

1/27

Figure 1

SEQ ID NO:1 (DBv1)

PLV

SEQ ID NO:3

CCC TTG GTC

SEQ ID NO:2 (DBv2)

PHS

SEQ ID NO:4

CCA CAC AGC

SEQ ID NO:5

PERNKERK

SEQ ID NO:6

CCG GAA CGC AAC AAA GAG CGA AAG

SEQ ID NO:7

CCC GAA AGG AAT AAA GAA AGG AAA

SEQ ID NO:8

CCA GAA AGA AAT AAA GAA AGA AAA

SEQ ID NO:9

CCA GAA CGA AAT AAA GAA AGA AAA

SEQ ID NO:10

PERNKERKEAELQAQTAEQ

SEQ ID NO:11 (DBv1-T7AC)

PLVPERNKERKEAELQAQTAEQ

SEQ ID NO:12 (DBv2-T7AC)

PHSPERNKERKEAELQAQTAEQ

2/27

Figure 1 (continued)

SEQ ID NO:13

CCC TTG GTC CCG GAA CGC AAC AAA GAG CGA AAG GAA GCT GAG TTG CAA GCT CAA
ACC GCT GAG CAA

SEQ ID NO:14

CCC TTG GTC CCC GAA AGG AAT AAA GAA AGG AAA GAA GCT GAG TTG CAA GCT CAA
ACC GCT GAG CAA

SEQ ID NO:15

CCC TTG GTC CCA GAA AGA AAT AAA GAA AGA AAA GAA GCT GAG TTG CAA GCT CAA ACC
GCT GAG CAA

SEQ ID NO:16

CCC TTG GTC CCA GAA CGA AAT AAA GAA AGA AAA GAA GCT GAG TTG CAA GCT CAA ACC
GCT GAG CAA

SEQ ID NO:17

CCA CAC AGC CCG GAA CGC AAC AAA GAG CGA AAG GAA GCT GAG TTG CAA GCT CAA
ACC GCT GAG CAA

SEQ ID NO:18

CCA CAC AGC CCC GAA AGG AAT AAA GAA AGG AAA GAA GCT GAG TTG CAA GCT CAA
ACC GCT GAG CAA

SEQ ID NO:19

CCA CAC AGC CCA GAA AGA AAT AAA GAA AGA AAA GAA GCT GAG TTG CAA GCT CAA ACC
GCT GAG CAA

SEQ ID NO:20

CCA CAC AGC CCA GAA CGA AAT AAA GAA AGA AAA GAA GCT GAG TTG CAA GCT CAA ACC
GCT GAG CAA

SEQ ID NO:21

PERNKERKEAELEAETAEQ

SEQ ID NO:22 (DBv1-T7A3)

PLVPERNKERKEAELEAETAEQ

3/27

Figure 1 (continued)

SEQ ID NO:23 (DBv2-T7A3)

PHSPERNKERKEAELEAETAEQ

SEQ ID NO:24

CCC TTG GTC CCG GAA CGC AAC AAA GAG CGA AAG GAA GCT GAG TTG GAA GCT GAG
ACC GCT GAG CAA

SEQ ID NO:25

CCC TTG GTC CCC GAA AGG AAT AAA GAA AGG AAA GAA GCT GAG TTG GAA GCT GAG
ACC GCT GAG CAA

SEQ ID NO:26

CCC TTG GTC CCA GAA AGA AAT AAA GAA AGA AAA GAA GCT GAG TTG GAA GCT GAG
ACC GCT GAG CAA

SEQ ID NO:27

CCC TTG GTC CCA GAA CGA AAT AAA GAA AGA AAA GAA GCT GAG TTG GAA GCT GAG
ACC GCT GAG CAA

SEQ ID NO:28

CCA CAC AGC CCG GAA CGC AAC AAA GAG CGA AAG GAA GCT GAG TTG GAA GCT GAG
ACC GCT GAG CAA

SEQ ID NO:29

CCA CAC AGC CCC GAA AGG AAT AAA GAA AGG AAA GAA GCT GAG TTG GAA GCT GAG
ACC GCT GAG CAA

SEQ ID NO:30

CCA CAC AGC CCA GAA AGA AAT AAA GAA AGA AAA GAA GCT GAG TTG GAA GCT GAG
ACC GCT GAG CAA

SEQ ID NO:31

CCA CAC AGC CCA GAA CGA AAT AAA GAA AGA AAA GAA GCT GAG TTG GAA GCT GAG
ACC GCT GAG CAASEQ ID NO:32 (amino acid sequence of CASPON tag: including DBv1, part of T7AC tag, **6-His tag**,
SA linker, Strep II tag, GSG linker and caspase 2 recognition and cleavage site)PLVPERNKERKEAELQAQTAEQHHHHHSAWSHPQFEKGSGVDVAD

4/27

Figure 1 (continued)

SEQ ID NO:33 (nucleotide sequence encoding the tag of SEQ ID NO:32, comprising DBv1)
CCCTTGGTCCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGGCG
TGGATGTGGCGGAT

SEQ ID NO:34 (nucleotide sequence encoding the tag of SEQ ID NO:32, comprising DBv1)
CCCTTGGTCCCGGAAAGGAATAAGAAAGGAAGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGGCG
TGGATGTGGCGGAT

SEQ ID NO:35 (amino acid sequence of CASPON tag: including DBv2, part of T7AC tag, **6-His tag**,
SA linker, Strep II tag, GSG linker and caspase 2 recognition and cleavage site)
PHSPERNKERKEAELQAQTAEQHHHHHHS~~AW~~SH~~PQ~~FEK~~GSG~~VDVAD

