

P109649-seql-000001
SEQUENCE LISTING

<110> The Bioprocessing Technology Institute (BTI) Agency For

<120> NOVEL PROMOTERS FOR HIGH LEVEL EXPRESSION

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<212> DNA

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ccattggagc caagtacact gagtcaatag ggactttcca ttgggttttg cccagtacaa	360
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<210> 22
 <211> 558
 <212> DNA
 <213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 22

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ggagccaagt acattgagtc aatagggtact ttccaatggg ttttgcccag tacataaggt	180
caatgggagg taagccaatg ggTTTTTccc attactggca cgtatactga gtcattaggg	240
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aagggtcaata ggggggtgagt caatgggttt ttcccattat tggcacgtac ataagggtcaa	420
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cgcccattct ccgccccatg gctgactaat tttttttatt tatgcagagg ccgaggccgc	540
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<210> 23

<211> 652

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 23

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ggagccaagt acattgagtc aatagggtact ttccaatggg ttttgcccag tacataaggt	180
caatgggagg taagccaatg ggTTTTTccc attactggca cgtatactga gtcattaggg	240
actttccaat gggTTTTgcc cagtacataa ggtcaatagg ggtgaatcaa caggaaagtc	300
ccattggagc caagtacact gagtcaatag ggactttcca ttgggttttg cccagtacaa	360
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cggggtaaac tgggaaagtg atgtcgtgta ctggctccgc ctttttcccg aggggtggggg	600
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<210> 24
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> chimeric gene regulatory unit

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cc	722

<210> 25
 <211> 418
 <212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 25

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<210> 26

<211> 480

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 26

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<210> 27

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<211> 398
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> chimeric gene regulatory unit

<400> 27
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 cccagcagg cagaagtatg caaagcatgc atctcaatta gtcagcaacc atagactagt 180
 cgtgaggctc cggtgcccgt cagtgggcag agcgcacatc gcccacagtc cccgagaagt 240
 tggggggagg ggtcggcaat tgaaccggtg cctagagaag gtggcgcggg gtaaaactggg 300
 aaagtgatgt cgtgtactgg ctccgccttt ttcccagggg tgggggagaa ccgtatataa 360
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<210> 28
 <211> 471
 <212> DNA
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<220>
 <223> chimeric gene regulatory unit

<400> 28
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 cccagcagg cagaagtatg caaagcatgc atctcaatta gtcagcaacc atagactagt 180
 tcgagggtgag cccacggtt tgcttcactc tccccatctc cccccctcc ccacccccaa 240
 ttttgtattt atttatTTTT taattatTTT gtgcagcgat gggggcgggg gggggggggg 300
 cgcgcgccag gcggggcggg gcggggcgag gggcggggcg gggcgaggcg gagagggtgcg 360
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<210> 29
 <211> 1566
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> chimeric gene regulatory unit

<400> 29
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<210> 30
 <211> 1636
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> chimeric gene regulatory unit

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cccgctggc attatgcca gtacatgacc ttatgggact ttcctacttg gcagtacatc	360
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tcggtaccgg cggccgctca gatcgctgg agacgccatc cacgctgttt tgacctccat	720
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<210> 31

<211> 1459

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 31

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<211> 1559
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> chimeric gene regulatory unit

<400> 32
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<210> 33

<211> 1630

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 33

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ccgcctggc attatgcca gtacatgacc ttatgggact ttcctacttg gcagtacatc	360
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ccccatctcc ccccccctcc ccccccaat tttgtattta tttatTTTTT aattatTTTg	480
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ggcgggccgc atcagatcgc ctggagacgc catccacgct gttttgacct ccatagaaga	720
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<210> 34

<211> 1680

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 34

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ggagccaagt acattgagtc aatagggtact ttccaatggg ttttgcccag tacataaggt	180
caatgggagg taagccaatg ggtttttccc attactggca cgtatactga gtcattaggg	240

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<210> 35
 <211> 1614
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> chimeric gene regulatory unit

<400> 35
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 caatgggagg taagccaatg ggtttttccc attactggca cgtatactga gtcattaggg 240
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gcagtgtagt ctgagcagta ctcgttgctg ccgcgcgcgc caccagacat aatagctgac	1560
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<210> 36

