SEQUENCE LISTING

<110> TEL HASHOMER MEDICAL RESEARCH INFRASTRUCTURE AND SERVICES LTD.
ORGENESIS LTD.
FERBER, Sarah

<120> TRANSDIFFERENTIATED CELL POPULATIONS AND METHODS OF USE THEREOF

<130> P-578944-PC

<150> 62/502,796
<151> 2017-05-08

<150> 62/610,300
<151> 2017-12-26

<160> 37

<170> PatentIn version 3.5

<210> 1
<211> 51
<212> DNA
<213> Rattus rattus

<400> 1
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<210> 2
<211> 51
<212> DNA
<213> Mus musculus

<400> 2
tcacatgaaa ggatcaaagc aaatccgctt ctattcttgg aaacagagca a 51

<210> 3
<211> 51
<212> DNA
<213> Homo sapiens

<400> 3
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<210> 4
<211> 283
<212> PRT

<213> Homo sapiens

<400> 4

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Met Asn Gly Glu Glu Gln Tyr Tyr Ala Ala Thr Gln Leu Tyr Lys Asp
1               5                  10                  15


Pro Cys Ala Phe Gln Arg Gly Pro Ala Pro Glu Phe Ser Ala Ser Pro
            20                  25                  30


Pro Ala Cys Leu Tyr Met Gly Arg Gln Pro Pro Pro Pro Pro Pro His
        35                  40                  45


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


Ile Ser Pro Tyr Glu Val Pro Pro Leu Ala Asp Asp Pro Ala Val Ala
65                  70                  75                  80


His Leu His His His Leu Pro Ala Gln Leu Ala Leu Pro His Pro Pro
                85                  90                  95


Ala Gly Pro Phe Pro Glu Gly Ala Glu Pro Gly Val Leu Glu Glu Pro
            100                 105                 110


Asn Arg Val Gln Leu Pro Phe Pro Trp Met Lys Ser Thr Lys Ala His
        115                 120                 125


Ala Trp Lys Gly Gln Trp Ala Gly Gly Ala Tyr Ala Ala Glu Pro Glu
    130                 135                 140


Glu Asn Lys Arg Thr Arg Thr Ala Tyr Thr Arg Ala Gln Leu Leu Glu
145                 150                 155                 160


Leu Glu Lys Glu Phe Leu Phe Asn Lys Tyr Ile Ser Arg Pro Arg Arg
                165                 170                 175


Val Glu Leu Ala Val Met Leu Asn Leu Thr Glu Arg His Ile Lys Ile
            180                 185                 190
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Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Glu Glu Asp Lys Lys
        195                 200                 205

Arg Gly Gly Gly Thr Ala Val Gly Gly Gly Gly Val Ala Glu Pro Glu
    210                 215                 220

Gln Asp Cys Ala Val Thr Ser Gly Glu Glu Leu Leu Ala Leu Pro Pro
225                 230                 235                 240

Pro Pro Pro Pro Gly Gly Ala Val Pro Pro Ala Ala Pro Val Ala Ala
                245                 250                 255

Arg Glu Gly Arg Leu Pro Pro Gly Leu Ser Ala Ser Pro Gln Pro Ser
            260                 265                 270

Ser Val Ala Pro Arg Arg Pro Gln Glu Pro Arg
        275                 280
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<210> 5
<211> 852
<212> DNA
<213> Homo sapiens

<400> 5

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cagcccccgc cgccgccgcc gcacccgttc cctggcgccc tgggcgcgct ggagcagggc      180

agcccccgg acatctcccc gtacgaggtg ccccccctcg ccgacgaccc cgcggtggcg      240

caccttcacc accacctccc ggctcagctc gcgctccccc acccgcccgc cgggcccttc      300

ccggagggag ccgagccggg cgtcctggag gagcccaacc gcgtccagct gcctttccca      360

tggatgaagt ctaccaaagc tcacgcgtgg aaaggccagt gggcaggcgg cgcctacgct      420

gcggagccgg aggagaacaa gcggacgcgc acggcctaca cgcgcgcaca gctgctagag      480

ctggagaagg agttcctatt caacaagtac atctcacggc cgcgccgggt ggagctggct      540
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gtcatgttga acttgaccga gagacacatc aagatctggt tccaaaaccg ccgcatgaag 600

tggaaaaagg aggaggacaa gaagcgcggc ggcgggacag ctgtcggggg tggcggggtc 660

gcggagcctg agcaggactg cgccgtgacc tccggcgagg agcttctggc gctgccgccg 720

ccgccgcccc ccggaggtgc tgtgccgccc gctgcccccg ttgccgcccg agagggccgc 780

ctgccgcctg gccttagcgc gtcgccacag ccctccagcg tcgcgcctcg gcggccgcag 840

gaaccacgat ga 852

<210> 6
<211> 356
<212> PRT
<213> Homo sapiens

<400> 6

Met Thr Lys Ser Tyr Ser Glu Ser Gly Leu Met Gly Glu Pro Gln Pro
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Gln Gly Pro Pro Ser Trp Thr Asp Glu Cys Leu Ser Ser Gln Asp Glu
20 25 30

