

GRAD1025-Sequence_Listing_050913.txt
SEQUENCE LISTING

<110> RAO, DONALD
WANG, ZHAOHUI
NEMUNAITIS, JOHN J.
SENZER, NEIL

<120> BI-FUNCTIONAL SHORT-HAIRPIN RNA (BI-SHRNA) SPECIFIC FOR
SINGLENUCLEOTIDE KRAS MUTATIONS

<130> GRAD:1025

<140> UNKNOWN

<141> 2013-05-06

<150> 61/644,875

<151> 2012-05-09

<160> 58

<170> PatentIn version 3.5

<210> 1

<211> 245

<212> DNA

<213> Homo sapiens

<400> 1

tcgactgctg ttgaagtgag cgcctgtggt agttggagct gattagttaa gccacagatg	60
taatcagctc caactaccac agttgcctac tgcctcggaa gcagctcact acattactca	120
gctgttgaag tgagcgcctg tggtaggaag agatgattag tgaagccaca gatgtaatac	180
gctccaacta ccacagttgc ctactgcctc ggaagcttaa taaaggatct tttattttca	240
ttggc	245

<210> 2

<211> 245

<212> DNA

<213> Homo sapiens

<400> 2

tcgactgctg ttgaagtgag cgccgtggta gttggagctg atgtagtgaa gccacagatg	60
tacatcagct ccaactacca cgttgcctac tgcctcggaa gcagctcact acattactca	120
gctgttgaag tgagcgccgt ggtagtctta gctaattag tgaagccaca gatgtacatc	180
agctccaact accacgttgc ctactgcctc ggaagcttaa taaaggatct tttattttca	240
ttggc	245

<210> 3

<211> 245

<212> DNA

<213> Homo sapiens

<400> 3

tcgactgctg ttgaagtgag cgcctggtag ttggagctga tggtagtgaa gccacagatg	60
taccatcagc tccaactacc agttgcctac tgcctcggaa gcagctcact acattactca	120
gctgttgaag tgagcgcctg gtagttactg ctaattgtag tgaagccaca gatgtacatc	180

cagctccaac taccagttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 4
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 4
 tcgactgctg ttgaagtgag cgccggtagt tggagctgat ggctagttaa gccacagatg 60
 tagccatcag ctccaactac cgttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgccgg tagttgtctc tgatagctag tgaagccaca gatgtagcca 180
 tcagctccaa ctaccgttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 5
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 5
 tcgactgctg ttgaagtgag cgccgtagtt ggagctgatg gcgtagtgaa gccacagatg 60
 tacgccatca gctccaacta cgttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgccgt agttggagct gatggcgtag tgaagccaca gatgtacgcc 180
 atcagctcca actacgttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 6
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 6
 tcgactgctg ttgaagtgag cgcctagttg gagctgatgg cgttagttaa gccacagatg 60
 taacgccatc agctccaact agttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgcccta gttggatgag atgacgttag tgaagccaca gatgtaacgc 180
 catcagctcc aactagttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 7
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 7
 tcgactgctg ttgaagtgag cgccagttgg agctgatggc gtatagttaa gccacagatg 60
 tatacgccat cagctccaac tgttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgccag ttggagacta tggagtatag tgaagccaca gatgtatacg 180

ccatcagctc caactgttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 8
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 8
 tcgactgctg ttgaagtgag cgccgttggg gctgatggcg tagtagtgaa gccacagatg 60
 tactacgcca tcagctccaa cgttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgccgt tgaagcacgt ggtgtagtag tgaagccaca gatgtactac 180
 gccatcagct ccaacgttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 9
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 9
 tcgactgctg ttgaagtgag cgccttggag ctgatggcgt aggtagtgaa gccacagatg 60
 tacctacgcc atcagctcca agttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgccct ggagctatag gtctaggtag tgaagccaca gatgtaccta 180
 cgccatcagc tccaagttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 10
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 10
 tcgactgctg ttgaagtgag cgcctggagc tgatggcgta ggctagtgaa gccacagatg 60
 tagcctacgc catcagctcc agttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgccct gagctgtatg cgttcgctag tgaagccaca gatgtagcct 180
 acgccatcag ctccagttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 11
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 11
 tcgactgctg ttgaagtgag cgccgttggg gctgatggcg tagtagtgaa gccacagatg 60
 tactatgcca tcagctccaa cgttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgccgt tgaagcacgt ggtgtagtag tgaagccaca gatgtactat 180

