# SEQUENCE LISTING

<110> VIROMED LIMITED

<120> HYBRID HEPATOCYTE GROWTH FACTOR GENE WHICH HAS A HIGH EXPRESSION EFFICIENCY AND EXPRESSES TWO HETEROTYPES OF HEPATOCYTE GROWTH FACTOR

<130> PCA30320/VML

<160> 21

<170> KopatentIn 1.71

<210> 1
<211> 2187
<212> DNA
<213> Hepatocyte Growth Factor

<400> 1

atgtgggtga ccaaactcct gccagccctg ctgctgcagc atgtcctcct gcatctcctc 60

ctgctcccca tcgccatccc ctatgcagag ggacaaagga aaagaagaaa tacaattcat 120

gaattcaaaa aatcagcaaa gactacccta atcaaaatag atccagcact gaagataaaa 180

accaaaaaag tgaatactgc agaccaatgt gctaatagat gtactaggaa taaaggactt 240

ccattcactt gcaaggcttt tgtttttgat aaagcaagaa aacaatgcct ctggttcccc 300

ttcaatagca tgtcaagtgg agtgaaaaaa gaatttggcc atgaatttga cctctatgaa 360

aacaaagact acattagaaa ctgcatcatt ggtaaaggac gcagctacaa gggaacagta 420

tctatcacta agagtggcat caaatgtcag ccctggagtt ccatgatacc acacgaacac 480

agctttttgc cttcgagcta tcggggtaaa gacctacagg aaaactactg tcgaaatcct 540

cgaggggaag aaggggacc ctggtgtttc acaagcaatc cagaggtacg ctacgaagtc 600

tgtgacattc ctcagtgttc agaagttgaa tgcatgacct gcaatgggga gagttatcga 660

ggtctcatgg atcatacaga atcaggcaag atttgtcagc gctgggatca tcagacacca 720

caccggcaca aattcttgcc tgaaagatat cccgacaagg gctttgatga taattattgc 780

cgcaatcccg atggccagcc gaggccatgg tgctatactc ttgaccctca cacccgctgg 840

gagtactgtg caattaaaac atgcgctgac aatactatga atgacactga tgttcctttg 900

gaaacaactg aatgcatcca aggtcaagga gaaggctaca ggggcactgt caataccatt 960

tggaatggaa ttccatgtca gcgttgggat tctcagtatc ctcacgagca tgacatgact 1020

cctgaaaatt tcaagtgcaa ggacctacga gaaaattact gccgaaatcc agatgggtct 1080

gaatcaccct ggtgttttac cactgatcca aacatccgag ttggctactg ctcccaaatt 1140

ccaaactgtg atatgtcaca tggacaagat tgttatcgtg ggaatggcaa aaattatatg 1200

ggcaacttat cccaaacaag atctggacta acatgttcaa tgtgggacaa gaacatggaa 1260

gacttacatc gtcatatctt ctgggaacca gatgcaagta agctgaatga gaattactgc 1320

cgaaatccag atgatgatgc tcatggaccc tggtgctaca cgggaaatcc actcattcct 1380

tgggattatt gccctatttc tcgttgtgaa ggtgatacca cacctacaat agtcaattta 1440

gaccatcccg taatatcttg tgccaaaacg aaacaattgc gagttgtaaa tgggattcca 1500

acacgaacaa acataggatg gatggttagt ttgagataca gaaataaaca tatctgcgga 1560

ggatcattga taaaggagag ttgggttctt actgcacgac agtgtttccc ttctcgagac 1620

ttgaaagatt atgaagcttg gcttggaatt catgatgtcc acggaagagg agatgagaaa 1680

tgcaaacagg ttctcaatgt ttcccagctg gtatatggcc ctgaaggatc agatctggtt 1740

ttaatgaagc ttgccaggcc tgctgtcctg gatgattttg ttagtacgat tgatttacct 1800

aattatggat gcacaattcc tgaaaagacc agttgcagtg tttatggctg gggctacact 1860

ggattgatca actatgatgg cctattacga gtggcacatc tctatataat gggaaatgag 1920

aaatgcagcc agcatcatcg agggaaggtg actctgaatg agtctgaaat atgtgctggg 1980

gctgaaaaga ttggatcagg accatgtgag ggggattatg gtggcccact tgtttgtgag 2040

caacataaaa tgagaatggt tcttggtgtc attgttcctg gtcgtggatg tgccattcca 2100

aatcgtcctg gtatttttgt ccgagtagca tattatgcaa aatggataca caaaattatt 2160

ttaacatata aggtaccaca gtcatag 2187

<210> 2
<211> 7112
<212> DNA
<213> hepatocyte growth factor hybrid

<400> 2
atgtgggtga ccaaactcct gccagccctg ctgctgcagc atgtcctcct gcatctcctc 60

ctgctcccca tcgccatccc ctatgcagag ggacaaagga aaagaagaaa tacaattcat 120

gaattcaaaa aatcagcaaa gactacccta atcaaaatag atccagcact gaagataaaa 180

accaaaaaag tgaatactgc agaccaatgt gctaatagat gtactaggaa taaaggactt 240

ccattcactt gcaaggcttt tgtttttgat aaagcaagaa aacaatgcct ctggttcccc 300