SEQ ID NO:36 (nucleotide sequence encoding the tag of SEQ ID NO:35, comprising DBv2)
CCACACAGCCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGGCG
TGGATGTGGCGGAT

SEQ ID NO:37 (nucleotide sequence encoding the tag of SEQ ID NO:35, comprising DBv2)
CCACACAGCCCGGAAAGGAATAAGAAAGGAAGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGGCG
TGGATGTGGCGGAT

SEQ ID NO:38 (nucleotide sequence encoding the tag of SEQ ID NO:32, comprising DBv1)
CCCTTGGTCCCAGAAAGAAATAAGAAAGAAAGAAGCTGAGTTGCAAGCTCAAACCGCTGAG
CAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGGCGT
GGATGTGGCGGAT

SEQ ID NO:39 (nucleotide sequence encoding the tag of SEQ ID NO:32, comprising DBv1)
CCCTTGGTCCCAGAACGAAATAAGAAAGAAAGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGGCG
TGGATGTGGCGGAT

SEQ ID NO:40 (nucleotide sequence encoding the tag of SEQ ID NO:35, comprising DBv2)
CCACACAGCCCGAGAAAGAAATAAGAAAGAAAGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGGCG
TGGATGTGGCGGAT

5/27

Figure 1 (continued)

SEQ ID NO:41 (nucleotide sequence encoding the tag of SEQ ID NO:35, comprising DBv2)
CCACACAGCCCAGAACGAAATAAAGAAAGAAAAGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGGCG
TGGATGTGGCGGAT

SEQ ID NO:42 (amino acid sequence of CASPON tag: including DBv1, part of T7AC tag, **6-His tag**,
GSG linker and **caspase 2 recognition and cleavage site**)
PLVPERNKERKEAELQAQTAEQHSHHHHSGVDVAD

SEQ ID NO:43 (nucleotide sequence encoding the tag of SEQ ID NO:42, comprising DBv1)
CCCTTGGTCCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATGGCAGCGGCGTGGATGTGGCGGAT

SEQ ID NO:44 (nucleotide sequence encoding the tag of SEQ ID NO:42, comprising DBv1)
CCCTTGGTCCCGGAAAGGAATAAAGAAAGGAAGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATGGCAGCGGCGTGGATGTGGCGGAT

SEQ ID NO:45 (nucleotide sequence encoding the tag of SEQ ID NO:42, comprising DBv1)
CCCTTGGTCCCAGAAAGAAATAAAGAAAGAAAAGAAGCTGAGTTGCAAGCTCAAACCGCTGAG
CAACACCATCATCACCATCATGGCAGCGGCGTGGATGTGGCGGAT

SEQ ID NO:46 (nucleotide sequence encoding the tag of SEQ ID NO:42, comprising DBv1)
CCCTTGGTCCCAGAACGAAATAAAGAAAGAAAAGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATGGCAGCGGCGTGGATGTGGCGGAT

SEQ ID NO:47 (amino acid sequence of CASPON tag: including DBv2, partial T7AC tag, **6-His tag**,
GSG linker and **caspase 2 recognition and cleavage site**)
PHSPERNKERKEAELQAQTAEQHSHHHHSGVDVAD

SEQ ID NO:48 (nucleotide sequence encoding the tag of SEQ ID NO:47, comprising DBv2)
CCACACAGCCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATGGCAGCGGCGTGGATGTGGCGGAT

SEQ ID NO:49 (nucleotide sequence encoding the tag of SEQ ID NO:47, comprising DBv2)
CCACACAGCCCGGAAAGGAATAAAGAAAGGAAGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATGGCAGCGGCGTGGATGTGGCGGAT

6/27

Figure 1 (continued)

SEQ ID NO:50 (nucleotide sequence encoding the tag of SEQ ID NO:47, comprising DBv2)
CCACACAGCCCAGAAAGAAATAAGAAAGAAAGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATGGCAGCGGCGTGGATGTGGCGGAT

SEQ ID NO:51 (nucleotide sequence encoding the tag of SEQ ID NO:47, comprising DBv2)
CCACACAGCCCAGAACGAAATAAGAAAGAAAGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATGGCAGCGGCGTGGATGTGGCGGAT

SEQ ID NO:52 (amino acid sequence of CASPON tag: including starting methionine, T7AC tag, **6-His tag**, *SA linker*, Strep II tag, *GSG linker* and **caspase 2 recognition and cleavage site**)
MLEDPERNKERKEAELQAQTAEQH HHHHHSAWSHPQFEKGSGVDVAD

SEQ ID NO:55 (amino acid sequence of PTH)
SVSEIQLMHNLGKHLNSMERVEWLRKKLQDVHNFVALGAPLAPRDAGSQRPRKKEDNVLVESHE
KSLGEADKADVNVLTAKSQ

SEQ ID NO:56 (nucleotide sequence of PTH)
AGCGTTAGCGAAATTCAGCTGATGCATAATCTGGGCAAACATCTGAATAGCATGGAACGTGTT
GAATGGCTGCGTAAAAAACTGCAGGATGTGCATAATTTTGTGCACTGGGTGCACCGCTGGCA
CCGCGTGATGCAGGTAGTCAGCGTCCTCGTAAAAAAGAAGATAACGTTCTGGTTGAAAGCCA
CGAAAAAAGCCTGGGTGAAGCAGATAAAGCAGATGTTAATGTTCTGACCAAAGCCAAAAGCCA
GTAATAA