gccatcagct ccaacgttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 12
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 12
 tcgactgctg ttgaagttag cgccttgagg ctgatggcgt aggtagttaa gccacagatg 60
 tacctatgcc atcagctcca agttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgcctt ggagctatag gtctaggttag tgaagccaca gatgtaccta 180
 tgccatcagc tccaagttag ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 13
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 13
 tcgactgctg ttgaagttag cgccttgagg tgatggcgtt ggctagttaa gccacagatg 60
 tagcctatgc catcagctcc agttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgcctg gagctgtatg cgttcgctag tgaagccaca gatgtagcct 180
 atgccatcag ctccagttag ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 14
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 14
 tcgactgctg ttgaagttag cgccgttggg gctcatggcg tagtagtgaa gccacagatg 60
 tactacgcca tgagctccaa cgttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgccgt tgaagcacgt ggtgtagtag tgaagccaca gatgtactac 180
 gccatgagct ccaacgttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 15
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 15
 tcgactgctg ttgaagttag cgccttgagg ctcatggcgt aggtagttaa gccacagatg 60
 tacctacgcc atgagctcca agttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgcctt ggagctatag gtctaggttag tgaagccaca gatgtaccta 180

cgccatgagc tccaagttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 16
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 16
 tcgactgctg ttgaagtgag cgcctggagc tcatggcgta ggctagtga gccacagatg 60
 tagcctacgc catgagctcc agttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgcctg gagctgtatg cgttcgctag tgaagccaca gatgtagcct 180
 acgccatgag ctccagttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 17
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 17
 tcgactgctg ttgaagtgag cgccgtggta gttggagctg ttgtagtgaa gccacagatg 60
 tacaacagct ccaactacca cgttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgccgt ggtagtctta gctattgtag tgaagccaca gatgtacaac 180
 agtccaact accacgttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 18
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 18
 tcgactgctg ttgaagtgag cgcctggtag ttggagctgt tggtagtga gccacagatg 60
 taccaacagc tccaactacc agttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgcctg gtagttactg ctattggtag tgaagccaca gatgtaccaa 180
 cagctccaac taccagttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
 ttggc 245

<210> 19
 <211> 245
 <212> DNA
 <213> Homo sapiens

<400> 19
 tcgactgctg ttgaagtgag cgcctgtggt agttggagct cgttagtga gccacagatg 60
 taacgagctc caactaccac agttgcctac tgcctcggaa gcagctcact acattactca 120
 gctgttgaag tgagcgcctg tggtagactg agctagttag tgaagccaca gatgtaacga 180

GRAD1025-Sequence_Listing_050913.txt

gctccaacta ccacagttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
ttggc 245

<210> 20
<211> 245
<212> DNA
<213> Homo sapiens

<400> 20
tcgactgctg ttgaagtga gcccgtggta gttggagctc gtgtagtgaa gccacagatg 60
tacacgagct ccaactacca cgttgcctac tgcctcggaa gcagctcact acattactca 120
gctgttgaag tgagcgccgt ggtagtacta gctagtgtag tgaagccaca gatgtacacg 180
agctccaact accacgttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
ttggc 245

<210> 21
<211> 245
<212> DNA
<213> Homo sapiens

<400> 21
tcgactgctg ttgaagtga ggcctgtggt agttggagct tgtagtgaa gccacagatg 60
taacaagctc caactaccac agttgcctac tgcctcggaa gcagctcact acattactca 120
gctgttgaag tgagcgccgt tggtagactg agctagttag tgaagccaca gatgtaacaa 180
gctccaacta ccacagttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
ttggc 245