Glu His Glu Ala Asp Lys Lys Glu Asp Asp Leu Glu Thr Met Asn Ala
35 40 45

Glu Glu Asp Ser Leu Arg Asn Gly Gly Glu Glu Glu Asp Glu Asp Glu
50 55 60

Asp Leu Glu Glu Glu Glu Glu Glu Glu Glu Glu Asp Asp Asp Gln Lys
65 70 75 80

Pro Lys Arg Arg Gly Pro Lys Lys Lys Lys Met Thr Lys Ala Arg Leu
85 90 95

Glu Arg Phe Lys Leu Arg Arg Met Lys Ala Asn Ala Arg Glu Arg Asn
100 105 110

Arg Met His Gly Leu Asn Ala Ala Leu Asp Asn Leu Arg Lys Val Val
115 120 125

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Pro Cys Tyr Ser Lys Thr Gln Lys Leu Ser Lys Ile Glu Thr Leu Arg
    130                 135                 140

Leu Ala Lys Asn Tyr Ile Trp Ala Leu Ser Glu Ile Leu Arg Ser Gly
145                 150                 155                 160

Lys Ser Pro Asp Leu Val Ser Phe Val Gln Thr Leu Cys Lys Gly Leu
                165                 170                 175

Ser Gln Pro Thr Thr Asn Leu Val Ala Gly Cys Leu Gln Leu Asn Pro
            180                 185                 190

Arg Thr Phe Leu Pro Glu Gln Asn Gln Asp Met Pro Pro His Leu Pro
        195                 200                 205

Thr Ala Ser Ala Ser Phe Pro Val His Pro Tyr Ser Tyr Gln Ser Pro
    210                 215                 220

Gly Leu Pro Ser Pro Pro Tyr Gly Thr Met Asp Ser Ser His Val Phe
225                 230                 235                 240

His Val Lys Pro Pro Pro His Ala Tyr Ser Ala Ala Leu Glu Pro Phe
                245                 250                 255

Phe Glu Ser Pro Leu Thr Asp Cys Thr Ser Pro Ser Phe Asp Gly Pro
            260                 265                 270

Leu Ser Pro Pro Leu Ser Ile Asn Gly Asn Phe Ser Phe Lys His Glu
        275                 280                 285

Pro Ser Ala Glu Phe Glu Lys Asn Tyr Ala Phe Thr Met His Tyr Pro
    290                 295                 300

Ala Ala Thr Leu Ala Gly Ala Gln Ser His Gly Ser Ile Phe Ser Gly
305                 310                 315                 320
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Thr Ala Ala Pro Arg Cys Glu Ile Pro Ile Asp Asn Ile Met Ser Phe
325 330 335

Asp Ser His Ser His His Glu Arg Val Met Ser Ala Gln Leu Asn Ala
340 345 350

Ile Phe His Asp
355

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<211> 1071
<212> DNA
<213> Homo sapiens

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gacgacctcg aagccatgaa cgcagaggag gactcactga ggaacggggg agaggaggag 180

gacgaagatg aggacctgga agaggaggaa gaagaggaag aggaggatga cgatcaaaag 240

cccaagagac gcggccccaa aaagaagaag atgactaagg ctcgcctgga gcgttttaaa 300

ttgagacgca tgaaggctaa cgcccgggag cggaaccgca tgcacggact gaacgcggcg 360

ctagacaacc tgcgcaaggt ggtgccttgc tattctaaga cgcagaagct gtccaaaatc 420

gagactctgc gcttggccaa gaactacatc tgggctctgt cggagatctc gcgctcaggc 480

aaaagcccag acctggtctc cttcgttcag acgctttgca agggcttatc ccaacccacc 540

accaacctgg ttgcgggctg cctgcaactc aatcctcgga cttttctgcc tgagcagaac 600

caggacatgc ccccgcacct gccgacggcc agcgcttcct tccctgtaca cccctactcc 660

taccagtcgc ctgggctgcc cagtccgcct tacggtacca tggacagctc ccatgtcttc 720

cacgttaagc ctccgccgca cgcctacagc gcagcgctgg agcccttctt tgaaagccct 780

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catcatgagc gagtcatgag tgcccagctc aatgccatat ttcatgatta g 1071

