SEQUENCE LISTING

<110> KOLON TissueGene, Inc.

<120> NERVE DAMAGE TREATMENT REGENERATION WITH PTEN INHIBITOR

<130> 55293-54PCT

<150> US 61/899,795
<151> 2013-11-04

<160> 12

<170> PatentIn version 3.5

<210> 1
<211> 403
<212> PRT
<213> Artificial Sequence

<220>
<223> PTEN amino acid sequence

<400> 1

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Met Thr Ala Ile Ile Lys Glu Ile Val Ser Arg Asn Lys Arg Arg Tyr
1               5                  10                  15


Gln Glu Asp Gly Phe Asp Leu Asp Leu Thr Tyr Ile Tyr Pro Asn Ile
            20                  25                  30


Ile Ala Met Gly Phe Pro Ala Glu Arg Leu Glu Gly Val Tyr Arg Asn
        35                  40                  45


Asn Ile Asp Asp Val Val Arg Phe Leu Asp Ser Lys His Lys Asn His
    50                  55                  60


Tyr Lys Ile Tyr Asn Leu Cys Ala Glu Arg His Tyr Asp Thr Ala Lys
65                  70                  75                  80


Phe Asn Cys Arg Val Ala Gln Tyr Pro Phe Glu Asp His Asn Pro Pro
                85                  90                  95
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```
Gln Leu Glu Leu Ile Lys Pro Phe Cys Glu Asp Leu Asp Gln Trp Leu
            100                 105                 110

Ser Glu Asp Asp Asn His Val Ala Ala Ile His Cys Lys Ala Gly Lys
        115                 120                 125

Gly Arg Thr Gly Val Met Ile Cys Ala Tyr Leu Leu His Arg Gly Lys
    130                 135                 140

Phe Leu Lys Ala Gln Glu Ala Leu Asp Phe Tyr Gly Glu Val Arg Thr
145                 150                 155                 160

Arg Asp Lys Lys Gly Val Thr Ile Pro Ser Gln Arg Arg Tyr Val Tyr
                165                 170                 175

Tyr Tyr Ser Tyr Leu Leu Lys Asn His Leu Asp Tyr Arg Pro Val Ala
            180                 185                 190

Leu Leu Phe His Lys Met Met Phe Glu Thr Ile Pro Met Phe Ser Gly
        195                 200                 205

Gly Thr Cys Asn Pro Gln Phe Val Val Cys Gln Leu Lys Val Lys Ile
    210                 215                 220

Tyr Ser Ser Asn Ser Gly Pro Thr Arg Arg Glu Asp Lys Phe Met Tyr
225                 230                 235                 240

Phe Glu Phe Pro Gln Pro Leu Pro Val Cys Gly Asp Ile Lys Val Glu
                245                 250                 255

Phe Phe His Lys Gln Asn Lys Met Leu Lys Lys Asp Lys Met Phe His
            260                 265                 270

Phe Trp Val Asn Thr Phe Phe Ile Pro Gly Pro Glu Glu Thr Ser Glu
        275                 280                 285

Lys Val Glu Asn Gly Ser Leu Cys Asp Gln Glu Ile Asp Ser Ile Cys
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    290                 295                 300

Ser Ile Glu Arg Ala Asp Asn Asp Lys Glu Tyr Leu Val Leu Thr Leu
305                 310                 315                 320

Thr Lys Asn Asp Leu Asp Lys Ala Asn Lys Asp Lys Ala Asn Arg Tyr
                325                 330                 335

Phe Ser Pro Asn Phe Lys Val Lys Leu Tyr Phe Thr Lys Thr Val Glu
            340                 345                 350

Glu Pro Ser Asn Pro Glu Ala Ser Ser Ser Thr Ser Val Thr Pro Asp
        355                 360                 365

Val Ser Asp Asn Glu Pro Asp His Tyr Arg Tyr Ser Asp Thr Thr Asp
    370                 375                 380