<210> 22
<211> 245
<212> DNA
<213> Homo sapiens

<400> 22
tcgactgctg ttgaagtga gcccgtggta gttggagctt gtgtagtgaa gccacagatg 60
tacacaagct ccaactacca cgttgcctac tgcctcggaa gcagctcact acattactca 120
gctgttgaag tgagcgccgt ggtagtctta gcttatgtag tgaagccaca gatgtacaca 180
agctccaact accacgttgc ctactgcctc ggaagcttaa taaaggatct tttattttca 240
ttggc 245

<210> 23
<211> 208
<212> DNA
<213> Homo sapiens

<400> 23
gctagccacc atgactgaat ataaacttgt ggtagttgga gctggtggcg taggcaagag 60
tgcttccaag gtgtacgacc ccgagcaacg caaacgcatg atcactgggc ctcagtgggtg 120
ggctcgctgc aagcaaatga acgtgctgga ctccttcac aactactatg attccgagaa 180

GRAD1025-Sequence_Listing_050913.txt 208

gcacgccgag gaggcacgtc gtgcctca

<210> 24
 <211> 51
 <212> DNA
 <213> Homo sapiens

<400> 24
 atgactgaat ataaacttgt ggtagttaga gctgatggcg taggcaagag t 51

<210> 25
 <211> 208
 <212> DNA
 <213> Homo sapiens

<400> 25
 cacttcgcat attaaggtga cgcgtgtggc ctcgaacacc gagcgaccct gcagcgaccc 60
 gcttaaaagc ttggcattcc ggtactgttg gtaaagccac catgactgaa tataaacttg 120
 tggtagttag agctgatggc gtaggcaaga gtgccgatgc taagaacatt aagaagggcc 180
 ctgctccctt ctaccctctg gaggatgg 208

<210> 26
 <211> 36
 <212> DNA
 <213> Homo sapiens

<400> 26
 cttgtggtag ttggagctgg tggcgtaggc aagagt 36

<210> 27
 <211> 30
 <212> DNA
 <213> Homo sapiens

<400> 27
 cttgtggtag ttggagctga tggcgtaggc 30

<210> 28
 <211> 30
 <212> DNA
 <213> Homo sapiens

<400> 28
 cttgtggtag ttggagctgt tggcgtaggc 30

<210> 29
 <211> 30
 <212> DNA
 <213> Homo sapiens

<400> 29
 cttgtggtag ttggagctcg tggcgtaggc 30

<210> 30
 <211> 30
 <212> DNA
 <213> Homo sapiens

<400> 30		
cttgtggtag ttggagcttg tggcgtaggc		30
<210> 31		
<211> 19		
<212> DNA		
<213> Homo sapiens		
<400> 31		
acaccatcaa cctcgacta		19
<210> 32		
<211> 19		
<212> DNA		
<213> Homo sapiens		
<400> 32		
caccatcaac ctcgactac		19
<210> 33		
<211> 19		
<212> DNA		
<213> Homo sapiens		
<400> 33		
accatcaacc tcgactacc		19
<210> 34		
<211> 19		
<212> DNA		
<213> Homo sapiens		
<400> 34		
ccatcaacct cgactaccg		19
<210> 35		
<211> 19		
<212> DNA		
<213> Homo sapiens		
<400> 35		
catcaacctc gactaccgc		19
<210> 36		
<211> 19		
<212> DNA		
<213> Homo sapiens		
<400> 36		
atcaacctcg actaccgca		19
<210> 37		
<211> 19		
<212> DNA		
<213> Homo sapiens		
<400> 37		
tcaacctcga ctaccgcat		19
<210> 38		

```

<211> 19
<212> DNA
<213> Homo sapiens

<400> 38
caacctcgac taccgcatc 19

<210> 39
<211> 19
<212> DNA
<213> Homo sapiens

<400> 39
aacctcgact accgcatcc 19

<210> 40
<211> 19
<212> DNA
<213> Homo sapiens

<400> 40
acctcgacta ccgcatccg 19

<210> 41
<211> 19
<212> DNA
<213> Homo sapiens

<400> 41
caacctcgac taccgtatc 19

<210> 42
<211> 19
<212> DNA
<213> Homo sapiens

<400> 42
aacctcgact accgtatcc 19

<210> 43
<211> 19
<212> DNA
<213> Homo sapiens

<400> 43
acctcgacta ccgtatccg 19

<210> 44
<211> 19
<212> DNA
<213> Homo sapiens

<400> 44
caacctcgag taccgcatc 19

<210> 45
<211> 19
<212> DNA
<213> Homo sapiens

<400> 45