ttcaatagca tgtcaagtgg agtgaaaaaa gaatttggcc atgaatttga cctctatgaa 360

aacaaagact acattagaaa ctgcatcatt ggtaaaggac gcagctacaa gggaacagta 420

tctatcacta agagtggcat caaatgtcag ccctggagtt ccatgatacc acacgaacac 480

aggtaagaac agtatgaaga aaagagatga agcctctgtc ttttttacat gttaacagtc 540

tcatattagt ccttcagaat aattctacaa tcctaaaata acttagccaa cttgctgaat 600

tgtattacgg caaggtttat atgaattcat gactgatatt tagcaaatga ttaattaata 660

tgttaataaa atgtagccaa aacaatatct taccttaatg cctcaatttg tagatctcgg 720

tatttgtgaa ataataacgt aaacttcgtt taaaaggatt cttcttcctg tctttgagaa 780

agtacggcac tgtgcagggg gagaggttga ttgtgaaaaa tcagaggtag atgagaatct 840

tactgagggc tgagggttct ttaaccttgg tggatctcaa cattggttgc acattaaaat 900

cacctgctgc aagcccttga cgaatcttac ttagaagatg acaacacaga acaattaaat 960

cagaatctct ggggagaata gggcaccagt atttttgag ctcccaccat gattccaaag 1020

tgcagccaaa tttgagaacc actgctaaaa gctcaagctt cagattgacc agcttttcca 1080

tctcacctat cgcctaaaga ccaaattgga taaatgtgtt cattacgaca gatgggtact 1140

atttaaagat gagtaaacac aatatactta ggctcgtcag actgagagtt ttaatcatca 1200

ctgaggaaaa acatagatat ctaatactga ctggagtatt agtcaaggct tatttcacac 1260

acaattttat cagaaaccaa agtagtttaa aacagctctc cccttattag taatgcattg 1320

gagggtttac tttaccatgt accttgctga gcactgtacc ttgttaatct catttacttg 1380

taatgagaac cacacagcgg gtagttttat tggttctatt ttacctacat gacaaaactg 1440

aagcataaaa acacttagta agttttcagt gtcatgcaca actaggaagt gacatggcca 1500

gaatataagc ccagtcacca tcactctata acctgcgctt ttaacaactt cagggcatga 1560

cacatttggc cggtcagtag aacccatgct gtgatttgtt tttgcagtgg tggtgatgac 1620

tgccttgttg aatccacttt ttattctatt ccattttggg gacacaattc tgcaagatga 1680

ttcttcatta ggaaacagag atgagttatt gaccaacaca gaaagaaaaa gagtttgttg 1740

ctccacactg ggattaaacc tatgatcttg gcctaattaa cactagctag taagtgtcca 1800

agctgatcat ctctacaaca tttcaataac agaaaacaac aattttcaaa attagttact 1860

tacaattatg tagaaatgcc tctaaaacac agtattttcc ttatattaca aaaacaaaaa 1920

ttataattgg ttttgtcctc ttttgagagt ttgcatggtg ttactccctg catagtgaag 1980

aaaacatttt atttaagtag atggatctaa gtttttcatg aacaaaggaa tgacatttga 2040

aatcaatcct accctagtcc aggagaatgc attagattaa cctagtagag gtcttatttc 2100

accctgagtt ttctatgatc gtgattctct gctggaggag taattgtgaa atagatctct 2160

ctgggaactg gcttcctagt ccaatcagct cttttaccaa tgaacacttc cttgtgatat 2220

agatgtttat ggccgagagg atccagtata ttaataaaat ccctttttgt attcaatgag 2280

ggaaacacat aattttcatc aattagcagc ttattggaat atctgcatga tggtttaaca 2340

cttttaagtg ttgactaaag attaatttta cagaaaatag aaaaagaaat atgtttctgt 2400

ctggaggaat gatttattgt tgacccctaa attgaaatat tttactagtg gcttaatgga 2460

aagatgatga aagatgatga aattaatgta gaagcttaac tagaaaatca ggtgacctga 2520

tatctacatc tgtatccttc attggccacc cagcattcat taatgaatca gatgatggaa 2580

tagatcaagt ttcctaggaa cacagtgaat attaaaagaa aacaaagga gcctagcacc 2640

tagaagacct agtttatatt tcaaagtata tttggatgta acccaatttt aaacatttcc 2700

tcacttgtct ctcttaaagc cttgccaaca gcaaggacag agaaccaaaa atagtgtata 2760

tatgaataaa tgcttattac agaatctgct gactggcaca tgctttgtgt gtaatgggtt 2820

ctcataaaca cttgttgaat gaacacacat aagtgaaaga gcatggctag gcttcatccc 2880

ttggtcaaat atggggtgct aaagaaaagc aggggaaata cattgggaca ctaacaaaaa 2940

aaaacagtta atttaggtaa aagataaaat acaccacaga atgaagaaaa gagatgaccc 3000

agactgctct ttaaccttca tgtcctagag aggtttttga tatgaattgc attcagaatt 3060

gtggaaagga gcccatcttt tctcttcatt ttgattttat taactccaat gggggaattt 3120

tattcgtgtt ttggccatat ctacttttga tttctacatt attctctctt cctttctacc 3180

