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 502
Asp Ser Thr Val Ser Trp Ser Gly Asp Phe Phe Asp Tyr
 1   5   10

<210> 503
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 503
Arg Ala Ser Gln Asn Val Lys Asn Asp Leu Ala
 1   5   10

<210> 504
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 504
Ala Ala Arg Ile Arg Glu Thr
 1   5

<210> 505
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 505
Gln Gln Tyr Tyr Asp Trp Pro Pro Phe Thr
 1   5   10

<210> 506
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 506
Asp Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly Glu
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Ile Tyr
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Glu Gly Leu Glu Trp Val
        35   40   45
Ser Thr Ile Gly Ala Asp Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
    50   55   60
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
65   70   75   80
Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
                85   90   95
Asp Ser Thr Val Gly Trp Ser Gly Asp Phe Phe Asp Tyr Trp Gly Leu
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 507
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 507
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Ile Tyr
            20   25   30
Ala Val Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Thr Ile Gly Ala Asp Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
    50   55   60

```
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
65                  70                  75                  80
Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
                85                  90                  95
Asp Ser Thr Val Gly Trp Ser Gly Asp Phe Phe Asp Tyr Trp Gly Gln
            100                 105                 110
Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 508
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 508

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Ile Tyr
            20                  25                  30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Thr Ile Gly Ala Asp Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
    50                  55                  60
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
65                  70                  75                  80
Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
                85                  90                  95
Asp Ser Thr Val Gly Trp Ser Gly Asp Phe Phe Asp Tyr Trp Gly Gln
            100                 105                 110
Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 509
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 509

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Ser Ile Tyr
            20                  25                  30
```

```
Ala Leu Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Thr Ile Gly Ala Asp Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
    50                  55                  60
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
65                  70                  75                  80
Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
                85                  90                  95
Asp Ser Thr Val Gly Trp Ser Gly Asp Phe Phe Asp Tyr Trp Gly Gln
            100                 105                 110
Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 510
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 510

```
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Ser Pro Gly
 1               5                  10                  15
Glu Arg Val Thr Phe Ser Cys Arg Ala Ser Gln Asn Val Arg Ser Asp
            20                  25                  30
Ile Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
        35                  40                  45
Tyr Ala Ala Ser Ser Arg Asp Thr Gly Ile Pro Asp Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65                  70                  75                  80
Glu Asp Phe Gly Val Tyr Tyr Cys Gln Gln Tyr Tyr Asp Trp Pro Pro
                85                  90                  95
Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105
```

<210> 511
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 511

```
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Ser Pro Gly
 1               5                  10                  15
```