```

aacctcgagt accgcatcc 19

<210> 46
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 46
 acctcgagta ccgcatccg 19

<210> 47
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 47
 caccatcaac ctcgacaac 19

<210> 48
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 48
 accatcaacc tcgacaacc 19

<210> 49
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 49
 acaccatcaa cctcgagca 19

<210> 50
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 50
 caccatcaac ctcgagcac 19

<210> 51
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 51
 acaccatcaa cctcgaaca 19

<210> 52
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 52
 caccatcaac ctcgaacac 19

<210> 53
 <211> 1280

GRAD1025-Sequence_Listing_050913.txt

<212> DNA
<213> Homo sapiens

<400> 53
cgctcgtcgac tttcttcccc attagggatt atgctgaatt tgtatggttt atagttgtta 60
gagtttgagg tgttaattct aattatctat ttcaaattta gcaggaaaaa agagaacatc 120
accttgtaaa actgaagatt gtgaccatcg actgctgttg aagtgagcgc cgtggtagtt 180
ggagctgatg tagtgaagcc acagatgtac atcagctcca actaccacgt tgcctactgc 240
ctcggaaagca gctgcctcgg gaagccaagt tgggctttta agtgcagggc ctgctgatgt 300
tgagtgcctt tgctgttgaa gtgagcgccg tggtagtctt agctaattga gtgaagccac 360
agatgtacat cagctccaac taccacgttg cctactgcct cggaagctta ataaaggatc 420
ttttattttc attggctaag aagttatgta ttcattcaat aattcaagcc aagcaagtat 480
ataggtgttt taatagtttt tgttttcgac tgctgttgaa gtgagcgcct ggtagttgga 540
gctgttggtta gtgaagccac agatgtacca acagctccaa ctaccagttg cctactgcct 600
cggaagctat ttccttcaaa tgaatgattt ttactaattt tgtgtacttt tattgtgtcg 660
atgtagaatc tgcctgggtc atctgatgtg acagcttctg ctgttgaaagt gagcgcctgg 720
tagttactgc tattggtagt gaagccacag atgtaccaac agctccaact accagttgcc 780
tactgcctcg gaagcttaat aaaggatctt ttattttcat tggctagctg tagaactcca 840
gcttcggcct gtcgccaat caaactgtcc tgttactgaa tcgactgctg ttgaagtga 900
cgccgtggta gttggagctc gtgtagtgaa gccacagatg tacacgagct ccaactacca 960
cgttgcctac tgcctcggaa gcaaaagtct gtagaaaagt aagggaaact caaaccgcgt 1020
gttgaagtga gcgccgtggt agtactagct agtgtagtga agccacagat gtacacgagc 1080
tccaactacc acgttgcccta ctgcctcgga agcttaataa aggatctttt attttcattg 1140
gctggggatt gtgaccagaa gattttgaaa attaaatatt actgaagatt tcgacttcca 1200
ctgttaaagt tacaagatac atgaaatatt aaagaaaatg tgtaactttt tgtgtaaata 1260
catcttgtgc ggccgcggat 1280

<210> 54
<211> 1280
<212> DNA
<213> Homo sapiens

<400> 54
cgctcgtcgac tttcttcccc attagggatt atgctgaatt tgtatggttt atagttgtta 60
gagtttgagg tgttaattct aattatctat ttcaaattta gcaggaaaaa agagaacatc 120
accttgtaaa actgaagatt gtgaccatcg actgctgttg aagtgagcgc ctgtggtagt 180
tggagcttgt tagtgaagcc acagatgtaa caagctccaa ctaccacagt tgcctactgc 240
ctcggaaagca gctgcctcgg gaagccaagt tgggctttta agtgcagggc ctgctgatgt 300
tgagtgcctt tgctgttgaa gtgagcgcct gtggtagact gagctagtta gtgaagccac 360
agatgtaaca agctccaact accacagttg cctactgcct cggaagctta ataaaggatc 420