tgtatttgtc ctaataaatt gttgacttat taattcacta cttcctcaca gcttttttt 3240

ggctttacaa atccactgga aaggtatatg ggtgtatcac tttgtgtatt tcggtgtgca 3300

tgtgtagagg ggacaaaaat cctctctcaa actataaata ttgagtattt gtgtattgaa 3360

catttgctat aactactagg tttcttaaat aatcttaata tataaaatga tatagaaaaa 3420

gggaaattat agttcgtatt attcatctaa gtgaagagat taaaacccag ggagtaaata 3480

aattgtctaa ggactaaggt tgtatactat ttaggtgata gatatggggc aaccgtatgg 3540

gttttatgat taacaaataa acttctcacc actctaccat atcaactttt ccataaaaga 3600

gagctatagt attctttgct taaataaatt tgattagtgc atgacttctt gaaaacatat 3660

aaagcaaaag tcacatttga ttctatcaga aaagtgagta agccatggcc caaacaaaag 3720

atgcattaaa atattctgga atgatggagc taaaagtaag aaaaatgact ttttaaaaaa 3780

gtttactgtt aggaattgtg aaattatgct gaattttagt tgcattataa tttttgtcag 3840

tcatacggtc tgacaacctg tcttatttct atttccccat atgaggaatg ctagttaagt 3900

atggatatta actattacta cttagatgca ttgaagttgc ataatatgga taatacttca 3960

ctggttccct gaaaatgttt agttagtaat aagtctctta cactatttgt tttgtccaat 4020

aatttatatt ttctgaagac ttaactctag aatacactca tgtcaaaatg aaagaatttc 4080

attgcaaaat attgcttggt acatgacgca tacctgtatt tgttttgtgt cacaacatga 4140

aaaatgatgg tttattagaa gtttcattgg gtaggaaaca catttgaatg gtatttacta 4200

agatactaaa atccttggac ttcactctaa ttttagtgcc atttagaact caaggtctca 4260

gtaaaagtag aaataaagcc tgttaacaaa acacaagctg aatattaaaa atgtaactgg 4320

attttcaaag aaatgtttac tggtattacc tgtagatgta tattctttat tatgatcttt 4380

tgtgtaaagt ctggcagaca aatgcaatat ctaattgttg agtccaatat cacaagcagt 4440

acaaaagtat aaaaaagact tggccttttc taatgtgtta aaatacttta tgctggtaat 4500

aacactaaga gtagggcact agaaatttta agtgaagata atgtgttgca gttactgcac 4560

tcaatggctt actattataa accaaaactg ggatcactaa gctccagtca gtcaaaatga 4620

tcaaaattat tgaagagaat aagcaattct gttctttatt aggacacagt agatacagac 4680

tacaaagtgg agtgtgctta ataagaggta gcatttgtta agtgtcaatt actctattat 4740

cccttggagc ttctcaaaat aaccatataa ggtgtaagat gttaaaggtt atggttacac 4800

tcagtgcaca gtaagctaat aggctgagag aagctaaatt acttactggg gtctcacagt 4860

aagaaagtga gctgaagttt cagcccagat ttaactggat tctgggctct ttattcatgt 4920

tacttcatga atctgtttct caattgtgca gaaaaaaggg ggctatttat aagaaaagca 4980

ataaacaaac aagtaatgat ctcaaataag taatgcaaga aatagtgaga tttcaaaatc 5040

agtggcagcg atttctcagt tctgtcctaa gtggccttgc tcaatcacct gctatctttt 5100

agtggagctt tgaaattatg tttcagacaa cttcgattca gttctagaat gtttgactca 5160

gcaaattcac aggctcatct ttctaacttg atggtgaata tggaaattca gctaaatgga 5220

tgttaataaa attcaaacgt tttaaggaca gatgaaaatg acagaatttt aaggtaaaat 5280

atatgaagga atataagata aaggattttt ctaccttcag caaaaacata cccactaatt 5340

agtaaaatta ataggcaaaa aaaagttgca tgctcttata ctgtaatgat tatcatttta 5400

aaactagctt tttgccttcg agctatcggg gtaaagacct acaggaaaac tactgtcgaa 5460

atcctcgagg ggaagaaggg ggaccctggt gtttcacaag caatccagag gtacgctacg 5520

aagtctgtga cattcctcag tgttcagaag ttgaatgcat gacctgcaat ggggagagtt 5580

atcgaggtct catggatcat acagaatcag gcaagatttg tcagcgctgg gatcatcaga 5640

caccacaccg gcacaaattc ttgcctgaaa gatatcccga caagggcttt gatgataatt 5700

attgccgcaa tcccgatggc cagccgaggc catggtgcta tactcttgac cctcacaccc 5760

gctgggagta ctgtgcaatt aaaacatgcg ctgacaatac tatgaatgac actgatgttc 5820

ctttggaaac aactgaatgc atccaaggtc aaggagaagg ctacaggggc actgtcaata 5880

ccatttggaa tggaattcca tgtcagcgtt gggattctca gtatcctcac gagcatgaca 5940

tgactcctga aaatttcaag tgcaaggacc tacgagaaaa ttactgccga aatccagatg 6000

