SEQUENCE LISTING

<110> FirstString Research Inc.
Ghatnekar, Gautam

<120> TOPICAL GELS CONTAINING ALPHA CONNEXIN C-TERMINAL (ACT) PEPTIDES

<130> FIRS-006/01WO

<150> US 61/605,528
<151> 2012-03-01

<160> 92

<170> PatentIn version 3.5

<210> 1
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Pro Ser Ser Arg Ala Ser Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp
1 5 10 15

Asp Leu Glu Ile
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Arg Pro Arg Pro Asp Asp Leu Glu Ile
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Arg Pro Arg Pro Asp Asp Leu Glu Val
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Arg Pro Arg Pro Asp Asp Val Pro Val
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Lys Ala Arg Ser Asp Asp Leu Ser Val
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<213> Drosophila melanogaster

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Arg Gln Pro Lys Ile Trp Phe Pro Asn Arg Arg Lys Pro Trp Lys Lys
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Arg Gln Pro Lys Ile Trp Phe Pro Asn Arg Arg Lys Pro Trp Lys Lys
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Pro Ser Ser Arg Ala Ser Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp
20 25 30

Asp Leu Glu Ile
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<400> 9

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1 5 10 15

Arg Pro Arg Pro Asp Asp Leu Glu Ile
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Arg Pro Arg Pro Asp Asp Leu Glu Val
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Arg Gln Pro Lys Ile Trp Phe Pro Asn Arg Arg Lys Pro Trp Lys Lys
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Arg Pro Arg Pro Asp Asp Val Pro Val
20 25

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<400> 12

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Lys Ala Arg Ser Asp Asp Leu Ser Val
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acgacctgga gatc 74

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<213> Human immunodeficiency virus

<400> 14

Gly Arg Lys Lys Arg Arg Gln Arg Pro Pro Gln
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<213> Drosophila melanogaster

<400> 15

Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys
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<210> 16
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<212> PRT
<213> Drosophila melanogaster

<400> 16

Arg Gln Ile Ala Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Ala Ala
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<213> Human immunodeficiency virus

<400> 17

Arg Lys Lys Arg Arg Gln Arg Arg Arg
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Arg Leu Leu Arg Lys
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Gly Trp Thr Leu Asn Ser Ala Gly Tyr Leu Leu Gly Lys Ile Asn Lys
1 5 10 15

Ala Leu Ala Ala Leu Ala Lys Lys Ile Leu
20 25

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<220>
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Leu Ala

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Ala Ala Val Ala Leu Leu Pro Ala Val Leu Leu Ala Leu Leu Ala Pro
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<220>
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Val Pro Met Leu Lys Pro Met Leu Lys Glu
1 5 10

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<211> 28

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<220>
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Met Ala Asn Leu Gly Tyr Trp Leu Leu Ala Leu Phe Val Thr Met Trp
1 5 10 15

Thr Asp Val Gly Leu Cys Lys Lys Arg Pro Lys Pro
20 25

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<213> Mus musculus

<400> 24

Leu Leu Ile Ile Leu Arg Arg Arg Ile Arg Lys Gln Ala His Ala His
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Ser Lys

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Lys Lys Arg Lys Val
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Arg Gly Gly Arg Leu Ser Tyr Ser Arg Arg Arg Phe Ser Thr Ser Thr
1 5 10 15

Gly Arg

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<400> 27

Ser Asp Leu Trp Glu Met Met Met Val Ser Leu Ala Cys Gln Tyr
1 5 10 15

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Thr Ser Pro Leu Asn Ile His Asn Gly Gln Lys Leu
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<210> 29
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<212> PRT
<213> Gallus gallus

<400> 29

Pro Ser Arg Ala Ser Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp Asp
1 5 10 15

Leu Glu Ile

<210> 30
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<212> PRT
<213> Homo sapiens

<400> 30

Gly Ser Asn Lys Ser Thr Ala Ser Ser Lys Ser Pro Asp Pro Lys Asn
1 5 10 15

Ser Val Trp Ile
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<210> 31
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<213> Gallus gallus

<400> 31

Gly Ser Asn Lys Ser Ser Ala Ser Ser Lys Ser Gly Asp Gly Lys Asn
1 5 10 15

Ser Val Trp Ile
20

<210> 32
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<212> PRT
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<400> 32