GRAD1025-Sequence_Listing_050913.txt

ttttattttc attggctaag aagttatgta ttcattcaat aattcaagcc aagcaagtat	480
ataggtgttt taatagtttt tgttttcgac tgctgttgaa gtgagcgccg tggtagttgg	540
agctgatgta gtgaagccac agatgtacat cagctccaac taccacgttg cctactgcct	600
cggaagctat ttccttcaaa tgaatgattt ttactaattt tgtgtacttt tattgtgtcg	660
atgtagaatc tgcctggtct atctgatgtg acagcttctg ctggtgaagt gagcgccgtg	720
gtagtcttag ctaatgtagt gaagccacag atgtacatca gctccaacta ccacgttgcc	780
tactgcctcg gaagcttaat aaaggatctt ttattttcat tggctagctg tagaactcca	840
gcttcggcct gtcgccaat caaactgtcc tgttactgaa tcgactgctg ttgaagtga	900
cgcctggtag ttggagctgt tggtagtgaa gccacagatg taccaacagc tccaactacc	960
agttgcctac tgcctcgaa gcaaaagtct gtagaaaagt aagggaact caaaccgcct	1020
gttgaagtga gcgcctggtg gttactgcta ttggtagtga agccacagat gtaccaacag	1080
ctccaactac cagttgccta ctgcctcgga agcttaataa aggatctttt attttcattg	1140
gctggggatt gtgaccagaa gattttgaaa attaaatatt actgaagatt tcgacttcca	1200
ctgttaaatg tacaagatac atgaaatatt aaagaaaatg tgtaactttt tgtgtaaata	1260
catcttgtgc ggccgcggat	1280

<210> 55
 <211> 1029
 <212> DNA
 <213> Homo sapiens

<400> 55	
cgctgctgac tttcttcccc attagggatt atgctgaatt tgtatggttt atagttgtta	60
gagtttgagg tgtaattctt aattatctat ttcaaattta gcaggaaaaa agagaacatc	120
accttgtaaa actgaagatt gtgaccagtc agaataatgt gtggtagtgt gagctgatgt	180
gatatgtgca tctcatcagc tccaactacc accattatgg tgacagctgc ctcggaagc	240
caagttgggc tttaaagtgc agggcctgct gatgttgagt gctttttgtt cgtggtagtc	300
ttagctaattg tgaagtagat tagcatctca tcagctcaa ctaccaccat aagaagttat	360
gtattcatcc aataattcaa gccaagcaag tatataggtg ttttaatagt ttttgtttgc	420
agtcctctgt ttggtagtgt gagctgttg agaagaatgt agtccaacag ctccaactac	480
catggtggcc tgctatttcc ttcaaatgaa tgatttttac taattttgtg tacttttatt	540
gtgtcgatgt agaatctgcc tggctctatct gatgtgacag cttctgtagc acttggtagt	600
tactgctatt ggtgtttagt tatctccaac agctccaact accatactgc tagctgtaga	660
actccagctt cggcctgtcg cccaatcaaa ctgtcctgtt actgaacact gttctatggt	720
tgtggtagtt ggagctcgtg tgtgtgatat tctgccacga gctccaacta ccacctgtgg	780
tagtgaaaag tctgtagaaa agtaaggga actcaaacc ctttctacac gtggtagtac	840
tagctagtgg tgtttctgta tggcacgagc tccaactacc actgagtttg gtggggattg	900

GRAD1025-Sequence_Listing_050913.txt

tgaccagaag	atTTTgaaaa	tTaaatatta	ctgaagattt	cgacttccac	tgTtaaattgt	960
acaagataca	tgaaatatta	aagaaaatgt	gtaacttttt	gtgtaaatac	atcttgTgcg	1020
gccgcggat						1029