ggtctgaatc accctggtgt tttaccactg atccaaacat ccgagttggc tactgctccc 6060

aaattccaaa ctgtgatatg tcacatggac aagattgtta tcgtgggaat ggcaaaaatt 6120

atatgggcaa cttatcccaa acaagatctg gactaacatg ttcaatgtgg gacaagaaca 6180

tggaagactt acatcgtcat atcttctggg aaccagatgc aagtaagctg aatgagaatt 6240

actgccgaaa tccagatgat gatgctcatg gaccctggtg ctacacggga aatccactca 6300

ttccttggga ttattgccct atttctcgtt gtgaaggtga taccacacct acaatagtca 6360

atttagacca tcccgtaata tcttgtgcca aaacgaaaca attgcgagtt gtaaatggga 6420

ttccaacacg aacaaacata ggatggatgg ttagtttgag atacagaaat aaacatatct 6480

gcggaggatc attgataaag gagagttggg ttcttactgc acgacagtgt ttcccttctc 6540

gagacttgaa agattatgaa gcttggcttg gaattcatga tgtccacgga agaggagatg 6600

agaaatgcaa acaggttctc aatgtttccc agctggtata tggccctgaa ggatcagatc 6660

tggttttaat gaagcttgcc aggcctgctg tcctggatga ttttgttagt acgattgatt 6720

tacctaatta tggatgcaca attcctgaaa agaccagttg cagtgtttat ggctggggct 6780

acactggatt gatcaactat gatggcctat tacgagtggc acatctctat ataatgggaa 6840

atgagaaatg cagccagcat catcgaggga aggtgactct gaatgagtct gaaatatgtg 6900

ctggggctga aaagattgga tcaggaccat gtgaggggga ttatggtggc ccacttgttt 6960

gtgagcaaca taaaatgaga atggttcttg gtgtcattgt tcctggtcgt ggatgtgcca 7020

ttccaaatcg tcctggtatt tttgtccgag tagcatatta tgcaaaatgg atacacaaaa 7080

ttattttaac atataaggta ccacagtcat ag 7112

<210> 3
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> gHGF3 primer

<400> 3
gtaaaggacg cgtctacaag ggaacagtat ctat 34

<210> 4
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> gHGF4 primer

<400> 4
actggatcct ctcggccata aacatct 27

<210> 5
<211> 34

<212> DNA
<213> Artificial Sequence

<220>
<223> gHGF10 primer

<400> 5
gaagcttagc accatgtggg tgaccaaact cctg 34

<210> 6
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> gHGF5 primer

<400> 6
tggccgagag gatccagtat attaata 27

<210> 7
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> gHGF7 primer

<400> 7
cccctcgagg atttcgacag tagtttt 27

<210> 8
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> gHGF12 primer

<400> 8
gggatccctt cctttctacc tgtatttg 28

<210> 9
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> gHGF13 primer

<400> 9
gggatcctgg gtaaacacat ttgaa 25

<210> 10
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> gHGF6 primer

<400> 10
gggatcctta tgtttcagac aacttcga 28

<210> 11
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> gHGF1 primer

<400> 11
gaagcttgcc accatgtggg tgaccaaact cctg 34

<210> 12
<211> 34
<212> DNA

<213> Artificial Sequence

<220>
<223> gHGF2 primer

<400> 12
gggatccaga acgcgtcctt taccgatgat gcag 34

<210> 13
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> gHGF8 primer

<400> 13
gggatccctt ctcgagactt gaaagattat gaagc 35

<210> 14
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> gHGF9 primer

<400> 14
gtctagagcg gccgctatga ctgtggtacc tt 32

<210> 15
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> cHGF5 primer

<400> 15

ggatccacgc gtagcagcac catgtgggtg accaaa 36

<210> 16
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> cHGF3 primer

<400> 16
ggatcctcta gattacttca gctatgactg tggtac 36

<210> 17
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> GHGF5' primer

<400> 17
caaatgtcag ccctggagtt ccatga 26

<210> 18
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> GHGF3' primer

<400> 18
ctggattgct tgtgaaacag ggt 23

<210> 19