Ser Asp Pro Glu Asn Glu Pro Phe Asp Glu Asp Gln His Thr Gln Ile
385                 390                 395                 400

Thr Lys Val
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<210> 2
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<212> PRT
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<220>
<223> PTD (peptide transfer domain)

<400> 2

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Arg Arg Arg Arg Arg Arg Arg Arg
1               5
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<210> 3
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<223> TGN-1 peptide

<400> 3

Val Thr Pro Asp Val Ser Asp Asn Glu Pro Asp His Tyr Arg Tyr Ser
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Asp Thr Thr Asp Ser Asp Pro Glu
            20

<210> 4
<211> 32
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<220>
<223> PTD and TGN-1

<400> 4

Arg Arg Arg Arg Arg Arg Arg Arg Val Thr Pro Asp Val Ser Asp Asn
1   5   10   15

Glu Pro Asp His Tyr Arg Tyr Ser Asp Thr Thr Asp Ser Asp Pro Glu
            20   25   30

<210> 5
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<212> PRT
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<220>
<223> PTD and TGN-2

<400> 5

His Tyr Arg Tyr Ser Asp Thr Thr Asp Ser Asp Pro Glu Asn Glu Pro
1   5   10   15

Phe Asp Glu Asp Gln His Thr Gln Ile Thr Lys Val
            20   25

<210> 6
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<212> PRT
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<220>
<223> PTD and TGN-2

<400> 6

Arg Arg Arg Arg Arg Arg Arg Arg His Tyr Arg Tyr Ser Asp Thr Thr
1 5 10 15

Asp Ser Asp Pro Glu Asn Glu Pro Phe Asp Glu Asp Gln His Thr Gln
20 25 30

Ile Thr Lys Val
35

<210> 7
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<223> PTD and TGN-3

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His Tyr Arg Tyr Val Asp Thr Thr Asp Val Asp Pro Glu Asn Glu Pro
1 5 10 15

Phe Asp Glu Asp Gln His Thr Gln Ile Thr Lys Val
20 25

<210> 8
<211> 36
<212> PRT
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<220>
<223> PTD and TGN-3

<400> 8

Arg Arg Arg Arg Arg Arg Arg Arg His Tyr Arg Tyr Val Asp Thr Thr
1 5 10 15

Asp Val Asp Pro Glu Asn Glu Pro Phe Asp Glu Asp Gln His Thr Gln
20 25 30

Ile Thr Lys Val
35

<210> 9
<211> 23
<212> PRT
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<223> PTD and TGN-4

<400> 9

Ser Asp Asp Glu Tyr Thr Asp Asn Pro Asp Ser Arg Tyr Val Ser Asp
1 5 10 15

Thr Pro Val Asp Thr Glu His
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<210> 10
<211> 31
<212> PRT
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<220>
<223> PTD and TGN-4

<400> 10

Arg Arg Arg Arg Arg Arg Arg Arg Ser Asp Asp Glu Tyr Thr Asp Asn
1 5 10 15

Pro Asp Ser Arg Tyr Val Ser Asp Thr Pro Val Asp Thr Glu His
20 25 30

<210> 11
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<212> PRT
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<220>
<223> PTD and TGN-5

<400> 11

Asp Glu His Asp Thr Glu Tyr Thr Pro Asp Tyr Arg Gln Glu Thr His
1 5 10 15

Phe Asn Ser Gln Pro Thr Asp Lys Ser Asp Val Ile
20 25

<210> 12
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<212> PRT
<213> Artificial Sequence

<220>
<223> PTD attached at the N-terminus of TGN-5

<400> 12

Arg Arg Arg Arg Arg Arg Arg Arg Asp Glu His Asp Thr Glu Tyr Thr
1 5 10 15

Pro Asp Tyr Arg Gln Glu Thr His Phe Asn Ser Gln Pro Thr Asp Lys
20 25 30

Ser Asp Val Ile
35