SEQ ID NO:57 (amino acid sequence of fusion protein comprising CASPON tag and PTH)
MLEDPERNKERKEAELQAQTAEQH HHHHHSAWSHPQFEKGSGVDVADSVSEIQLMHNLGKHLN
SMERVEWLRKKLQDVHNFVALGAPLAPRDAGSQRPRKKEDNVLVESHEKSLGEADKADVNVLT
AKSQ

SEQ ID NO:58 (nucleotide sequence encoding fusion protein of SEQ ID NO:57)
ATGCTGGAGGATCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGC
TGAGCAACACCATCACCATCACCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCG
GCGTGGATGTGGCGGATAGCGTTAGCGAAATTCAGCTGATGCATAATCTGGGCAAACATCTG
AATAGCATGGAACGTGTTGAATGGCTGCGTAAAAAACTGCAGGATGTGCATAATTTTGTGCA
CTGGGTGCACCGCTGGCACCGCGTGATGCAGGTAGTCAGCGTCCTCGTAAAAAAGAAGATAA
CGTTCTGGTTGAAAGCCACGAAAAAAGCCTGGGTGAAGCAGATAAAGCAGATGTTAATGTTCT
GACCAAAGCCAAAAGCCAGTAATAA

7/27

Figure 1 (continued)

SEQ ID NO:59 (nucleotide sequence encoding fusion protein of SEQ ID NO:57)

ATGCTAGAAGATCCCGAAAGGAATAAAGAAAGGAAAGAAGCTGAGTTGCAAGCTCAAACCGCT
GAGCAACACCATCACCATCACCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGG
CGTGGATGTGGCGGATAGCGTTAGCGAAATTCAGCTGATGCATAATCTGGGCAAACATCTGAA
TAGCATGGAACGTGTTGAATGGCTGCGTAAAAAACTGCAGGATGTGCATAATTTTGTGCACT
GGGTGCACCGCTGGCACC GCGTGATGCAGGTAGTCAGCGTCCTCGTAAAAAAGAAGATAACG
TTCTGGTTGAAAGCCACGAAAAAAGCCTGGGTGAAGCAGATAAAGCAGATGTTAATGTTCTGA
CCAAAGCCAAAAGCCAGTAATAA

SEQ ID NO:60 (amino acid sequence of fusion protein comprising DBv1 and PTH)

MPLVPERNKERKEAELQAQTAEQH HHHHSAWSHPQFEKSGVDVADSVSEIQLMHN LGKHLN
SMERVEWLRKKLQDVHNFVALGAPLAPRDAGSQRPRKKEDNVLVESHEKSLGEADKADVNLTK
AKSQ

SEQ ID NO:61 (nucleotide sequence encoding fusion protein of SEQ ID NO:60)

ATGCCCTTGGTCCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGC
TGAGCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCG
GCGTGGATGTGGCGGATAGCGTTAGCGAAATTCAGCTGATGCATAATCTGGGCAAACATCTG
AATAGCATGGAACGTGTTGAATGGCTGCGTAAAAAACTGCAGGATGTGCATAATTTTGTGCA
CTGGGTGCACCGCTGGCACC GCGTGATGCAGGTAGTCAGCGTCCTCGTAAAAAAGAAGATAA
CGTTCTGGTTGAAAGCCACGAAAAAAGCCTGGGTGAAGCAGATAAAGCAGATGTTAATGTTCT
GACCAAAGCCAAAAGCCAGTAATAA

SEQ ID NO:62 (nucleotide sequence encoding fusion protein of SEQ ID NO:60)

ATGCCCTTGGTCCCCGAAAGGAATAAAGAAAGGAAAGAAGCTGAGTTGCAAGCTCAAACCGC
TGAGCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCG
GCGTGGATGTGGCGGATAGCGTTAGCGAAATTCAGCTGATGCATAATCTGGGCAAACATCTG
AATAGCATGGAACGTGTTGAATGGCTGCGTAAAAAACTGCAGGATGTGCATAATTTTGTGCA
CTGGGTGCACCGCTGGCACC GCGTGATGCAGGTAGTCAGCGTCCTCGTAAAAAAGAAGATAA
CGTTCTGGTTGAAAGCCACGAAAAAAGCCTGGGTGAAGCAGATAAAGCAGATGTTAATGTTCT
GACCAAAGCCAAAAGCCAGTAATAA

SEQ ID NO:63 (amino acid sequence of fusion protein comprising DBv2 and PTH)

MPHSPERNKERKEAELQAQTAEQH HHHHSAWSHPQFEKSGVDVADSVSEIQLMHN LGKHLN
SMERVEWLRKKLQDVHNFVALGAPLAPRDAGSQRPRKKEDNVLVESHEKSLGEADKADVNLTK
AKSQ

8/27

Figure 1 (continued)

SEQ ID NO:64 (nucleotide sequence encoding fusion protein of SEQ ID NO:63)

CCACACAGCCCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGGCG
TGGATGTGGCGGATAGCGTTAGCGAAATTCAGCTGATGCATAATCTGGGCAAACATCTGAATA
GCATGGAACGTGTTGAATGGCTGCGTAAAAAACTGCAGGATGTGCATAATTTTGTGCACTGG
GTGCACCGCTGGCACC GCGTGATGCAGGTAGTCAGCGTCCTCGTAAAAAAGAAGATAACGTT
CTGGTTGAAAGCCACGAAAAAAGCCTGGGTGAAGCAGATAAAGCAGATGTTAATGTTCTGACC
AAAGCCAAAAGCCAGTAATAA

SEQ ID NO:65 (nucleotide sequence encoding fusion protein of SEQ ID NO:63)