<211> 1510

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

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ggagccaagt acattgagtc aatagggact ttccaatggg ttttgcccag tacataaggt	180
caatgggagg taagccaatg ggtttttccc attactggca cgtatactga gtcattaggg	240
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ccattggagc caagtacact gagtcaatag ggactttcca ttgggttttg cccagtacaa	360
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ctcgcggccg ctcatatcgc ctggagacgc catccacgct gttttgacct ccatagaaga	600
caccgggacc gatccagcct ccgcggccgg gaacgggtgca ttggaacgcg gattccccgt	660

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ggtatagctt agcctatagg tgtgggttat tgaccattat tgaccactcc cctattgggtg	840
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<210> 37

<211> 1604

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 37

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ggagccaagt acattgagtc aatagggact ttccaatggg ttttgcccag tacataaggt	180
caatgggagg taagccaatg gggtttttccc attactggca cgtatactga gtcattaggg	240

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cggggtaaac tgggaaagtg atgtcgtgta ctggctccgc ctttttcccg aggggtggggg	600
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<211> 1682
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> chimeric gene regulatory unit

<400> 38
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 ggagccaagt acattgagtc aatagggact ttccaatggg ttttgcccag tacataaggt 180
 caatgggagg taagccaatg ggTTTTTccc attactggca cgtatactga gtcattaggg 240
 actttccaat gggTTTTgcc cagtacataa ggtcaatagg ggtgaatcaa caggaaagtc 300
 ccattggagc caagtacact gagtcaatag ggactttcca ttgggttttg cccagtacaa 360
 aagggtcaata ggggggtgagt caatgggttt ttcccattat tggcacgtac ataagggtcaa 420
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cagctgagtt gttgtattct gataagagtc agaggtaact cccgttgctgg tgctgttaac	1560
ggtagggggc agtgtagtct gagcagtact cgttgctgcc gcgcgcgcca ccagacataa	1620
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<210> 39

<211> 1250

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 39

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ccccagcagg cagaagtatg caaagcatgc atctcaatta gtcagcaacc atagtccccgc	180
ccctaactcc gcccatcccg cccctaactc cgcccagttc cgcccattct ccgccccatg	240
gctgactaat tttttttatt tatgcagagg ccgaggccgc ctgcggccg ctcatatgc	300
ctggagacgc catccacgct gttttgacct ccatagaaga caccgggacc gatccagcct	360
ccgcggccgg gaacggtgca ttggaacgcg gattccccgt gccaaagagt acgtaagtac	420
cgcttataga ctctataggc acaccccttt ggctcttatg catgctatac tgtttttggc	480
ttggggccta tacacccccg ctccctatgc tataggatgat ggtatagctt agcctatagg	540
tgtgggttat tgaccattat tgaccactcc cctattgggtg acgatacttt ccattactaa	600

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<210> 40

<211> 1360

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 40

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ccccagcagg cagaagtatg caaagcatgc atctcaatta gtcagcaacc atagactagt	180
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atttccaagt ctccacccca ttgacgtcaa tgggagtttg ttttggcacc aaaatcaacg	300
ggactttcca aaatgtcgta ataacccgc cccgttgacg caaatgggcg gtaggcgtgt	360
acgggtgggag gtctatataa gcagagctcg tttagtgaac cgcagatcgc ctggagacgc	420
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<210> 41

<211> 1432

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 41

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<210> 42

<211> 1350

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 42

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ttgctgccgc gcgcgccacc agacataata gctgacagac taacagactg ttcctttcca	1320
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<210> 43
 <211> 1423
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> chimeric gene regulatory unit

<400> 43
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tgataagagt cagaggtaac tcccgttgcg gtgctgttaa cggaggaggg cagtgtagtc	1320
tgagcagtac tcgttgctgc cgcgcgcgcc accagacata atagctgaca gactaacaga	1380
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<210> 44

<211> 1604

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 44

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ccgcctggc attatgcca gtacatgacc ttacgggact ttcctacttg gcagtacatc	360
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tctccttga atttgccctt tttgagtttg gatcttggtt cattctcaag cctcagacag	1560
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<210> 45

<211> 1667

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 45

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gtacatcaag tgtatcatat gccaaagtcg cccctattg acgtcaatga cggtaaattg	300
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aacggtactt tcccatagct gattaatggg aaagtaccgt tctcgagcca atacacgtca	540
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aattctcctt ggaatttgcc ctttttgagt ttggatcttg gttcattctc aagcctcaga	1620
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<210> 46
 <211> 1491
 <212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 46