Gly Arg Ala Ser Lys Ala Ser Arg Ala Ser Ser Gly Arg Ala Arg Pro
1 5 10 15

Glu Asp Leu Ala Ile
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<210> 33
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<213> Homo sapiens

<400> 33

Gly Ser Ala Ser Ser Arg Asp Gly Lys Thr Val Trp Ile
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<213> Pan troglodytes

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Pro Arg Val Ser Val Pro Asn Phe Gly Arg Thr Gln Ser Ser Asp Ser
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Ala Tyr Val

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<213> Gallus gallus

<400> 35

Pro Arg Met Ser Met Pro Asn Phe Gly Arg Thr Gln Ser Ser Asp Ser
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Ala Tyr Val

<210> 36
<211> 21
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<213> Homo sapiens

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Pro Arg Ala Gly Ser Glu Lys Gly Ser Ala Ser Ser Arg Asp Gly Lys

1 5 10 15

Thr Thr Val Trp Ile
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Gly Tyr His Ser Asp Lys Arg Arg Leu Ser Lys Ala Ser Ser Lys Ala
1 5 10 15

Arg Ser Asp Asp Leu Ser Val
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<210> 38
<211> 19
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<400> 38

Pro Leu Ser Arg Leu Ser Lys Ala Ser Ser Arg Ala Arg Ser Asp Asp
1 5 10 15

Leu Thr Val

<210> 39
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Pro Asn His Val Val Ser Leu Thr Asn Asn Leu Ile Gly Arg Arg Val
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Pro Thr Asp Leu Gln Ile
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<210> 40
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<213> Rattus norvegicus

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Pro Ser Cys Val Ser Ser Ser Ala Val Leu Thr Thr Ile Cys Ser Ser
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Asp Gln Val Val Pro Val Gly Leu Ser Ser Phe Tyr Met
20 25

<210> 41

<211> 21
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<213> Ovis aries

<400> 41

Gly Arg Ser Ser Lys Ala Ser Lys Ser Ser Gly Gly Arg Ala Arg Ala
1 5 10 15

Ala Asp Leu Ala Ile
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<210> 42
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Leu Cys Tyr Leu Leu Ile Arg Tyr Cys Ser Gly Lys Ser Lys Lys Pro
1 5 10 15

Val

<210> 43
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<400> 43

Gly Gln Lys Pro Pro Ser Arg Pro Ser Ser Ser Ala Ser Lys Lys Gln
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Tyr Val

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<400> 44

Ser Ser Arg Ala Ser Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp Asp
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Leu Glu Val

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<212> PRT
<213> Artificial Sequence

<220>

<223> conservative Cx43 variant

<400> 45

Arg Pro Lys Pro Asp Asp Leu Glu Ile
1 5

<210> 46
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<400> 46

Ser Ser Arg Ala Ser Ser Arg Ala Ser Ser Arg Pro Lys Pro Asp Asp
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Leu Glu Ile

<210> 47
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<400> 47

Arg Pro Lys Pro Asp Asp Leu Asp Ile
1 5

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Ser Ser Arg Ala Ser Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp Asp
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Leu Asp Ile

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Ser Ser Arg Ala Ser Thr Arg Ala Ser Ser Arg Pro Arg Pro Asp Asp
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Leu Glu Ile

<210> 50
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Arg Pro Arg Pro Glu Asp Leu Glu Ile
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<210> 51
<211> 19
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Ser Ser Arg Ala Ser Ser Arg Ala Ser Ser Arg Pro Arg Pro Glu Asp
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Leu Glu Ile

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<400> 52

Gly Asp Gly Lys Asn Ser Val Trp Val
1 5

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<220>
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<400> 53

Ser Lys Ala Gly Ser Asn Lys Ser Thr Ala Ser Ser Lys Ser Gly Asp
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Gly Lys Asn Ser Val Trp Val
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Gly Gln Lys Pro Pro Ser Arg Pro Ser Ser Ser Ala Ser Lys Lys Leu
1 5 10 15

Tyr Val

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<220>
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Arg Gln Pro Lys Ile Trp Phe Pro Asn Arg Arg Lys Pro Trp Lys Ile
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Glu Leu Asp Asp Pro Arg Pro Arg
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Gly Arg Lys Lys Arg Arg Gln Arg Pro Pro Gln Arg Pro Arg Pro Asp
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Asp Leu Glu Ile
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Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys
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Arg Pro Arg Pro Asp Asp Leu Glu Ile
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Arg Gln Ile Ala Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Ala Ala
1 5 10 15