```
Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln Asn Val Arg Ser Asp
            20                  25                  30
Ile Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
        35                  40                  45
Tyr Ala Ala Ser Ser Arg Asp Thr Gly Ile Pro Ala Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65                  70                  75                  80
Glu Asp Phe Gly Val Tyr Tyr Cys Gln Gln Tyr Tyr Asp Trp Pro Pro
                85                  90                  95
Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105
```

<210> 512
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 512
```
Gly Phe Ser Phe Ser Ile Tyr Ala Met Ser
 1               5                  10
```

<210> 513
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 513
```
Gly Phe Ser Phe Ser Ile Tyr Ala Val Ser
 1               5                  10
```

<210> 514
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 514
```
Gly Phe Ser Phe Ser Ile Tyr Ala Leu Ser
```

1 5 10

<210> 515
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 515
Thr Ile Gly Ala Asp Asp Thr Tyr Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 516
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 516
Asp Ser Thr Val Gly Trp Ser Gly Asp Phe Phe Asp Tyr
1 5 10

<210> 517
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 517
Arg Ala Ser Gln Asn Val Arg Ser Asp Ile Ala
1 5 10

<210> 518
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 518
Ala Ala Ser Ser Arg Asp Thr
 1   5

<210> 519
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 519
Gln Gln Tyr Tyr Asp Trp Pro Pro Phe Thr
 1   5   10

<210> 520
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 520
Asp Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly Glu
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Asn
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Leu
        35   40   45
Ala Gly Ile Ser Ala Gly Gly Ser Asp Thr Tyr Tyr Pro Ala Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Thr Leu Thr Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Glu Thr Trp Asn His Leu Phe Asp Tyr Trp Gly Leu Gly Thr
            100   105   110
Leu Val Thr Val Ser Ser
        115

<210> 521
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 521
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Asn
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Gly Ile Ser Ala Gly Gly Ser Asp Thr Tyr Tyr Pro Ala Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Glu Thr Trp Asn His Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100   105   110
Leu Val Thr Val Ser Ser
        115

<210> 522
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 522
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Asn
            20   25   30
Ala Val Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Gly Ile Ser Ala Gly Gly Ser Asp Thr Tyr Tyr Pro Ala Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Glu Thr Trp Asn His Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100   105   110
Leu Val Thr Val Ser Ser
        115

<210> 523

<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 523
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Asn
            20   25   30
Ala Leu Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Gly Ile Ser Ala Gly Gly Ser Asp Thr Tyr Tyr Pro Ala Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Glu Thr Trp Asn His Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100   105   110
Leu Val Thr Val Ser Ser
        115

<210> 524
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 524
Ala Leu Thr Gln Pro Ala Ser Val Ser Ala Asn Pro Gly Glu Thr Val
 1   5   10   15
Lys Ile Ala Cys Ser Gly Gly Asp Tyr Tyr Ser Tyr Tyr Tyr Gly Trp
            20   25   30
Tyr Gln Gln Lys Ala Pro Gly Ser Ala Leu Val Thr Val Ile Tyr Ser
        35   40   45
Asp Asp Lys Arg Pro Ser Asp Ile Pro Ser Arg Phe Ser Gly Ser Ala
    50   55   60
Ser Gly Ser Thr Ala Thr Leu Thr Ile Thr Gly Val Arg Ala Glu Asp
65   70   75   80
Glu Ala Val Tyr Tyr Cys Gly Gly Tyr Asp Tyr Ser Thr Tyr Ala Asn
                85   90   95
Ala Phe Gly Ala Gly Thr Thr Leu Thr Val Leu
            100   105

<210> 525
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 525
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
 1   5   10   15
Thr Ala Arg Ile Thr Cys Ser Gly Gly Ser Tyr Ser Ser Tyr Tyr Tyr
            20   25   30
Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Thr Leu Ile Tyr
        35   40   45
Ser Asp Asp Lys Arg Pro Ser Asn Ile Pro Glu Arg Phe Ser Gly Ser
    50   55   60
Ser Ser Gly Thr Thr Val Thr Leu Thr Ile Ser Gly Val Gln Ala Glu
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Gly Gly Tyr Asp Gln Ser Ser Tyr Thr
                85   90   95
Asn Pro Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 526
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 526
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1   5   10   15
Lys Val Thr Ile Ser Cys Ser Gly Gly Ser Tyr Ser Ser Tyr Tyr Tyr
            20   25   30
Ala Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Thr Leu Ile Tyr
        35   40   45
Ser Asp Asp Lys Arg Pro Ser Asn Ile Pro Asp Arg Phe Ser Gly Ser
    50   55   60
Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln Thr Gly
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Gly Gly Tyr Asp Gln Ser Ser Tyr Thr
                85   90   95
Asn Pro Phe Gly Thr Gly Thr Lys Val Thr Val Leu
            100   105

<210> 527
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 527