CCACACAGCCCCGAAAGGAATAAAGAAAGGAAGAAGCTGAGTTGCAAGCTCAAACCGCTGA
GCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGGCG
TGGATGTGGCGGATAGCGTTAGCGAAATTCAGCTGATGCATAATCTGGGCAAACATCTGAATA
GCATGGAACGTGTTGAATGGCTGCGTAAAAAACTGCAGGATGTGCATAATTTTGTGCACTGG
GTGCACCGCTGGCACC GCGTGATGCAGGTAGTCAGCGTCCTCGTAAAAAAGAAGATAACGTT
CTGGTTGAAAGCCACGAAAAAAGCCTGGGTGAAGCAGATAAAGCAGATGTTAATGTTCTGACC
AAAGCCAAAAGCCAGTAATAA

SEQ ID NO:66 (amino acid sequence of hFGF2)

AAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHIKLQLQAE
ERGVVSIKGVSANRYLAMKEDGRLLASKSVTDECFERLESNNYNTYRSRKYTSWYVALKRTGQ
YKLGSKTGPGQKAILFLPMSAKS

SEQ ID NO:67 (nucleotide sequence of hFGF2)

GCCGCTGGTTTCGATTACTACCCTGCCTGCTTTACCTGAAGATGGTGGTTCTGGTGCCTTCCCC
CCGGGTCACTTCAAAGACCCAAAACGTTTGTACTGTAAAAACGGTGGCTTTTTTCTGCGCATC
CATCCGGACGCGCGTGATGGTGTCCGTGAAAAGTCCGACCCGCACATTAAGCTGCAACT
GCAGGCCGAGGAGCGTGTTGTTAGCATCAAAGGCGTGAGCGCAAATCGTTACCTGGCG
ATGAAAGAGGATGGCCGTCTGCTGGCGAGCAAGAGCGTTACCGACGAGTGCTTCTTCTTGA
ACGCCTGGAGAGCAATAATTACAACACCTACCGTAGCCGCAAGTATACCTCTTGGTATGTGGC
GCTGAAGCGTACGGGCCAGTATAAATTGGGTAGCAAAACGGGTCCGGGCCAAAAGGCAATCC
TGTTCTGCCGATGAGCGCGAAATCCTAA

SEQ ID NO:68 (amino acid sequence of fusion protein comprising CASPON tag and hFGF2)

MLEDPERNKERKEAELQAQTAEQHSHHHHSAWSHPQFEKSGVDVADAAGSITTLPALPEDGGSG
AFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGVSANRYL
AMKEDGRLLASKSVTDECFERLESNNYNTYRSRKYTSWYVALKRTGQYKLGSKTGPGQKAILF
LPMSAKS

9/27

Figure 1 (continued)

SEQ ID NO:69 (nucleotide sequence encoding fusion protein of SEQ ID NO:68)

ATGCTGGAGGATCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGC
TGAGCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCG
GCGTGGATGTGGCGGATGCCGCTGGTTCGATTACTACCCTGCCTGCTTTACCTGAAGATGGT
GGTTCTGGTGCGTTCCCGCCGGGTCACTTCAAAGACCCAAAACGTTTGTACTGTAAAAACGGT
GGCTTTTTTCTGCGCATCCATCCGGACGGCCGCGTGGATGGTGTCCGTGAAAAGTCCGACCC
GCACATTAAGCTGCAACTGCAGGCCGAGGAGCGTGGTGTGTTAGCATCAAAGGCGTGAGCG
CAAATCGTTACCTGGCGATGAAAGAGGATGGCCGTCTGCTGGCGAGCAAGAGCGTTACCGAC
GAGTGCTTCTTCTTTGAACGCCTGGAGAGCAATAATTACAACACCTACCGTAGCCGCAAGTAT
ACCTCTTGGTATGTGGCGCTGAAGCGTACGGGCCAGTATAAATTGGGTAGCAAAACGGGTCC
GGGCCAAAAGGCAATCCTGTTCTGCGCATGAGCGCGAAATCCTAA

SEQ ID NO:70 (nucleotide sequence encoding fusion protein of SEQ ID NO:68)

ATGCTAGAAGATCCCGAAAGGAATAAGAAAGGAAGAAGCTGAGTTGCAAGCTCAAACCGCT
GAGCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCGG
CGTGGATGTGGCGGATGCCGCTGGTTCGATTACTACCCTGCCTGCTTTACCTGAAGATGGTG
GTTCTGGTGCGTTCCCGCCGGGTCACTTCAAAGACCCAAAACGTTTGTACTGTAAAAACGGTG
GCTTTTTTCTGCGCATCCATCCGGACGGCCGCGTGGATGGTGTCCGTGAAAAGTCCGACCCG
CACATTAAGCTGCAACTGCAGGCCGAGGAGCGTGGTGTGTTAGCATCAAAGGCGTGAGCGC
AAATCGTTACCTGGCGATGAAAGAGGATGGCCGTCTGCTGGCGAGCAAGAGCGTTACCGACG
AGTGCTTCTTCTTTGAACGCCTGGAGAGCAATAATTACAACACCTACCGTAGCCGCAAGTATA
CCTCTTGGTATGTGGCGCTGAAGCGTACGGGCCAGTATAAATTGGGTAGCAAAACGGGTCCG
GGCCAAAAGGCAATCCTGTTCTGCGCATGAGCGCGAAATCCTAA

SEQ ID NO:71 (amino acid sequence of fusion protein comprising DBv2 and hFGF2)

MPHSPERNKERKEAELQAQTAEQHSHHHHSAWSHPQFEKSGVDVADAAGSITLPLPEDGG
SGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHIKLQLQAEERGVSIVKVSANRY
LAMKEDGRLLASKSVTDECFERLESNNYNTYRSRKYTSWYVALKRTGQYKLGSKTGPQKAIL
FLPMSAKS