Arg Pro Arg Pro Asp Asp Leu Glu Ile
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<400> 59

Arg Lys Lys Arg Arg Gln Arg Arg Arg Arg Pro Arg Pro Asp Asp Leu
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Glu Ile

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Thr Arg Ser Ser Arg Ala Gly Leu Gln Phe Pro Val Gly Arg Val His
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Arg Leu Leu Arg Lys Arg Pro Arg Pro Asp Asp Leu Glu Ile
20 25 30

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<223> Transportan/ACT 1 fusion peptide sequence

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Gly Trp Thr Leu Asn Ser Ala Gly Tyr Leu Leu Gly Lys Ile Asn Lys
1 5 10 15

Ala Leu Ala Ala Leu Ala Lys Lys Ile Leu Arg Pro Arg Pro Asp Asp
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Leu Glu Ile
35

<210> 62
<211> 27
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<223> MAP/ACT 1 fusion peptide sequence

<400> 62

Lys Leu Ala Leu Lys Leu Ala Leu Lys Ala Leu Lys Ala Ala Leu Lys
1 5 10 15

Leu Ala Arg Pro Arg Pro Asp Asp Leu Glu Ile
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<212> PRT
<213> Artificial Sequence

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<400> 63

Ala Ala Val Ala Leu Leu Pro Ala Val Leu Leu Ala Leu Leu Ala Pro
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Arg Pro Arg Pro Asp Asp Leu Glu Ile
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Val Pro Met Leu Lys Pro Met Leu Lys Glu Arg Pro Arg Pro Asp Asp
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Leu Glu Ile

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Met Ala Asn Leu Gly Tyr Trp Leu Leu Ala Leu Phe Val Thr Met Trp
1 5 10 15

Thr Asp Val Gly Leu Cys Lys Lys Arg Pro Lys Pro Arg Pro Arg Pro
20 25 30

Asp Asp Leu Glu Ile
35

<210> 66
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<220>
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<400> 66

Leu Leu Ile Ile Leu Arg Arg Arg Ile Arg Lys Gln Ala His Ala His
1 5 10 15

Ser Lys Arg Pro Arg Pro Asp Asp Leu Glu Ile
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Lys Glu Thr Trp Trp Glu Thr Trp Trp Thr Glu Trp Ser Gln Pro Lys
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Lys Lys Arg Lys Val Arg Pro Arg Pro Asp Asp Leu Glu Ile
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<400> 68

Arg Gly Gly Arg Leu Ser Tyr Ser Arg Arg Arg Phe Ser Thr Ser Thr
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Gly Arg Arg Pro Arg Pro Asp Asp Leu Glu Ile
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Ser Asp Leu Trp Glu Met Met Met Val Ser Leu Ala Cys Gln Tyr Arg
1 5 10 15

Pro Arg Pro Asp Asp Leu Glu Ile
20

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Thr Ser Pro Leu Asn Ile His Asn Gly Gln Lys Leu Arg Pro Arg Pro
1 5 10 15

Asp Asp Leu Glu Ile
20

<210> 71
<211> 122
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<213> Homo sapiens

<400> 71

Lys Gly Lys Ser Asp Pro Tyr His Ala Thr Ser Gly Ala Leu Ser Pro
1 5 10 15

Ala Lys Asp Cys Gly Ser Gln Lys Tyr Ala Tyr Phe Asn Gly Cys Ser
20 25 30

Ser Pro Thr Ala Pro Leu Ser Pro Met Ser Pro Pro Gly Tyr Lys Leu
35 40 45

Val Thr Gly Asp Arg Asn Asn Ser Ser Cys Arg Asn Tyr Asn Lys Gln
50 55 60

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Ala Ser Glu Gln Asn Trp Ala Asn Tyr Ser Ala Glu Gln Asn Arg Met
65                  70                  75                  80


Gly Gln Ala Gly Ser Thr Ile Ser Asn Ser His Ala Gln Pro Phe Asp
                85                  90                  95


Phe Pro Asp Asp Asn Gln Asn Ser Lys Lys Leu Ala Ala Gly His Glu
            100                 105                 110