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
 1   5   10   15
Thr Ala Arg Ile Thr Cys Ser Gly Gly Asp Tyr Tyr Ser Thr Tyr Tyr
            20   25   30
Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Thr Val Ile His
        35   40   45
Ser Asp Asp Lys Arg Pro Ser Asp Ile Pro Glu Arg Phe Ser Gly Ser
    50   55   60
Ser Ser Gly Thr Thr Val Thr Leu Thr Ile Ser Gly Val Gln Ala Glu
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Gly Gly Tyr Asp Gly Arg Thr Tyr Ile
                85   90   95
Asn Thr Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 528
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 528
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1   5   10   15
Lys Val Thr Ile Ser Cys Ser Gly Gly Asp Tyr Tyr Ser Thr Tyr Tyr
            20   25   30
Ala Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Thr Val Ile His
        35   40   45
Ser Asp Asp Lys Arg Pro Ser Asp Ile Pro Asp Arg Phe Ser Gly Ser
    50   55   60
Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln Thr Gly
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Gly Gly Tyr Asp Gly Arg Thr Tyr Ile
                85   90   95
Asn Thr Phe Gly Thr Gly Thr Lys Val Thr Val Leu
            100   105

<210> 529
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 529
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Ser Tyr
            20   25   30
Ser Ser Tyr Tyr Tyr Ala Trp Tyr Gln Gln His Pro Gly Lys Ala Pro
        35   40   45
Lys Thr Leu Ile Tyr Ser Asp Asp Lys Arg Pro Ser Asn Val Ser Asn
    50   55   60
Arg Phe Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser
65   70   75   80
Gly Leu Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Gly Tyr Asp
                85   90   95
Gln Ser Ser Tyr Thr Asn Pro Phe Gly Gly Gly Thr Lys Leu Thr Val
            100   105   110
Leu

<210> 530
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 530
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1   5   10   15
Lys Val Thr Ile Ser Cys Ser Gly Gly Asp Tyr Tyr Ser Tyr Tyr Tyr
            20   25   30
Gly Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Thr Val Ile Tyr
        35   40   45
Ser Asp Asp Lys Arg Pro Ser Asp Ile Pro Asp Arg Phe Ser Gly Ser
    50   55   60
Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln Thr Gly
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Gly Gly Tyr Asp Tyr Ser Thr Tyr Ala
                85   90   95
Asn Ala Phe Gly Thr Gly Thr Lys Val Thr Val Leu

100 105

<210> 531
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 531
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
1 5 10 15
Thr Ala Arg Ile Thr Cys Ser Gly Gly Ala Tyr Ser Ser Tyr Tyr Tyr
20 25 30
Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45
Ser Asp Ser Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60
Ser Ser Gly Thr Thr Val Thr Leu Thr Ile Ser Gly Val Gln Ala Glu
65 70 75 80
Asp Glu Ala Asp Tyr Tyr Cys Gly Gly Tyr Asp Gln Ser Ser Tyr Thr
85 90 95
Asn Pro Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 532
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 532
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
1 5 10 15
Thr Ala Arg Ile Thr Cys Ser Gly Gly Ala Tyr Ser Ser Tyr Tyr Tyr
20 25 30
Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45
Ser Asp Asp Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60
Ser Ser Gly Thr Thr Val Thr Leu Thr Ile Ser Gly Val Gln Ala Glu
65 70 75 80
Asp Glu Ala Asp Tyr Tyr Cys Gly Gly Tyr Asp Gln Ser Ser Tyr Thr
85 90 95
Asn Pro Phe Gly Gly Gly Thr Lys Leu Thr Val Leu

100 105

<210> 533
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 533
Gly Phe Thr Phe Ser Ser Asn Ala Leu Ser
1 5 10

<210> 534
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 534
Gly Phe Thr Phe Ser Ser Asn Ala Met Ser
1 5 10

<210> 535
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 535
Gly Phe Thr Phe Ser Ser Asn Ala Val Ser
1 5 10

<210> 536
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 536
Ile Ser Ala Gly Gly Ser Asp Thr
 1   5

<210> 537
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 537
Ala Arg Glu Thr Trp Asn His Leu Phe Asp Tyr
 1   5   10

<210> 538
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 538
Ser Gly Gly Asp Tyr Tyr Ser Tyr Tyr Tyr Gly
 1   5   10

<210> 539
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 539
Ser Gly Gly Ser Tyr Ser Ser Tyr Tyr Tyr Ala
 1   5   10

<210> 540
<211> 11
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 540
Ser Gly Gly Asp Tyr Tyr Ser Thr Tyr Tyr Ala
 1   5   10

<210> 541
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 541
Gly Ser Tyr Ser Ser Tyr Tyr Tyr Ala
 1   5

<210> 542
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 542
Ser Gly Gly Ala Tyr Ser Ser Tyr Tyr Tyr Ala
 1   5   10

<210> 543
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 543
Ser Asp Asp Lys Arg Pro Ser
 1   5

<210> 544
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 544
Gly Gly Tyr Asp Tyr Ser Thr Tyr Ala Asn Ala
 1   5   10

<210> 545
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 545
Gly Gly Tyr Asp Gln Ser Ser Tyr Thr Asn Pro
 1   5   10

<210> 546
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 546
Gly Gly Tyr Asp Gly Arg Thr Tyr Ile Asn Thr
 1   5   10

<210> 547
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 547
Asp Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly Glu
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Asp Met Asn Trp Val Arg Gln Ala Pro Gly Glu Gly Leu Glu Trp Val
        35   40   45