10/27

Figure 1 (continued)

SEQ ID NO:72 (nucleotide sequence encoding fusion protein of SEQ ID NO:71)

ATGCCACACAGCCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGC
TGAGCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCG
GCGTGATGTGGCGGATGCCGCTGGTTCGATTACTACCCTGCCTGCTTTACCTGAAGATGGT
GGTTCTGGTGCGTTCCCGCCGGGTCACTTCAAAGACCCAAAACGTTTGTACTGTAAAAACGGT
GGCTTTTTTCTGCGCATCCATCCGGACGGCCGCGTGGATGGTGTCCGTGAAAAGTCCGACCC
GCACATTAAGCTGCAACTGCAGGCCGAGGAGCGTGTTGTTAGCATCAAAGGCGTGAGCG
CAAATCGTTACCTGGCGATGAAAGAGGATGGCCGTCTGCTGGCGAGCAAGAGCGTTACCGAC
GAGTGCTTCTTCTTTGAACGCCTGGAGAGCAATAATTACAACACCTACCGTAGCCGCAAGTAT
ACCTCTTGGTATGTGGCGCTGAAGCGTACGGGCCAGTATAAATTGGGTAGCAAAACGGGTCC
GGGCCAAAAGGCAATCCTGTTCTGCCGATGAGCGCGAAATCCTAA

SEQ ID NO:73 (nucleotide sequence encoding fusion protein of SEQ ID NO:71)

ATGCCACACAGCCCCGAAAGGAATAAAGAAAGGAAAGGAAGCTGAGTTGCAAGCTCAAACCGC
TGAGCAACACCATCATCACCATCATAGCGCGTGGAGCCATCCGCAGTTTGAAAAAGGCAGCG
GCGTGATGTGGCGGATGCCGCTGGTTCGATTACTACCCTGCCTGCTTTACCTGAAGATGGT
GGTTCTGGTGCGTTCCCGCCGGGTCACTTCAAAGACCCAAAACGTTTGTACTGTAAAAACGGT
GGCTTTTTTCTGCGCATCCATCCGGACGGCCGCGTGGATGGTGTCCGTGAAAAGTCCGACCC
GCACATTAAGCTGCAACTGCAGGCCGAGGAGCGTGTTGTTAGCATCAAAGGCGTGAGCG
CAAATCGTTACCTGGCGATGAAAGAGGATGGCCGTCTGCTGGCGAGCAAGAGCGTTACCGAC
GAGTGCTTCTTCTTTGAACGCCTGGAGAGCAATAATTACAACACCTACCGTAGCCGCAAGTAT
ACCTCTTGGTATGTGGCGCTGAAGCGTACGGGCCAGTATAAATTGGGTAGCAAAACGGGTCC
GGGCCAAAAGGCAATCCTGTTCTGCCGATGAGCGCGAAATCCTAA

SEQ ID NO:74

CCC TTG GTC CCA GAA CGA AAT AAA GAA CGA AAA GAA GCT GAG TTG CAA GCT CAA ACC
GCT GAG CAA

SEQ ID NO:75

CCA CAC AGC CCA GAA CGA AAT AAA GAA CGA AAA GAA GCT GAG TTG CAA GCT CAA
ACC GCT GAG CAA

SEQ ID NO:76

CCC TTG GTC CCA GAA CGA AAT AAA GAA CGA AAA GAA GCT GAG TTG GAA GCT GAG
ACC GCT GAG CAA

11/27

Figure 1 (continued)

SEQ ID NO:77

CCA CAC AGC CCA GAA CGA AAT AAA GAA CGA AAA GAA GCT GAG TTG GAA GCT GAG
ACC GCT GAG CAA

SEQ ID NO:78 (T7A3)

LEDPERNKERKEAELEAETAEQ

SEQ ID NO:79 (T7AC)