<211> 4679
<212> DNA
<213> Artificial Sequence

<220>
<223> HGF-X6 gene

<400> 19

atgtgggtga ccaaactcct gccagccctg ctgctgcagc atgtcctcct gcatctcctc 60

ctgctcccca tcgccatccc ctatgcagag ggacaaagga aaagaagaaa tacaattcat 120

gaattcaaaa aatcagcaaa gactacccta atcaaaatag atccagcact gaagataaaa 180

accaaaaaag tgaatactgc agaccaatgt gctaatagat gtactaggaa taaaggactt 240

ccattcactt gcaaggcttt tgtttttgat aaagcaagaa aacaatgcct ctggttcccc 300

ttcaatagca tgtcaagtgg agtgaaaaaa gaatttggcc atgaatttga cctctatgaa 360

aacaaagact acattagaaa ctgcatcatc ggtaaaggac gcagctacaa gggaacagta 420

tctatcacta agagtggcat caaatgtcag ccctggagtt ccatgatacc acacgaacac 480

aggtaagaac agtatgaaga aaagagatga agcctctgtc ttttttacat gttaacagtc 540

tcatattagt ccttcagaat aattctacaa tcctaaaata acttagccaa cttgctgaat 600

tgtattacgg caaggtttat atgaattcat gactgatatt tagcaaatga ttaattaata 660

tgttaataaa atgtagccaa aacaatatct taccttaatg cctcaatttg tagatctcgg 720

tatttgtgga tcccttcctt tctacctgta tttgtcctaa taaattgttg acttattaat 780

tcactacttc ctcacagctt ttttttggct ttacaaatcc actggaaagg tatatgggtg 840

tatcactttg tgtatttcgg tgtgcatgtg tagaggggac aaaaatcctc tctcaaacta 900

taaatattga gtatttgtgt attgaacatt tgctataact actaggtttc ttaaataatc 960

ttaatatata aaatgatata gaaaaaggga aattatagtt cgtattattc atctaagtga 1020

agagattaaa acccagggag taaataaatt gtctaaggac taaggttgta tactatttag 1080

gtgatagata tggggcaacc gtatgggttt tatgattaac aaataaactt ctcaccactc 1140

taccatatca acttttccat aaaagagagc tatagtattc tttgcttaaa taaatttgat 1200

tagtgcatga cttcttgaaa acatataaag caaaagtcac atttgattct atcagaaaag 1260

tgagtaagcc atggcccaaa caaaagatgc attaaaatat tctggaatga tggagctaaa 1320

agtaagaaaa atgacttttt aaaaaagttt actgttagga attgtgaaat tatgctgaat 1380

tttagttgca ttataatttt tgtcagtcat acggtctgac aacctgtctt atttctattt 1440

ccccatatga ggaatgctag ttaagtatgg atattaacta ttactactta gatgcattga 1500

agttgcataa tatggataat acttcactgg ttccctgaaa atgtttagtt agtaataagt 1560

ctcttacact atttgttttg tccaataatt tatattttct gaagacttaa ctctagaata 1620

cactcatgtc aaaatgaaag aatttcattg caaaatattg cttggtacat gacgcatacc 1680

tgtatttgtt ttgtgtcaca acatgaaaaa tgatggttta ttagaagttt cattgggtag 1740

gaaacacatt tgaatggtat ttactaagat actaaaatcc ttggacttca ctctaatttt 1800

agtgccattt agaactcaag gtctcagtaa aagtagaaat aaagcctgtt aacaaaacac 1860

aagctgaata ttaaaaatgt aactggattt tcaaagaaat gtttactggt attacctgta 1920

gatgtatatt ctttattatg atcttttgtg taaagtctgg cagacaaatg caatatctaa 1980

ttgttgagtc caatatcaca agcagtacaa aagtataaaa aagacttggc cttttctaat 2040

gtgttaaaat actttatgct ggtaataaca ctaagagtag ggcactagaa attttaagtg 2100

aagataatgt gttgcagtta ctgcactcaa tggcttacta ttataaacca aaactgggat 2160

cactaagctc cagtcagtca aaatgatcaa aattattgaa gagaataagc aattctgttc 2220

tttattagga cacagtagat acagactaca aagtggagtg tgcttaataa gaggtagcat 2280

ttgttaagtg tcaattactc tattatccct tggagcttct caaaataacc atataaggtg 2340

taagatgtta aaggttatgg ttacactcag tgcacaggta agctaatagg ctgagagaag 2400

ctaaattact tactggggtc tcacagtaag aaagtgagct gaagtttcag cccagattta 2460

actggattct gggctcttta ttcatgttac ttcatgaatc tgtttctcaa ttgtgcagaa 2520

aaaaggggggc tatttataag aaaagcaata aacaaacaag taatgatctc aaataagtaa 2580

tgcaagaaat agtgagattt caaaatcagt ggcagcgatt tctcagttct gtcctaagtg 2640

gccttgctca atcacctgct atcttttagt ggagctttga aattatgttt cagacaactt 2700

cgattcagtt ctagaatgtt tgactcagca aattcacagg ctcatctttc taacttgatg 2760