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atagggactt tccattgacg tcaatgggtg gagtatttac ggtaaactgc ccacttggca	240
gtacatcaag tgtatcatat gccaagtacg ccccctattg acgtcaatga cggtaaattg	300
ccgcctggc attatgcccga gtacatgacc ttatgggact ttcctacttg gcagtacatc	360
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ctcgattagt tctcgagctt ttggagtagc tcgtcttttag gttgggggga ggggttttat	1320
gcgatggagt ttccccacac tgagtgggtg gagactgaag ttaggccagc ttggcacttg	1380
atgtaattct ccttgggaatt tgcccttttt gagtttggat cttggttcat tctcaagcct	1440
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<210> 47

<211> 1583

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 47

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atagggactt tccattgacg tcaatgggtg gagtatttac ggtaaaactgc ccacttggca	240
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ccgcctggc attatgcca gtacatgacc ttacgggact ttcctacttg gcagtacatc	360
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gcgcacatcg cccacagtcc ccgagaagtt ggggggaggg gtcggcaatt gaaccgggtgc	480
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caacggggtt gccgccagaa cacaggtaag tgccgtgtgt ggttcccgcg ggcctggcct	660
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ttgagtttgg atcttggttc attctcaagc ctcagacagt ggttcaaagt tttttcttc	1560
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<210> 48

<211> 1661

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 48

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<210> 49

<211> 1712

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 49

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ggagccaagt acattgagtc aatagggtact ttccaatggg ttttgcccag tacataaggt	180
caatgggagg taagccaatg gggtttttccc attactggca cgtataactga gtcattaggg	240
actttccaat ggggttttgcc cagtacataa ggtcaatagg ggtgaatcaa caggaaagtc	300
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<210> 50

<211> 1655

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 50

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ggagccaagt acattgagtc aatagggact ttccaatggg ttttgcccag tacataaggt	180
caatgggagg taagccaatg ggtttttccc attactggca cgtatactga gtcattaggg	240
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<220>
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 <212> DNA
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<220>
 <223> chimeric gene regulatory unit

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<211> 1282

<212> DNA

<213> Artificial Sequence

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<210> 55

<211> 1402

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

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 <212> DNA
 <213> Artificial Sequence

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<210> 57

<211> 1374

<212> DNA

<213> Artificial Sequence

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<223> chimeric gene regulatory unit

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<210> 58

<211> 1455

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

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<210> 59

<211> 1618

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 59

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<220>
 <223> chimeric gene regulatory unit

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 <213> Artificial Sequence

<220>
 <223> chimeric gene regulatory unit

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<210> 62

<211> 1605

<212> DNA

<213> Artificial Sequence

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<223> chimeric gene regulatory unit

<400> 62

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<211> 1670

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 63

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<211> 1726

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

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<211> 1669

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 65

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 <211> 1556
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> chimeric gene regulatory unit

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<210> 67

<211> 1650

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 67

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<220>
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<210> 69

<211> 1296

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 69

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<210> 70

<211> 1416

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 70

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<210> 71

<211> 1478

<212> DNA

<213> Artificial Sequence

<220>

<223> chimeric gene regulatory unit

<400> 71

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<213> Artificial Sequence

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<400> 72

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<211> 1461

<212> DNA

<213> Artificial Sequence

<220>

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<400> 73

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<400> 74

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Thr Gly Gly Gly Gly Gln Gly Ala Asn Gly Trp Gln Ile Ile Ser Ser
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Ser Ser Gly Ala Thr Pro Thr Ser Lys Glu Gln Ser Gly Ser Ser Thr
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Gly Ala Asn Gln Gln Ile Ile Thr Asn Arg Gly Ser Gly Gly Asn Ile
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Leu Ala Asn Asn Val Leu Ser Gly Gln Thr Gln Tyr Val Thr Asn Val
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Pro Val Ala Leu Asn Gly Asn Ile Thr Leu Leu Pro Val Asn Ser Val
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290 295 300

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305 310 315 320

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Gln Lys Glu Gly Glu Gln Asn Gln Gln Thr Gln Gln Gln Gln Ile Leu
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Ala Ala Pro Leu Ser Gly Gln Thr Phe Thr Thr Gln Ala Ile Ser Gln
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Glu Thr Leu Gln Asn Leu Gln Leu Gln Ala Val Pro Asn Ser Gly Pro
385 390 395 400