LEDPERNKERKEAELQAQTAEQ

SEQ ID NO:85

PERNKERKEAELQAQTAEQHHHHHSAWSHPQFEKSGSGVDVAD

SEQ ID NO:86

PERNKERKEAELEAETAEQHHHHHSAWSHPQFEKSGSGVDVAD

SEQ ID NO:87

PERNKERKEAELQAQTAEQHHHHHSGSGVDVAD

SEQ ID NO:88

PERNKERKEAELEAETAEQHHHHHSGSGVDVAD

12/27

Figure 2

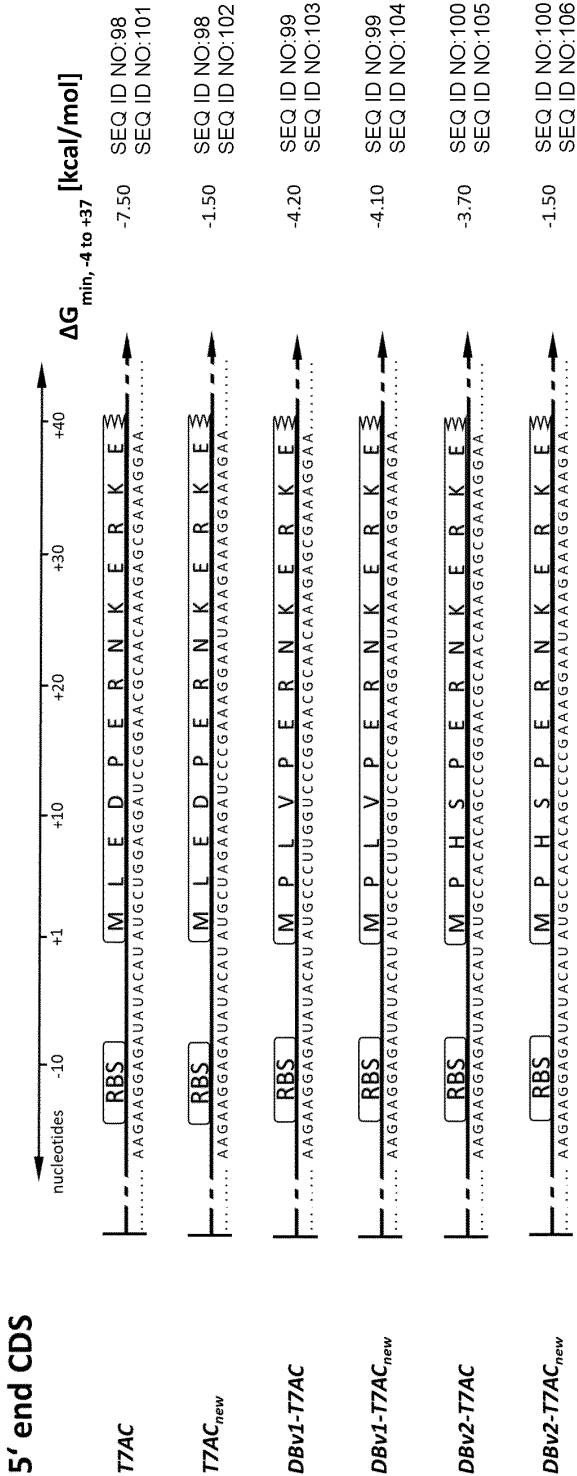


FIGURE 3

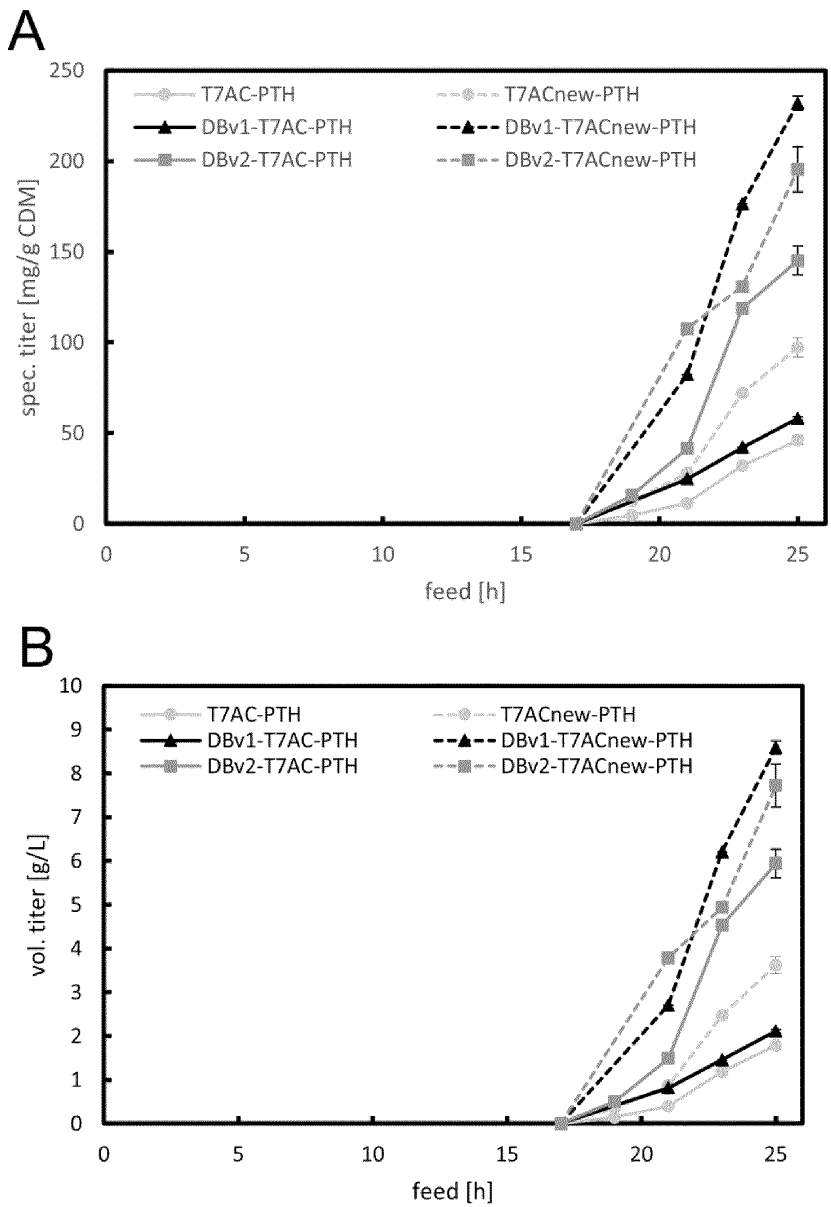


FIGURE 3 continued

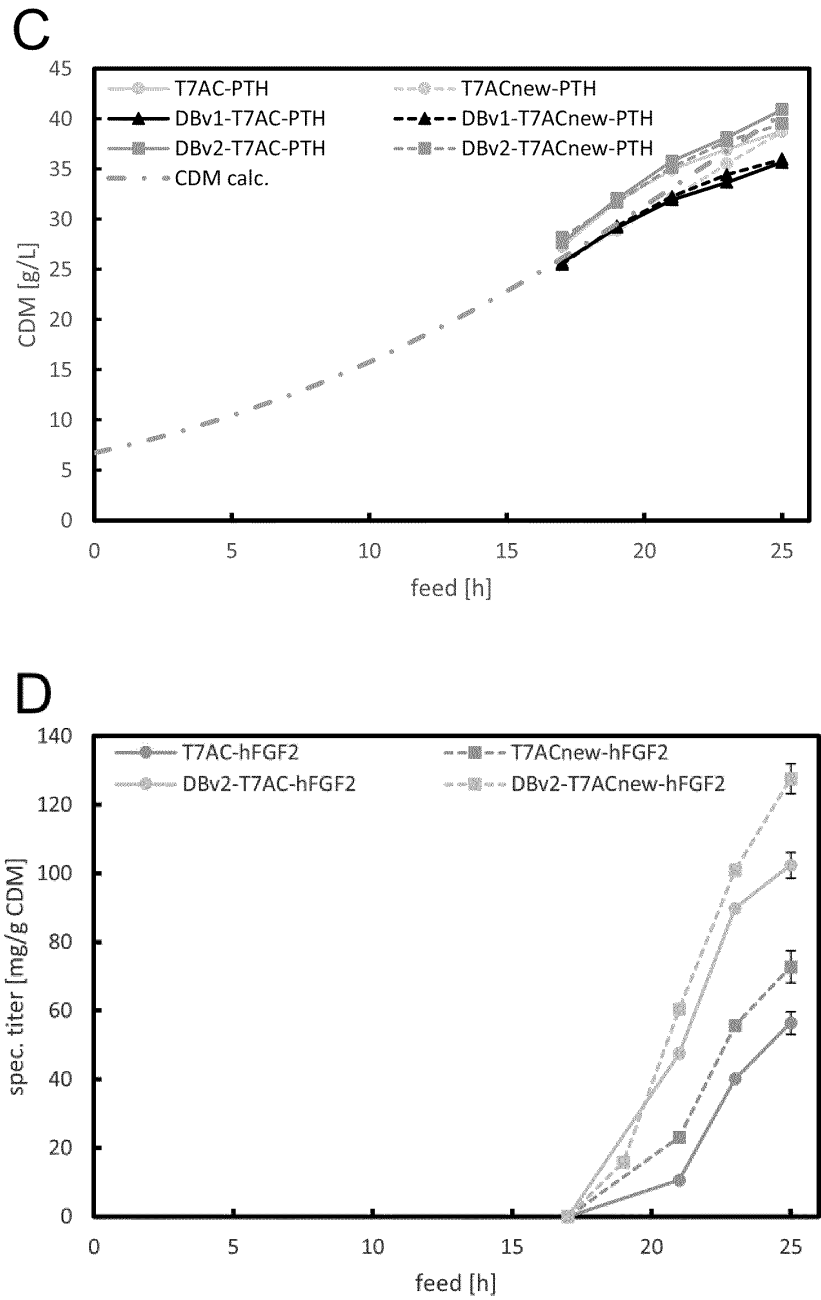


FIGURE 3 continued

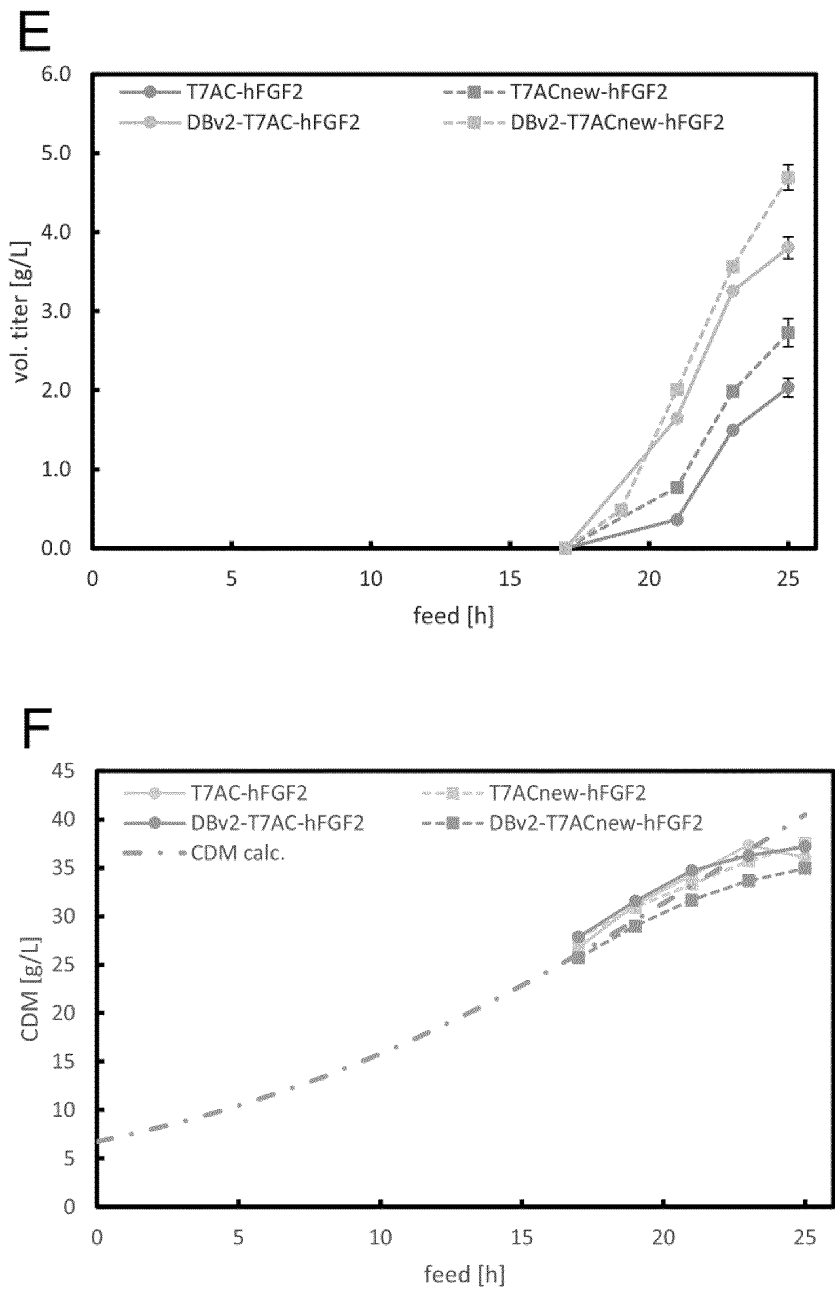
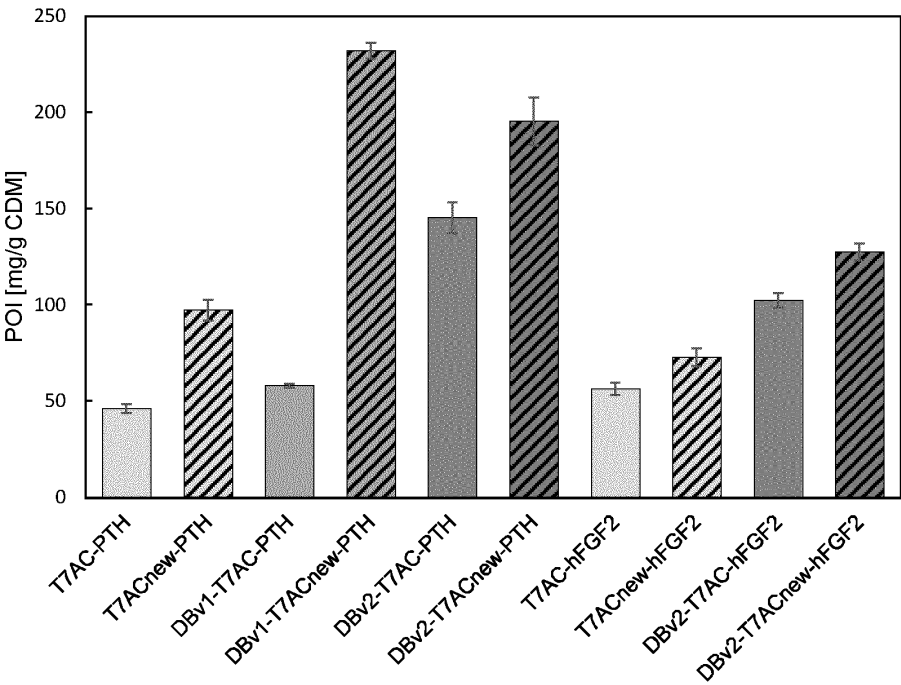


FIGURE 4



5

FIGURE 5