```
Ser Leu Ile Ser Gly Ser Gly Glu Ile Ile Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Lys Glu Asn Asn Arg Tyr Arg Phe Phe Asp Asp Trp Gly Leu Gly
            100                 105                 110
Thr Leu Val Thr Val Ser Ser
        115
```

<210> 548
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 548

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Asp Val Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Leu Ile Ser Gly Ser Gly Glu Ile Ile Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Lys Glu Asn Asn Arg Tyr Arg Phe Phe Asp Asp Trp Gly Gln Gly
            100                 105                 110
Thr Leu Val Thr Val Ser Ser
        115
```

<210> 549
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 549

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
```

```
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Asp Leu Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Leu Ile Ser Gly Ser Gly Glu Ile Ile Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Lys Glu Asn Asn Arg Tyr Arg Phe Phe Asp Asp Trp Gly Gln Gly
            100                 105                 110
Thr Leu Val Thr Val Ser Ser
        115
```

<210> 550
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 550

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Asp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Leu Ile Ser Gly Ser Gly Glu Ile Ile Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Lys Glu Asn Asn Arg Tyr Arg Phe Phe Asp Asp Trp Gly Gln Gly
            100                 105                 110
Thr Leu Val Thr Val Ser Ser
        115
```

<210> 551
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 551
Glu Thr Val Leu Thr Gln Ser Pro Gly Thr Leu Thr Leu Ser Pro Gly
 1   5   10   15
Glu Arg Ala Thr Leu Thr Cys Arg Ala Ser Gln Ser Val Tyr Thr Tyr
            20   25   30
Leu Ala Trp Tyr Gln Glu Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
        35   40   45
Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65   70   75   80
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Asp Arg Pro Pro
                85   90   95
Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 552
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 552
Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
 1   5   10   15
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Tyr Thr Tyr
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
        35   40   45
Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65   70   75   80
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Asp Arg Pro Pro
                85   90   95
Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 553
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 553
Glu Thr Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
 1   5   10   15
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Tyr Thr Tyr
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
        35   40   45
Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65   70   75   80
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Asp Arg Pro Pro
                85   90   95
Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 554
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 554
Gly Phe Thr Phe Ser Ser Tyr Asp Met Asn
 1   5   10

<210> 555
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 555
Gly Phe Thr Phe Ser Ser Tyr Asp Val Asn
 1   5   10

<210> 556
<211> 10
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 556
Gly Phe Thr Phe Ser Ser Tyr Asp Leu Asn
 1   5   10

<210> 557
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 557
Leu Ile Ser Gly Ser Gly Glu Ile Ile Tyr Tyr Ala Asp Ser Val Lys
 1   5   10   15
Gly

<210> 558
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 558
Glu Asn Asn Arg Tyr Arg Phe Phe Asp Asp
 1   5   10