<210> 8
<211> 353
<212> PRT
<213> Homo sapiens

<400> 8

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

Lys Glu Pro Pro Glu Ala Glu Arg Phe Cys His Arg Leu Pro Pro Gly
35 40 45

Ser Leu Ser Ser Thr Pro Leu Ser Thr Pro Cys Ser Ser Val Pro Ser
50 55 60

Ser Pro Ser Phe Cys Ala Pro Ser Pro Gly Thr Gly Gly Gly Gly Gly
65 70 75 80

Ala Gly Gly Gly Gly Gly Ser Ser Gln Ala Gly Gly Ala Pro Gly Pro
85 90 95

Pro Ser Gly Gly Pro Gly Ala Val Gly Gly Thr Ser Gly Lys Pro Ala
100 105 110

Leu Glu Asp Leu Tyr Trp Met Ser Gly Tyr Gln His His Leu Asn Pro
115 120 125

Glu Ala Leu Asn Leu Thr Pro Glu Asp Ala Val Glu Ala Leu Ile Gly
130 135 140

Ser Gly His His Gly Ala His His Gly Ala His His Pro Ala Ala Ala
145 150 155 160

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Ala Ala Tyr Glu Ala Phe Arg Gly Pro Gly Phe Ala Gly Gly Gly Gly
                165                 170                 175

Ala Asp Asp Met Gly Ala Gly His His His Gly Ala His His Ala Ala
            180                 185                 190

His His His His Ala Ala His His His His His His His His His His
        195                 200                 205

Gly Gly Ala Gly His Gly Gly Gly Ala Gly His His Val Arg Leu Glu
    210                 215                 220

Glu Arg Phe Ser Asp Asp Gln Leu Val Ser Met Ser Val Arg Glu Leu
225                 230                 235                 240

Asn Arg Gln Leu Arg Gly Phe Ser Lys Glu Glu Val Ile Arg Leu Lys
                245                 250                 255

Gln Lys Arg Arg Thr Leu Lys Asn Arg Gly Tyr Ala Gln Ser Cys Arg
            260                 265                 270

Phe Lys Arg Val Gln Gln Arg His Ile Leu Glu Ser Glu Lys Cys Gln
        275                 280                 285

Leu Gln Ser Gln Val Glu Gln Leu Lys Leu Glu Val Gly Arg Leu Ala
    290                 295                 300

Lys Glu Arg Asp Leu Tyr Lys Glu Lys Tyr Glu Lys Leu Ala Gly Arg
305                 310                 315                 320

Gly Gly Pro Gly Ser Ala Gly Gly Ala Gly Phe Pro Arg Glu Pro Ser
                325                 330                 335

Pro Pro Gln Ala Gly Pro Gly Gly Ala Lys Gly Thr Ala Asp Phe Phe
            340                 345                 350
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Leu

<210> 9
<211> 1059
<212> DNA
<213> Homo sapiens

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gtcaacgact tcgacctgat gaagttcgag gtgaagaagg agcctcccga ggccgagcgc 120

ttctgccacc gcctgccgcc aggctcgctg tcctcgacgc cgctcagcac gccctgctcc 180

tccgtgccct cctcgcccag cttctgcgcg cccagcccgg gcaccggcgg cggcggcggc 240

gcgggggcg gcggcggctc gtctcaggcc gggggcgccc ccgggccgcc gagcgggggc 300

cccggcgccg tcgggggcac ctcggggaag ccggcgctgg aggatctgta ctggatgagc 360

ggctaccagc atcacctcaa ccccgaggcg ctcaacctga cgcccgagga cgcggtggag 420

gcgctcatcg gcagcggcca ccacggcgcg caccacggcg cgcaccaccc ggcggccgcc 480

gcagcctacg aggctttccg cggcccgggc ttcgcgggcg gcggcggagc ggacgacatg 540

ggcgccggcc accaccacgg cgcgcaccac gccgcccacc accaccacgc cgcccaccac 600

caccaccacc accaccacca tggcggcgcg ggacacggcg gtggcgcggg ccaccacgtg 660

cgcctggagg agcgcttctc cgacgaccag ctggtgtcca tgtcggtgcg cgagctgaac 720

cggcagctcc gcggcttcag caaggaggag gtcatccggc tcaagcagaa gcggcgcacg 780

ctcaagaacc gcggctacgc gcagtcctgc cgcttcaagc gggtgcagca gcggcacatt 840

ctggagagcg agaagtgcca actccagagc caggtggagc agctgaagct ggaggtgggg 900

cgcctggcca aagagcggga cctgtacaag gagaaatacg agaagctggc gggccggggc 960

ggccccggga gcgcgggcgg ggccggtttc ccgcgggagc cttcgccgcc gcaggccggt 1020

cccggcgggg ccaagggcac ggccgacttc ttcctgtag 1059

<210> 10
<211> 776
<212> DNA

<213> Artificial Sequence

<220>
<223> GSRE-CRE element

<400> 10
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ttaaaggtat tcccctctac accaggcctc aatggctgac ttcattactg ggatgaaaag 180