gtgaatatgg aaattcagct aaatggatgt taataaaatt caaacgtttt aaggacagat 2820

gaaaatgaca gaattttaag gtaaaatata tgaaggaata taagataaag gatttttcta 2880

ccttcagcaa aaacataccc actaattagt aaaattaata ggcaaaaaaa agttgcatgc 2940

tcttatactg taatgattat cattttaaaa ctagcttttt gccttcgagc tatcggggta 3000

aagacctaca ggaaaactac tgtcgaaatc ctcgagggga agaaggggga ccctggtgtt 3060

tcacaagcaa tccagaggta cgctacgaag tctgtgacat tcctcagtgt tcagaagttg 3120

aatgcatgac ctgcaatggg gagagttatc gaggtctcat ggatcataca gaatcaggca 3180

agatttgtca gcgctgggat catcagacac cacaccggca caaattcttg cctgaaagat 3240

atcccgacaa gggctttgat gataattatt gccgcaatcc cgatggccag ccgaggccat 3300

ggtgctatac tcttgaccct cacacccgct gggagtactg tgcaattaaa acatgcgctg 3360

acaatactat gaatgacact gatgttcctt tggaaacaac tgaatgcatc caaggtcaag 3420

gagaaggcta caggggcact gtcaatacca tttggaatgg aattccatgt cagcgttggg 3480

attctcagta tcctcacgag catgacatga ctcctgaaaa tttcaagtgc aaggacctac 3540

gagaaaatta ctgccgaaat ccagatgggt ctgaatcacc ctggtgtttt accactgatc 3600

caaacatccg agttggctac tgctcccaaa ttccaaactg tgatatgtca catggacaag 3660

attgttatcg tgggaatggc aaaaattata tgggcaactt atcccaaaca agatctggac 3720

taacatgttc aatgtgggac aagaacatgg aagacttaca tcgtcatatc ttctgggaac 3780

cagatgcaag taagctgaat gagaattact gccgaaatcc agatgatgat gctcatggac 3840

cctggtgcta cacgggaaat ccactcattc cttgggatta ttgccctatt tctcgttgtg 3900

aaggtgatac cacacctaca atagtcaatt tagaccatcc cgtaatatct tgtgccaaaa 3960

cgaaacaatt gcgagttgta aatgggattc caacacgaac aaacatagga tggatggtta 4020

gtttgagata cagaaataaa catatctgcg gaggatcatt gataaaggag agttgggttc 4080

ttactgcacg acagtgtttc ccttctcgag acttgaaaga ttatgaagct tggcttggaa 4140

ttcatgatgt ccacggaaga ggagatgaga aatgcaaaca ggttctcaat gtttcccagc 4200

tggtatatgg ccctgaagga tcagatctgg ttttaatgaa gcttgccagg cctgctgtcc 4260

tggatgattt tgttagtacg attgatttac ctaattatgg atgcacaatt cctgaaaaga 4320

ccagttgcag tgtttatggc tggggctaca ctggattgat caactatgat ggcctattac 4380

gagtggcaca tctctatata atgggaaatg agaaatgcag ccagcatcat cgagggaagg 4440

tgactctgaa tgagtctgaa atatgtgctg gggctgaaaa gattggatca ggaccatgtg 4500

agggggatta tggtggccca cttgtttgtg agcaacataa aatgagaatg gttcttggtg 4560

tcattgttcc tggtcgtgga tgtgccattc caaatcgtcc tggtattttt gtccgagtag 4620

catattatgc aaaatggata cacaaaatta ttttaacata taaggtacca cagtcatag 4679

<210> 20
<211> 3679
<212> DNA
<213> Artificial Sequence

<220>
<223> HGF-X7 gene

<400> 20
atgtgggtga ccaaactcct gccagccctg ctgctgcagc atgtcctcct gcatctcctc 60

ctgctcccca tcgccatccc ctatgcagag ggacaaagga aaagaagaaa tacaattcat 120

gaattcaaaa aatcagcaaa gactacccta atcaaaatag atccagcact gaagataaaa 180

accaaaaaag tgaatactgc agaccaatgt gctaatagat gtactaggaa taaaggactt 240

ccattcactt gcaaggcttt gtttttgat aaagcaagaa aacaatgcct ctggttcccc 300

ttcaatagca tgtcaagtgg agtgaaaaaa gaatttggcc atgaatttga cctctatgaa 360

aacaaagact acattagaaa ctgcatcatc ggtaaaggac gcagctacaa gggaacagta 420

tctatcacta agagtggcat caaatgtcag ccctggagtt ccatgatacc acacgaacac 480

aggtaagaac agtatgaaga aaagagatga agcctctgtc ttttttacat gttaacagtc 540

tcatattagt ccttcagaat aattctacaa tcctaaaata acttagccaa cttgctgaat 600

tgtattacgg caaggtttat atgaattcat gactgatatt tagcaaatga ttaattaata 660

tgttaataaa atgtagccaa aacaatatct taccttaatg cctcaatttg tagatctcgg 720

tatttgtgga tcctgggtag gaaacacatt tgaatggtat ttactaagat actaaaatcc 780

ttggacttca ctctaatttt agtgccattt agaactcaag gtctcagtaa aagtagaaat 840