<210> 559
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 559
Arg Ala Ser Gln Ser Val Tyr Thr Tyr Leu Ala
 1   5   10

<210> 560
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 560
Gly Ala Ser Ser Arg Ala Thr
 1   5

<210> 561
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 561
Gln Gln Tyr Tyr Asp Arg Pro Pro Leu Thr
 1   5   10

<210> 562
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 562
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Phe Gly Ser Ser Gly Asn Tyr Gly Leu Val
            20   25   30
Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu Met Ile Tyr
        35   40   45
Tyr Asn Asn Lys Arg Pro Ser Gly Val Ser Asn Arg Phe Ser Gly Ser
    50   55   60
Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Gly Ala Trp Glu Thr Gly Ser Ala Thr
                85   90   95
Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 563

<211> 103
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 563
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
 1   5   10   15
Thr Ala Ser Ile Thr Cys Phe Gly Ser Ser Gly Asn Tyr Gly Trp Tyr
            20   25   30
Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr Tyr Asn Asn
        35   40   45
Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser Asn Ser Gly
    50   55   60
Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met Asp Glu Ala
65   70   75   80
Asp Tyr Tyr Cys Gly Ala Trp Glu Thr Gly Ser Ala Thr Phe Gly Gly
                85   90   95
Gly Thr Lys Leu Thr Val Leu
            100

<210> 564
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 564
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1   5   10   15
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20   25   30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35   40   45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50   55   60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65   70   75   80
Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85   90   95
Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100   105   110
Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
        115   120   125
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys

```
    130                 135                 140
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145                 150                 155                 160
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195                 200                 205
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
225                 230                 235                 240
Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305                 310                 315                 320
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325                 330
```

<210> 565
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 565

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1               5                  10                  15
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65                  70                  75                  80
Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95
Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100                 105                 110
```

```
Pro Ala Pro Glu Ala Ala Gly Ala Pro Ser Val Phe Leu Phe Pro Pro
        115                 120                 125
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
    130                 135                 140
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145                 150                 155                 160
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175
Glu Gln Tyr Ala Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195                 200                 205
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
225                 230                 235                 240
Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305                 310                 315                 320
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325                 330
```

<210> 566
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 566

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1               5                  10                  15
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65                  70                  75                  80
Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
```

```
                85                  90                  95
Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100                 105                 110
Pro Ala Pro Glu Ala Ala Gly Ala Pro Ser Val Phe Leu Phe Pro Pro
        115                 120                 125
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
    130                 135                 140
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145                 150                 155                 160
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195                 200                 205
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
225                 230                 235                 240
Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305                 310                 315                 320
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325                 330
```

<210> 567
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 567

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1               5                  10                  15
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60
```

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

<210> 568
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 568

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1               5                  10                  15
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
```