tccttcctcc agagacagat ttcaatgcga aaattacagt atttgagaag atcccaccag 240

atgatatttt ctggtgagta gaaaaaaatc ccacctctaa taaagacccc agcttcttgt 300

ttacccctga aagtcagtgg tcacatgaga tgttcctggt cacatggaag gatcaaagca 360

agcctgcttc tattcttgga aacagagcaa atgttctctt gatgctgccg ctgtttctgt 420

gtggtcaatt tgtgtttatc gaacactcag tctggaaact gtttgggggc ggggtggggt 480

ataggagaat aagcagcaaa agaggttaac gtgtctagga agggaagcca gcactcccgt 540

ggcggaaatg caagaaaccc aggaaaaaca acacatttgc tcagggtttt caccttttct 600

actgagattc ccctggcctc attctggacc ctggtgaaga ctgctgaagg ctactctgtt 660

tgatgggtac cgagctcgag atccggcgaa ttcgaacacg cagatgcagt cggggcggcg 720

cggtccgagg tccacttcgc atattaaggt gacgcgtgtg gcctcgaaca ccgagc 776

<210> 11
<211> 257
<212> DNA
<213> Artificial Sequence

<220>
<223> GS Intron1

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cattatgaag accaagattt cctgaaatca gacaatctac cggtctcctg agaactggga 120

ttaaaggtat tcccctctac accaggcctc aatggctgac ttcattactg ggatgaaaag 180

tccttcctcc agagacagat ttcaatgcga aaattacagt atttgagaag atcccaccag 240

atgatatttt ctggtga 257

<210> 12
<211> 364
<212> DNA
<213> Artificial Sequence

<220>
<223> GS 5' enhancer

<400> 12
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tggtcacatg agatgttcct ggtcacatgg aaggatcaaa gcaagcctgc ttctattctt 120

ggaaacagag caaatgttct cttgatgctg ccgctgtttc tgtgtggtca atttgtgttt 180

atcgaacact cagtctggaa actgtttggg ggcggggtgg ggtataggag aataagcagc 240

aaaagaggtt aacgtgtcta ggaagggaag ccagcactcc cgtggcggaa atgcaagaaa 300

cccaggaaaa acaacacatt tgctcagggt tttcaccttt tctactgaga ttcccctggc 360

ctca 364

<210> 13
<211> 134
<212> DNA
<213> Artificial Sequence

<220>
<223> Tk partial promoter

<400> 13
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gatgcagtcg gggcggcgcg gtccgaggtc cacttcgcat attaaggtga cgcgtgtggc 120

ctcgaacacc gagc 134

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer - Ins

<400> 14
gaagcgtggc attgtggaac 20

<210> 15
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer - Ins

<400> 15
gctgcgtcta gttgcagtag t 21

<210> 16
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer - GCG

<400> 16
ccaagatttt gtgcagtggt 20

<210> 17
<211> 20
<212> DNA
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<220>
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<400> 17
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<220>
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<400> 18

atgatgccct ggaacctgaa g 21

<210> 19
<211> 21
<212> DNA
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<220>
<223> Reverse primer - SST

<400> 19
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<210> 20
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<220>
<223> Forward primer - NKX6-1

<400> 20
gggctcgttt ggcctattcg 20

<210> 21
<211> 21
<212> DNA
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<220>
<223> Reverse primer - NKX6-1

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<223> Forward primer - PAX6

<400> 22
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<210> 23
<211> 20
<212> DNA
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<220>
<223> Reverse primer - PAX6

<400> 23
gcttttcgct agccaggttg 20

<210> 24
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer - ISL1

<400> 24
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<210> 25
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer - ISL1

<400> 25
cgcaaccaac acatagggaa 20

<210> 26
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer - PDX1

<400> 26
aagtctacca aagctcacgc g 21

<210> 27

<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer - PDX1

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<210> 28
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<212> DNA
<213> Artificial Sequence

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<223> Forward primer - WNT1

<400> 28
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<210> 29
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer - WNT1

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<210> 30
<211> 20
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<213> Artificial Sequence

<220>
<223> Forward primer - FZD4

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<210> 31
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<220>
<223> Reverse primer - FZD4

<400> 31
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<210> 32
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<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer - ROR2

<400> 32
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<210> 33
<211> 20
<212> DNA
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<220>
<223> Reverse primer - ROR2

<400> 33
gcccatcaag gggtcctaaa 20

<210> 34
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer - LRP5

<400> 34
ccatccatgc ctgcaacaag 20

<210> 35
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer - LRP5

<400> 35
gcgagtgtgg aagaaaggct 20

<210> 36
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer - Beta-actin

<400> 36
cctggacttc gagcaagaga 20

<210> 37
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer - Beta-actin

<400> 37
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