aaagcctgtt aacaaaacac aagctgaata ttaaaaatgt aactggattt tcaaagaaat 900

gtttactggt attacctgta gatgtatatt ctttattatg atcttttgtg taaagtctgg 960

cagacaaatg caatatctaa ttgttgagtc caatatcaca agcagtacaa aagtataaaa 1020

aagacttggc cttttctaat gtgttaaaat actttatgct ggtaataaca ctaagagtag 1080

ggcactagaa attttaagtg aagataatgt gttgcagtta ctgcactcaa tggcttacta 1140

ttataaacca aaactgggat cactaagctc cagtcagtca aaatgatcaa aattattgaa 1200

gagaataagc aattctgttc tttattagga cacagtagat acagactaca aagtggagtg 1260

tgcttaataa gaggtagcat ttgttaagtg tcaattactc tattatccct tggagcttct 1320

caaaataacc atataaggtg taagatgtta aaggttatgg ttacactcag tgcacaggta 1380

agctaatagg ctgagagaag ctaaattact tactggggtc tcacagtaag aaagtgagct 1440

gaagtttcag cccagattta actggattct gggctcttta ttcatgttac ttcatgaatc 1500

tgtttctcaa ttgtgcagaa aaaagggggc tatttataag aaaagcaata aacaaacaag 1560

taatgatctc aaataagtaa tgcaagaaat agtgagattt caaaatcagt ggcagcgatt 1620

tctcagttct gtcctaagtg gccttgctca atcacctgct atcttttagt ggagctttga 1680

aattatgttt cagacaactt cgattcagtt ctagaatgtt tgactcagca aattcacagg 1740

ctcatctttc taacttgatg gtgaatatgg aaattcagct aaatggatgt taataaaatt 1800

caaacgtttt aaggacagat gaaaatgaca gaattttaag gtaaaatata tgaaggaata 1860

taagataaag gatttttcta ccttcagcaa aaacataccc actaattagt aaaattaata 1920

ggcaaaaaaa agttgcatgc tcttatactg taatgattat cattttaaaa ctagcttttt 1980

gccttcgagc tatcggggta aagacctaca ggaaaactac tgtcgaaatc ctcgagggga 2040

agaaggggga ccctggtgtt tcacaagcaa tccagaggta cgctacgaag tctgtgacat 2100

tcctcagtgt tcagaagttg aatgcatgac ctgcaatggg gagagttatc gaggtctcat 2160

ggatcataca gaatcaggca agatttgtca gcgctgggat catcagacac cacaccggca 2220

caaattcttg cctgaaagat atcccgacaa gggctttgat gataattatt gccgcaatcc 2280

cgatggccag ccgaggccat ggtgctatac tcttgaccct cacacccgct gggagtactg 2340

tgcaattaaa acatgcgctg acaatactat gaatgacact gatgttcctt tggaaacaac 2400

tgaatgcatc caaggtcaag gagaaggcta caggggcact gtcaatacca tttggaatgg 2460

aattccatgt cagcgttggg attctcagta tcctcacgag catgacatga ctcctgaaaa 2520

tttcaagtgc aaggacctac gagaaaatta ctgccgaaat ccagatgggt ctgaatcacc 2580

ctggtgtttt accactgatc caaacatccg agttggctac tgctcccaaa ttccaaactg 2640

tgatatgtca catggacaag attgttatcg tgggaatggc aaaaattata tgggcaactt 2700

atcccaaaca agatctggac taacatgttc aatgtgggac aagaacatgg aagacttaca 2760

tcgtcatatc ttctgggaac cagatgcaag taagctgaat gagaattact gccgaaatcc 2820

agatgatgat gctcatggac cctggtgcta cacgggaaat ccactcattc cttgggatta 2880

ttgccctatt tctcgttgtg aaggtgatac cacacctaca atagtcaatt tagaccatcc 2940

cgtaatatct tgtgccaaaa cgaaacaatt gcgagttgta aatgggattc caacacgaac 3000

aaacatagga tggatggtta gtttgagata cagaaataaa catatctgcg gaggatcatt 3060

gataaaggag agttgggttc ttactgcacg acagtgtttc ccttctcgag acttgaaaga 3120

ttatgaagct tggcttggaa ttcatgatgt ccacggaaga ggagatgaga aatgcaaaca 3180

ggttctcaat gtttcccagc tggtatatgg ccctgaagga tcagatctgg ttttaatgaa 3240

gcttgccagg cctgctgtcc tggatgattt tgttagtacg attgatttac ctaattatgg 3300

atgcacaatt cctgaaaaga ccagttgcag tgtttatggc tggggctaca ctggattgat 3360

caactatgat ggcctattac gagtggcaca tctctatata atgggaaatg agaaatgcag 3420

ccagcatcat cgagggaagg tgactctgaa tgagtctgaa atatgtgctg gggctgaaaa 3480

gattggatca ggaccatgtg agggggatta tggtggccca cttgtttgtg agcaacataa 3540

aatgagaatg gttcttggtg tcattgttcc tggtcgtgga tgtgccattc caaatcgtcc 3600

tggtattttt gtccgagtag catattatgc aaaatggata cacaaaatta ttttaacata 3660