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

<210> 569
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 569

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1               5                  10                  15
```

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

<210> 570
<211> 326
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 570
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 1   5   10   15
Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20   25   30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35   40   45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50   55   60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
65   70   75   80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85   90   95
Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
            100   105   110
Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
        115   120   125
Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
    130   135   140
Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
145   150   155   160
Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn
                165   170   175
Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
            180   185   190
Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
        195   200   205
Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
    210   215   220
Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
225   230   235   240
Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
                245   250   255
Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
            260   265   270
Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
        275   280   285
Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
    290   295   300
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
305   310   315   320
Ser Leu Ser Pro Gly Lys
                325

<210> 571
<211> 326
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 571
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 1   5   10   15
Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20   25   30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35   40   45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50   55   60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
65   70   75   80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85   90   95
Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
            100   105   110
Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
        115   120   125
Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
    130   135   140
Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
145   150   155   160
Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn
                165   170   175
Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
            180   185   190
Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
        195   200   205
Ser Ser Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
    210   215   220
Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
225   230   235   240
Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
                245   250   255
Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
            260   265   270
Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
        275   280   285
Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
    290   295   300
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
305   310   315   320
Ser Leu Ser Pro Gly Lys
                325

<210> 572
<211> 326

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 572
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 1   5   10   15
Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20   25   30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35   40   45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50   55   60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
65   70   75   80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85   90   95
Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
            100   105   110
Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
        115   120   125
Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
    130   135   140
Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
145   150   155   160
Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Ala
                165   170   175
Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
            180   185   190
Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
        195   200   205
Ser Ser Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
    210   215   220
Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
225   230   235   240
Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
                245   250   255
Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
            260   265   270
Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
        275   280   285
Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
    290   295   300
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
305   310   315   320
Ser Leu Ser Pro Gly Lys
                325

<210> 573
<211> 326
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 573
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 1   5   10   15
Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20   25   30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35   40   45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50   55   60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
65   70   75   80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85   90   95
Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
            100   105   110
Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
        115   120   125
Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
    130   135   140
Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
145   150   155   160
Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Ala
                165   170   175
Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
            180   185   190
Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
        195   200   205
Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
    210   215   220
Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
225   230   235   240
Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
                245   250   255
Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
            260   265   270
Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
        275   280   285
Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
    290   295   300
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
305   310   315   320

Ser Leu Ser Pro Gly Lys
325

<210> 574
<211> 326
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 574
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
1 5 10 15
Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
65 70 75 80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95
Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
100 105 110
Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
115 120 125
Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Ala
130 135 140
Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
145 150 155 160
Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn
165 170 175
Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
180 185 190
Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
195 200 205
Ser Ser Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
210 215 220
Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
225 230 235 240
Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
245 250 255
Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
260 265 270
Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
275 280 285
Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys

```
    290                 295                 300
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
305                 310                 315                 320
Ser Leu Ser Pro Gly Lys
                325
```

<210> 575
<211> 327
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 575

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 1               5                  10                  15
Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65                  70                  75                  80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95
Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro
            100                 105                 110
Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
        115                 120                 125
Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
    130                 135                 140
Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
145                 150                 155                 160
Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
                165                 170                 175
Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            180                 185                 190
Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
        195                 200                 205
Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    210                 215                 220
Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
225                 230                 235                 240
Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                245                 250                 255
Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            260                 265                 270
```

```
Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        275                 280                 285
Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
    290                 295                 300
Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
305                 310                 315                 320
Leu Ser Leu Ser Leu Gly Lys
                325
```

<210> 576
<211> 327
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 576

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 1               5                  10                  15
Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65                  70                  75                  80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95
Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro
            100                 105                 110
Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
        115                 120                 125
Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
    130                 135                 140
Ala Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
145                 150                 155                 160
Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
                165                 170                 175
Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            180                 185                 190
Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
        195                 200                 205
Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    210                 215                 220
Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
225                 230                 235                 240
Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
```

```
                245                 250                 255
Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            260                 265                 270
Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        275                 280                 285
Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
    290                 295                 300
Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
305                 310                 315                 320
Leu Ser Leu Ser Leu Gly Lys
                325
```

<210> 577
<211> 327
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 577

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 1               5                  10                  15
Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65                  70                  75                  80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95
Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro
            100                 105                 110
Glu Phe Glu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
        115                 120                 125
Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
    130                 135                 140
Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
145                 150                 155                 160
Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
                165                 170                 175
Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            180                 185                 190
Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
        195                 200                 205
Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    210                 215                 220
```

```
Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
225                 230                 235                 240
Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                245                 250                 255
Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            260                 265                 270
Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        275                 280                 285
Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
    290                 295                 300
Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
305                 310                 315                 320
Leu Ser Leu Ser Leu Gly Lys
                325
```

<210> 578
<211> 327
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 578

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 1               5                  10                  15
Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65                  70                  75                  80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95
Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro
            100                 105                 110
Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
        115                 120                 125
Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
    130                 135                 140
Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
145                 150                 155                 160
Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
                165                 170                 175
Ala Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            180                 185                 190
Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
```

```
        195                 200                 205
Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    210                 215                 220
Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
225                 230                 235                 240
Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                245                 250                 255
Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            260                 265                 270
Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        275                 280                 285
Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
    290                 295                 300
Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
305                 310                 315                 320
Leu Ser Leu Ser Leu Gly Lys
                325
```

<210> 579
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 579