Ile Ile Ile Arg Thr Pro Thr Val Gly Pro Asn Gly Gln Val Ser Trp
405 410 415

Gln Thr Leu Gln Leu Gln Asn Leu Gln Val Gln Asn Pro Gln Ala Gln
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Thr Ile Thr Leu Ala Pro Met Gln Gly Val Ser Leu Gly Gln Thr Ser
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His Pro Ile Gln Gly Leu Pro Leu Ala Ile Ala Asn Ala Pro Gly Asp
500 505 510

His Gly Ala Gln Leu Gly Leu His Gly Ala Gly Gly Asp Gly Ile His
515 520 525

Asp Asp Thr Ala Gly Gly Glu Glu Gly Glu Asn Ser Pro Asp Ala Gln
530 535 540

Pro Gln Ala Gly Arg Arg Thr Arg Arg Glu Ala Cys Thr Cys Pro Tyr
545 550 555 560

Cys Lys Asp Ser Glu Gly Arg Gly Ser Gly Asp Pro Gly Lys Lys Lys
565 570 575

Gln His Ile Cys His Ile Gln Gly Cys Gly Lys Val Tyr Gly Lys Thr
580 585 590

Ser His Leu Arg Ala His Leu Arg Trp His Thr Gly Glu Arg Pro Phe
595 600 605

Met Cys Thr Trp Ser Tyr Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu
610 615 620

Leu Gln Arg His Lys Arg Thr His Thr Gly Glu Lys Lys Phe Ala Cys
625 630 635 640

Pro Glu Cys Pro Lys Arg Phe Met Arg Ser Asp His Leu Ser Lys His
645 650 655

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Ile Lys Thr His Gln Asn Lys Lys Gly Gly Pro Gly Val Ala Leu Ser
660 665 670

Val Gly Thr Leu Pro Leu Asp Ser Gly Ala Gly Ser Glu Gly Ser Gly
675 680 685

Thr Ala Thr Pro Ser Ala Leu Ile Thr Thr Asn Met Val Ala Met Glu
690 695 700

Ala Ile Cys Pro Glu Gly Ile Ala Arg Leu Ala Asn Ser Gly Ile Asn
705 710 715 720

Val Met Gln Val Ala Asp Leu Gln Ser Ile Asn Ile Ser Gly Asn Gly
725 730 735

Phe

<210> 75
<211> 781
<212> PRT
<213> Mus musculus

<400> 75

Met Ser Asp Gln Asp His Ser Met Asp Glu Val Thr Ala Val Val Lys
1 5 10 15

Ile Glu Lys Asp Val Gly Gly Asn Asn Gly Gly Ser Gly Asn Gly Gly
20 25 30

Gly Ala Ala Phe Ser Gln Thr Arg Ser Ser Ser Thr Gly Ser Ser Ser
35 40 45

Ser Ser Gly Gly Gly Gly Gly Gln Glu Ser Gln Pro Ser Pro Leu Ala
50 55 60

Leu Leu Ala Ala Thr Cys Ser Arg Ile Glu Ser Pro Asn Glu Asn Ser

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65		70		75		80
Asn	Asn	Ser	Gln	Gly	Pro	Asp
			85			95
				90		
Leu	Thr	Ala	Ala	Gln	Leu	Asp
		100				110
				105		
Ser	Ser	Ser	Ser	Gly	Ala	Asp
		115				125
				120		
Ser	Thr	Asn	Gly	Ser	Glu	Asp
	130					140
				135		
Gln	Tyr	Val	Val	Ala	Ala	Asp
145				150		160
Thr	Gly	Leu	Pro	Gly	Val	Asp
				165		175
Gln	Phe	Gln	Thr	Val	Asp	Asp
		180				190
Ala	Gln	Val	Gln	Gln	Asp	Asp
		195				205
Ala	Asn	Gln	Gln	Ile	Ile	Asp
	210					220
Ala	Ala	Met	Pro	Asn	Leu	Asp
225					230	240
Ala	Asn	Asn	Val	Leu	Ser	Asp
			245			255
Val	Ala	Leu	Asn	Gly	Asn	Asp