taaggtacca cagtcatag 3679

<210> 21
<211> 2729
<212> DNA
<213> Artificial Sequence

<220>
<223> HGF-X8 gene

<400> 21
atgtgggtga ccaaactcct gccagccctg ctgctgcagc atgtcctcct gcatctcctc 60

ctgctcccca tcgccatccc ctatgcagag ggacaaagga aaagaagaaa tacaattcat 120

gaattcaaaa aatcagcaaa gactacccta atcaaaatag atccagcact gaagataaaa 180

accaaaaaag tgaatactgc agaccaatgt gctaatagat gtactaggaa taaaggactt 240

ccattcactt gcaaggcttt tgtttttgat aaagcaagaa aacaatgcct ctggttcccc 300

ttcaatagca tgtcaagtgg agtgaaaaaa gaatttggcc atgaatttga cctctatgaa 360

aacaaagact acattagaaa ctgcatcatc ggtaaaggac gcagctacaa gggaacagta 420

tctatcacta agagtggcat caaatgtcag ccctggagtt ccatgatacc acacgaacac 480

aggtaagaac agtatgaaga aaagagatga agcctctgtc ttttttacat gttaacagtc 540

tcatattagt ccttcagaat aattctacaa tcctaaaata acttagccaa cttgctgaat 600

tgtattacgg caaggtttat atgaattcat gactgatatt tagcaaatga ttaattaata 660

tgttaataaa atgtagccaa aacaatatct taccttaatg cctcaatttg tagatctcgg 720

tatttgtgga tccttatgtt tcagacaact tcgattcagt tctagaatgt ttgactcagc 780

aaattcacag gctcatcttt ctaacttgat ggtgaatatg gaaattcagc taaatggatg 840

ttaataaaat tcaaacgttt taaggacaga tgaaaatgac agaattttaa ggtaaaatat 900

atgaaggaat ataagataaa ggatttttct accttcagca aaaacatacc cactaattag 960

taaaattaat aggcaaaaaa aagttgcatg ctcttatact gtaatgatta tcattttaaa 1020

actagctttt tgccttcgag ctatcggggt aaagacctac aggaaaacta ctgtcgaaat 1080

cctcgagggg aagaaggggg accctggtgt ttcacaagca atccagaggt acgctacgaa 1140

gtctgtgaca ttcctcagtg ttcagaagtt gaatgcatga cctgcaatgg ggagagttat 1200

cgaggtctca tggatcatac agaatcaggc aagatttgtc agcgctggga tcatcagaca 1260

ccacaccggc acaaattctt gcctgaaaga tatcccgaca agggctttga tgataattat 1320

tgccgcaatc ccgatggcca gccgaggcca tggtgctata ctcttgaccc tcacacccgc 1380

tgggagtact gtgcaattaa aacatgcgct gacaatacta tgaatgacac tgatgttcct 1440

ttggaaacaa ctgaatgcat ccaaggtcaa ggagaaggct acaggggcac tgtcaatacc 1500

atttggaatg gaattccatg tcagcgttgg gattctcagt atcctcacga gcatgacatg 1560

actcctgaaa atttcaagtg caaggaccta cgagaaaatt actgccgaaa tccagatggt 1620

ctgaatcacc ctggtgtttt accactgatc caaacatccg agttggctac tgctcccaaa 1680

ttccaaactg tgatatgtca catggacaag attgttatcg tgggaatggc aaaaattata 1740

tgggcaactt atcccaaaca agatctggac taacatgttc aatgtgggac aagaacatgg 1800

aagacttaca tcgtcatatc ttctgggaac cagatgcaag taagctgaat gagaattact 1860

gccgaaatcc agatgatgat gctcatggac cctggtgcta cacgggaaat ccactcattc 1920

cttgggatta ttgccctatt tctcgttgtg aaggtgatac cacacctaca atagtcaatt 1980

tagaccatcc cgtaatatct tgtgccaaaa cgaaacaatt gcgagttgta aatgggattc 2040

caacacgaac aaacatagga tggatggtta gtttgagata cagaaataaa catatctgcg 2100

gaggatcatt gataaaggag agttgggttc ttactgcacg acagtgtttc ccttctcgag 2160

acttgaaaga ttatgaagct tggcttggaa ttcatgatgt ccacggaaga ggagatgaga 2220

aatgcaaaca ggttctcaat gtttcccagc tggtatatgg ccctgaagga tcagatctgg 2280

ttttaatgaa gcttgccagg cctgctgtcc tggatgattt tgttagtacg attgatttac 2340

ctaattatgg atgcacaatt cctgaaaaga ccagttgcag tgtttatggc tggggctaca 2400

ctggattgat caactatgat ggcctattac gagtggcaca tctctatata atgggaaatg 2460

agaaatgcag ccagcatcat cgagggaagg tgactctgaa tgagtctgaa atatgtgctg 2520

gggctgaaaa gattggatca ggaccatgtg agggggatta tggtggccca cttgtttgtg 2580

agcaacataa aatgagaatg gttcttggtg tcattgttcc tggtcgtgga tgtgccattc 2640

caaatcgtcc tggtattttt gtccgagtag catattatgc aaaatggata cacaaaatta 2700

ttttaacata taaggtacca cagtcatag 2729