```
Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
 1               5                  10                  15
Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
            20                  25                  30
Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
        35                  40                  45
Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
    50                  55                  60
Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
65                  70                  75                  80
Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
                85                  90                  95
Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
            100                 105
```

<210> 580
<211> 106
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 580
Gly Gln Pro Lys Ala Asn Pro Thr Val Thr Leu Phe Pro Pro Ser Ser
 1   5   10   15
Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp
            20   25   30
Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser Pro
        35   40   45
Val Lys Ala Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn Asn
    50   55   60
Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys
65   70   75   80
Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val
                85   90   95
Glu Lys Thr Val Ala Pro Thr Glu Cys Ser
            100   105

<210> 581
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 581
Gly Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser
 1   5   10   15
Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp
            20   25   30
Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro
        35   40   45
Val Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn
    50   55   60
Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys
65   70   75   80
Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val
                85   90   95
Glu Lys Thr Val Ala Pro Thr Glu Cys Ser
            100   105

<210> 582
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 582
Leu Leu Gln Gly Gly
 1   5

<210> 583
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 583
Gly Gly Gly Leu Leu Gln Gly Gly
 1   5

<210> 584
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 584
Asp Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly Glu
 1   5   10   15
Ser Leu Thr Leu Ser Cys Thr Ala Ser Gly Phe Thr Phe Thr Ser Ser
            20   25   30
Thr Met Asn Trp Val Arg Gln Ala Pro Gly Glu Gly Leu Asp Trp Val
        35   40   45
Ser Ser Ile Ser Thr Ser Gly Val Ile Thr Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Ala Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Arg Leu Phe Ser Leu Arg Ala Asp Asp Thr Ala Ile Tyr Tyr Cys
                85   90   95
Ala Thr Asp Thr Phe Asp His Trp Gly Pro Gly Thr Leu Val Thr Val
            100   105   110
Ser Ser

<210> 585
<211> 102
<212> PRT

<213> Gallus gallus domesticus

<400> 585
Ala Leu Thr Gln Pro Ala Ser Val Ser Ala Asn Pro Gly Glu Thr Val
 1   5   10   15
Lys Ile Thr Cys Phe Gly Ser Ser Gly Asn Tyr Gly Trp Phe Gln Gln
            20   25   30
Lys Ser Pro Gly Ser Ala Pro Val Thr Val Ile His Tyr Asn Asn Lys
        35   40   45
Arg Pro Ser Asp Ile Pro Ser Arg Phe Ser Gly Ser Lys Ser Gly Ser
    50   55   60
Thr Gly Thr Leu Thr Ile Thr Gly Val Arg Ala Glu Asp Glu Ala Val
65   70   75   80
Tyr Phe Cys Gly Ala Trp Glu Thr Gly Ser Ala Thr Phe Gly Ala Gly
                85   90   95
Thr Thr Leu Thr Val Leu
            100

<210> 586
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<220>
<221> misc_feature
<222> 1
<223> absent or 2'-deoxythymidine

<220>
<221> misc_feature
<222> 2
<223> a 2'-deoxyribonucleotide with a modified nucleobase

<220>
<221> misc_feature
<222> 3, 6, 11
<223> 2'-deoxycytidine

<220>
<221> misc_feature
<222> 4, 7, 9, 12
<223> 2'-deoxyguanosine

<220>
<221> misc_feature
<222> 5

<223> 2'-deoxyadenosine or 2'-deoxythymidine, each optionally comprising a 3'-phosphotriester

<220>
<221> misc_feature
<222> 8
<223> Can be in repeats of about 1 to about 4

<220>
<221> misc_feature
<222> 10
<223> 2'-deoxyadenosine or 2'-deoxythymidine

<220>
<221> misc_feature
<222> 13
<223> 2'-deoxythymidine optionally comprising a 3'-phosphotriester

<400> 586
nncgncgtgn cgnt 14