260

265

270

Ala Ala Thr Leu Thr Pro Ser Ser Gln Ala Gly Thr Ile Ser Ser Ser
 275 280 285

Gly Ser Gln Glu Ser Ser Ser Gln Pro Val Thr Ser Gly Thr Ala Ile
 290 295 300

Ser Ser Ala Ser Leu Val Ser Ser Gln Ala Ser Ser Ser Ser Phe Phe
 305 310 315 320

Thr Asn Ala Asn Ser Tyr Ser Thr Thr Thr Thr Thr Ser Asn Met Gly
 325 330 335

Ile Met Asn Phe Thr Ser Ser Gly Ser Ser Gly Thr Ser Ser Gln Gly
 340 345 350

Gln Thr Pro Gln Arg Val Gly Gly Leu Gln Gly Ser Asp Ser Leu Asn
 355 360 365

Ile Gln Gln Asn Gln Thr Ser Gly Gly Ser Leu Gln Gly Ser Gln Gln
 370 375 380

Lys Glu Gly Glu Gln Ser Gln Gln Thr Gln Gln Gln Gln Ile Leu Ile
 385 390 395 400

Gln Pro Gln Leu Val Gln Gly Gly Gln Ala Leu Gln Ala Leu Gln Ala
 405 410 415

Ala Pro Leu Ser Gly Gln Thr Phe Thr Thr Gln Ala Ile Ser Gln Glu
 420 425 430

Thr Leu Gln Asn Leu Gln Leu Gln Ala Val Gln Asn Ser Gly Pro Ile
 435 440 445

Ile Ile Arg Thr Pro Thr Val Gly Pro Asn Gly Gln Val Ser Trp Gln

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450

455

460

Thr Leu Gln Leu Gln Asn Leu Gln Val Gln Asn Pro Gln Ala Gln Thr
465 470 475 480

Ile Thr Leu Ala Pro Met Gln Gly Val Ser Leu Gly Gln Thr Ser Ser
485 490 495

Ser Asn Thr Thr Leu Thr Pro Ile Ala Ser Ala Ala Ser Ile Pro Ala
500 505 510

Gly Thr Val Thr Val Asn Ala Ala Gln Leu Ser Ser Met Pro Gly Leu
515 520 525

Gln Thr Ile Asn Leu Ser Ala Leu Gly Thr Ser Gly Ile Gln Val His
530 535 540

Gln Leu Pro Gly Leu Pro Leu Ala Ile Ala Asn Thr Pro Gly Asp His
545 550 555 560

Gly Thr Gln Leu Gly Leu His Gly Ser Gly Gly Asp Gly Ile His Asp
565 570 575

Glu Thr Ala Gly Gly Glu Gly Glu Asn Ser Ser Asp Leu Gln Pro Gln
580 585 590

Ala Gly Arg Arg Thr Arg Arg Glu Ala Cys Thr Cys Pro Tyr Cys Lys
595 600 605

Asp Ser Glu Gly Arg Ala Ser Gly Asp Pro Gly Lys Lys Lys Gln His
610 615 620

Ile Cys His Ile Gln Gly Cys Gly Lys Val Tyr Gly Lys Thr Ser His
625 630 635 640

Leu Arg Ala His Leu Arg Trp His Thr Gly Glu Arg Pro Phe Met Cys

645

650

655

Asn Trp Ser Tyr Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu Leu Gln
 660 665 670

Arg His Lys Arg Thr His Thr Gly Glu Lys Lys Phe Ala Cys Pro Glu
 675 680 685

Cys Pro Lys Arg Phe Met Arg Ser Asp His Leu Ser Lys His Ile Lys
 690 695 700

Thr His Gln Asn Lys Lys Gly Gly Pro Gly Val Ala Leu Ser Val Gly
 705 710 715 720

Thr Leu Pro Leu Asp Ser Gly Ala Gly Ser Glu Gly Thr Ala Thr Pro
 725 730 735

Ser Ala Leu Ile Thr Thr Asn Met Val Ala Met Glu Ala Ile Cys Pro
 740 745 750

Glu Gly Ile Ala Arg Leu Ala Asn Ser Gly Ile Asn Val Met Gln Val
 755 760 765

Thr Glu Leu Gln Ser Ile Asn Ile Ser Gly Asn Gly Phe
 770 775 780

<210> 76

<211> 10

<212> DNA

<213> Artificial Sequence

<220>

<223> Sp1 binding site

<400> 76

kgggcggrry

10