<210> 56
 <211> 1029
 <212> DNA
 <213> Homo sapiens

<400> 56						
cgTcgTcgac	tttcttcccc	attagggatt	atgctgaatt	tgtatggttt	atagttgtta	60
gagtttgagg	tgTtaattct	aattatctat	ttcaaattta	gcaggaaaaa	agagaacatc	120
accttgtaaa	actgaagatt	gtgaccagtc	agaataatgt	tgtggtagtt	ggagcttggt	180
gatatgtgca	tctacaagct	ccaactacca	cacattatgg	tgacagctgc	ctcggaagc	240
caagttgggc	tttaaagtgc	agggcctgct	gatgttgagt	gctttttgtt	ctgtggtaga	300
ctgagctagt	tgaagtagat	tagcatctac	aagctccaac	taccacacat	aagaagttat	360
gtattcatcc	aataattcaa	gccaagcaag	tatataggtg	ttttaatagt	ttttgtttgc	420
agtcctctgt	tgtggtagtt	ggagctgatg	agaagaatgt	agtcatcagc	tccaactacc	480
actggtggcc	tgctatttcc	ttcaaatgaa	tgatttttac	taattttgtg	tacttttatt	540
gtgtcgatgt	agaatctgcc	tggtctatct	gatgtgacag	cttctgtagc	actgtggtag	600
tcttagctaa	tgtgtttagt	tatctcatca	gctccaacta	ccactactgc	tagctgtaga	660
actccagctt	cggcctgtcg	cccaatcaaa	ctgtcctggt	actgaacact	gttctatggt	720
ttggtagttg	gagctgttgg	tgtgtgatat	tctgccaac	agctccaact	accactgtgg	780
tagtgaaaag	tctgtagaaa	agtaaggga	actcaaacc	ctttctacac	tggtagttac	840
tgctattggg	tgtttctgta	tggccaacag	ctccaactac	catgagtttg	gtggggattg	900
tgaccagaag	atTTTgaaaa	tTaaatatta	ctgaagattt	cgacttccac	tgTtaaattgt	960
acaagataca	tgaaatatta	aagaaaatgt	gtaacttttt	gtgtaaatac	atcttgTgcg	1020
gccgcggat						1029

<210> 57
 <211> 1050
 <212> DNA
 <213> Homo sapiens

<400> 57						
tttcttcccc	attagggatt	atgctgaatt	tgtatggttt	atagttgtta	gagtttgagg	60
tgTtaattct	aattatctat	ttcaaattta	gcaggaaaaa	agagaacatc	accttgtaaa	120
actgaagatt	gtgaccagtc	agaataatgt	caaagtgcct	acagtgcagg	tagtgatatg	180
tgcatctact	gcagtgaagg	cacttgtagc	attatggtga	cagctgcctc	gggaagccaa	240
gttgggcttt	aaagtgcagg	gcctgctgat	gttgagtgct	ttttgttcta	aggtgcatct	300
agtgcagata	gtgaagtaga	ttagcatcta	ctgccctaag	tgctccttct	ggcataagaa	360

```

GRAD1025-Sequence_Listing_050913.txt
gttatgtatt catccaataa ttcaagccaa gcaagtatat aggtgtttta atagtttttg 420
tttgcagtcc tctgttagtt ttgcatagtt gcactacaag aagaatgtag ttgtgcaaat 480
ctatgcaaaa ctgatggtgg cctgctatct ctttcaaagt aatgattttt actaattttg 540
tgtactttta ttgtgtcgat gtagaatctg cctggtctat ctgatgtgac agcttctgta 600
gcactaaagt gcttatagtg caggtagtgt ttagttatct actgcattat gagcacttaa 660
agtactgcta gctgtagaac tccagcttcg gcctgtcgcc caatcaaact gtcctgttac 720
tgaacactgt tctatggtta gttttgcagg tttgcatcca gctgtgtgat attctgctgt 780
gcaaatccat gcaaaactga ctgtggtagt gaaaagtctg tagaaaagta agggaaactc 840
aaaccccttt ctacacaggt tgggatcggt tgcaatgctg tgtttctgta tggatttgca 900
cttgtcccgg cctgttgagt ttggtgggga ttgtgaccag aagattttga aaattaaata 960
ttactgaaga tttcgacttc cactgttaaa tgtacaagat acatgaaata ttaaagaaaa 1020
tgtgtaactt tttgtgtaaa tacatcttgt 1050

<210> 58
<211> 51
<212> DNA
<213> Homo sapiens

<400> 58
atgactgaat ataaacttgt ggtagttgga gctggtggcg taggcaagag t 51

```