Leu Gln Pro Leu Ala Ile Val Asp Gln Arg
        115                 120


<210>  72
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<212>  PRT
<213>  Gallus gallus

<400>  72

Lys Thr Asp Pro Tyr Ser His Ser Gly Thr Met Ser Pro Ser Lys Asp
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Cys Gly Ser Pro Lys Tyr Ala Tyr Tyr Asn Gly Cys Ser Ser Pro Thr
            20                  25                  30


Ala Pro Leu Ser Pro Met Ser Pro Pro Gly Tyr Lys Leu Val Thr Gly
        35                  40                  45


Asp Arg Asn Asn Ser Ser Cys Arg Asn Tyr Asn Lys Gln Ala Ser Glu
    50                  55                  60


Gln Asn Trp Ala Asn Tyr Ser Ala Glu Gln Asn Arg Met Gly Gln Ala
65                  70                  75                  80


Gly Ser Thr Ile Ser Asn Ser His Ala Gln Pro Phe Asp Phe Ala Asp
                85                  90                  95


Glu His Gln Asn Thr Lys Lys Leu Ala Ser Gly His Glu Leu Gln Pro
            100                 105                 110


Leu Thr Ile Val Asp Gln Arg Pro
        115                 120


<210>  73
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<212>  PRT
<213>  Homo sapiens

<400>  73

Leu Gly Phe Gly Thr Ile Arg Asp Ser Leu Asn Ser Lys Arg Arg Glu
1               5                   10                  15


Leu Glu Asp Pro Gly Ala Tyr Asn Tyr Pro Phe Thr Trp Asn Thr Pro
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20 25 30

Ser Ala Pro Pro Gly Tyr Asn Ile Ala Val Lys Pro Asp Gln Ile Gln
35 40 45

Tyr Thr Glu Leu Ser Asn Ala Lys Ile Ala Tyr Lys Gln Asn Lys Ala
50 55 60

Asn Thr Ala Gln Glu Gln Gln Tyr Gly Ser His Glu Glu Asn Leu Pro
65 70 75 80

Ala Asp Leu Glu Ala Leu Gln Arg Glu Ile Arg Met Ala Gln Glu Arg
85 90 95

Leu Asp Leu Ala Val Gln Ala Tyr Ser His Gln Asn Asn Pro His Gly
100 105 110

Pro Arg Glu Lys Lys Ala Lys Val
115 120

<210> 74
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<212> PRT
<213> Gallus gallus

<400> 74

Gly Phe Gly Thr Ile Arg Asp Thr Leu Asn Asn Lys Arg Lys Glu Leu
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Glu Asp Ser Gly Thr Tyr Asn Tyr Pro Phe Thr Trp Asn Thr Pro Ser
20 25 30

Ala Pro Pro Gly Tyr Asn Ile Ala Val Lys Pro Asp Gln Met Gln Tyr
35 40 45

Thr Glu Leu Ser Asn Ala Lys Met Ala Tyr Lys Gln Asn Lys Ala Asn
50 55 60

Ile Ala Gln Glu Gln Gln Tyr Gly Ser Asn Glu Glu Asn Ile Pro Ala
65 70 75 80

Asp Leu Glu Asn Leu Gln Arg Glu Ile Lys Val Ala Gln Glu Arg Leu
85 90 95

Asp Met Ala Ile Gln Ala Tyr Asn Asn Gln Asn Asn Pro Gly Ser Ser
100 105 110

Ser Arg Glu Lys Lys Ser Lys Ala
115 120

<210> 75
<211> 120

<212> PRT
<213> Homo sapiens

<400> 75

Pro Tyr Leu Val Asp Cys Phe Val Ser Arg Pro Thr Glu Lys Thr Ile
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Phe Ile Ile Phe Met Leu Val Val Gly Leu Ile Ser Leu Val Leu Asn
20 25 30

