SEQUENCE LISTING

<110> TAIGA BIOTECHNOLOGIES, INC.

<120> EXPANSION OF ADULT STEM CELLS IN VITRO

<130> 106417-0182

<140> Not Yet Assigned
<141> Concurrently Herewith

<150> 61/776,422
<151> 2013-03-11

<150> 13/795659
<151> 2013-03-12

<160> 6

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 477
<212> PRT
<213> Artificial Sequence

<220>
<223> Fusion protein

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

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

<210> 2
<211> 1434
<212> DNA
<213> Artificial Sequence

<220>
<223> Fusion protein

<400> 2
atgaggaaga agcggagaca gcgacgaaga atgcccctca acgttagctt caccaacagg 60
aactatgacc tcgactacga ctcggtgcag ccgtatttct actgcgacga ggaggagaac 120
ttctaccagc agcagcagca gagcgagctg cagcccccgg cgcccagcga ggatatctgg 180
aagaaattcg agctgctgcc caccccgccc ctgtccccta gccgccgctc cgggctctgc 240
tcgccctcct acgttgcggt cacacccttc tcccttcggg gagacaacga cggcggtggc 300
gggagcttct ccacggccga ccagctggag atggtgaccg agctgctggg aggagacatg 360
gtgaaccaga gtttcatctg cgacccggac gacgagacct tcatcaaaaa catcatcatc 420
caggactgta tgtggagcgg cttctcggcc gccgccaagc tcgtctcaga gaagctggcc 480
tcctaccagg ctgcgcgcaa agacagcggc agcccgaacc ccgcccgcgg ccacagcgtc 540
tgctccacct ccagcttgta cctgcaggat ctgagcgccg ccgcctcaga gtgcatcgac 600
ccctcggtgg tcttccccta ccctctcaac gacagcagct cgcccaagtc ctgcgcctcg 660
caagactcca gcgccttctc tccgtcctcg gattctctgc tctcctcgac ggagtcctcc 720
ccgcagggca gccccgagcc cctggtgctc catgaggaga caccgcccac caccagcagc 780
gactctgagg aggaacaaga agatgaggaa gaaatcgatg ttgtttctgt ggaaaagagg 840
caggctcctg gcaaaaggtc agagtctgga tcaccttctg ctggaggcca cagcaaacct 900
cctcacagcc cactggtcct caagaggtgc cacgtctcca cacatcagca caactacgca 960
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gaggagaatg tcaagaggcg aacacacaac gtcttggagc gccagaggag gaacgagcta 1140
aaacggagct tttttgccct gcgtgaccag atcccggagt tggaaaacaa tgaaaaggcc 1200
cccaaggtag ttatccttaa aaaagccaca gcatacatcc tgtccgtcca agcagaggag 1260
caaaagctca tttctgaaga ggacttgttg cggaaacgac gagaacagtt gaaacacaaa 1320
cttgaacagc tacggaaggg cgagctcaat tcgaagcttg aaggtaagcc tatccctaac 1380
cctctcctcg gtctcgattc tacgcgtacc ggtcatcatc accatcacca ttga 1434

<210> 3
<211> 235
<212> PRT
<213> Artificial Sequence

<220>
<223> Fusion protein

<400> 3

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

<210> 4
<211> 708
<212> DNA
<213> Artificial Sequence

<220>
<223> Fusion protein

<400> 4

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aaccgggaga tagtgatgaa gtacatccat tataagctgt cgcagagggc tacgagtggg 120
atctcgatcg aggccgcggg gcctgcgctc agcccggtgc cacctgtggt ccacctgacc 180
ctccgccagg ccggcgacga cttctcccgc cgctaccgcc gcgacttcgc cgagatgtcc 240
agccagctgc acctgacgcc cttcaccgcg cggggatgct ttgccacggt ggtggaggag 300
ctcttcaggg acggggtgaa ctgggggagg attgtggcct tctttgagtt cggtggggtc 360
atgtgtgtgg agagcgtcaa ccgggagatg tcgcccctgg tggacaacat cgccctgtgg 420
atgactgagt acctgaaccg gcacctgcac acctggatcc aggataacgg aggctgggat 480
gcctttgtgg aactgtacgg ccccagcatg cggcctctgt ttgatttctc ctggctgtct 540
ctgaagactc tgctcagttt ggccctggtg ggagcttgca tcaccctggg tgcctatctg 600
agccacaaga agggcgagct caattcgaag cttgaaggta agcctatccc taaccctctc 660
ctcggtctcg attctacgcg taccggtcat catcaccatc accattga              708
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<210> 5
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> TAT transduction domain from HIV

<400> 5

```
Arg Lys Lys Arg Arg Gln Arg Arg Arg
 1               5
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<210> 6

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

<220>
<223> Artificial transduction domain

<400> 6
Tyr Ala Arg Ala Ala Ala Arg Gln Ala Arg Ala
 1   5   10