Leu Leu Glu Leu Val His Leu Leu Cys Arg Cys Leu Ser Arg Gly Met
35 40 45

Arg Ala Arg Gln Gly Gln Asp Ala Pro Pro Thr Gln Gly Thr Ser Ser
50 55 60

Asp Pro Tyr Thr Asp Gln Val Phe Phe Tyr Leu Pro Val Gly Gln Gly
65 70 75 80

Pro Ser Ser Pro Pro Cys Pro Thr Tyr Asn Gly Leu Ser Ser Ser Glu
85 90 95

Gln Asn Trp Ala Asn Leu Thr Thr Glu Glu Arg Leu Ala Ser Ser Arg
100 105 110

Pro Pro Leu Phe Leu Asp Pro Pro
115 120

<210> 76
<211> 120
<212> PRT
<213> Rattus norvegicus

<400> 76

Cys Gly Ser Lys Glu His Gly Asn Arg Lys Met Arg Gly Arg Leu Leu
1 5 10 15

Leu Thr Tyr Met Ala Ser Ile Phe Phe Lys Ser Val Phe Glu Val Ala
20 25 30

Phe Leu Leu Ile Gln Trp Tyr Leu Tyr Gly Phe Thr Leu Ser Ala Val
35 40 45

Tyr Ile Cys Glu Gln Ser Pro Cys Pro His Arg Val Asp Cys Phe Leu
50 55 60

Ser Arg Pro Thr Glu Lys Thr Ile Phe Ile Leu Phe Met Leu Val Val
65 70 75 80

Ser Met Val Ser Phe Val Leu Asn Val Ile Glu Leu Phe Tyr Val Leu
85 90 95

Phe Lys Ala Ile Lys Asn His Leu Gly Asn Glu Lys Glu Glu Val Tyr
100 105 110

Cys Asn Pro Val Glu Leu Gln Lys
115 120

<210> 77
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<212> PRT
<213> Artificial Sequence

<220>
<223> enhanced green fluorescent protein

<400> 77

Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu
1 5 10 15

Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly
20 25 30

Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile
35 40 45

Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr
50 55 60

Leu Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys
65 70 75 80

Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu
85 90 95

Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu
100 105 110

Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly
115 120 125

Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr
130 135 140

Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn
145 150 155 160

Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser
165 170 175

Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly
180 185 190

Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu
195 200 205

Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe
210 215 220

Val Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys
225 230 235

<210> 78
<211> 60
<212> DNA
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<210> 79
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<400> 79
cggccccggc ccgacgacct ggagatc 27

<210> 80
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<400> 80
cggccccggc ccgacgacct ggaggtg 27

<210> 81
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<400> 81
cggccccggc ccgacgacgt gcccgtg 27

<210> 82
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<400> 82
aaggcccggt ccgacgacct gtccgtg 27

<210> 83
<211> 48
<212> DNA
<213> Drosophila melanogaster

<400> 83
cggcagccca agatctggtt ccccaaccgg cggaagccct ggaagaag 48

<210> 84
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<212> DNA
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<400> 84
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gcctcctccc gggcctcctc ccggccccgg cccgacgacc tggagatc 108

<210> 85
<211> 75
<212> DNA
<213> Artificial Sequence

<220>
<223> Antp/ACT 1 fusion nucleotide sequence

<400> 85
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<210> 86
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<220>
<223> Antp/ACT 3 fusion nucleotide sequence

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<212> DNA
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<220>
<223> Antp/ACT 4 fusion nucleotide sequence

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gacgacgtgc ccgtg 75

<210> 88
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<212> DNA
<213> Artificial Sequence

<220>
<223> Antp/ACT 5 fusion nucleotide sequence

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gacgacctgt ccgtg 75

<210> 89
<211> 20
<212> PRT
<213> Danio rerio

<400> 89

Pro Cys Ser Arg Ala Ser Ser Arg Met Ser Ser Arg Ala Arg Pro Asp
1 5 10 15

Asp Leu Asp Val
20

<210> 90
<211> 19
<212> PRT
<213> Gallus gallus

<400> 90

Pro Arg Val Ser Val Pro Asn Phe Gly Arg Thr Gln Ser Ser Asp Ser
1 5 10 15

Ala Tyr Val

<210> 91
<211> 19
<212> PRT
<213> Danio rerio

<400> 91

Pro Arg Met Ser Met Pro Asn Phe Gly Arg Thr Gln Ser Ser Asp Ser
1 5 10 15

Ala Tyr Val

<210> 92
<211> 32
<212> PRT
<213> Artificial Sequence

<220>
<223> Cx43 isoleucine deletion

<400> 92

Arg Gln Pro Lys Ile Trp Phe Pro Asn Arg Arg Lys Pro Trp Lys Lys
1 5 10 15

Arg Ala Ser Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp Asp Leu Glu
20 25 30