Consensus Sequence:

10	PLVPERNKERKEAELQAQTAEQ	SEQ ID NO:11
	PHSPERNKERKEAELQAQTAEQ	SEQ ID NO:12
	PLVPERNKERKEAELEAETAEQ	SEQ ID NO:22
	PHSPERNKERKEAELEAETAEQ	SEQ ID NO:23
15	PXXPERNKERKEAELXAXTAEQ	SEQ ID NO:84

FIGURE 6

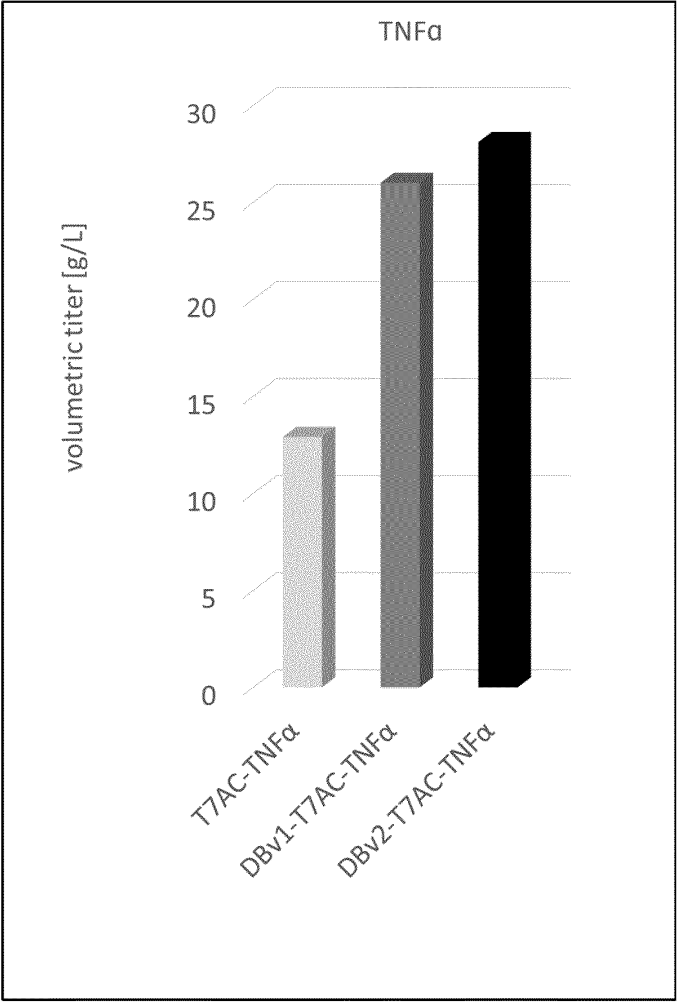


FIGURE 7

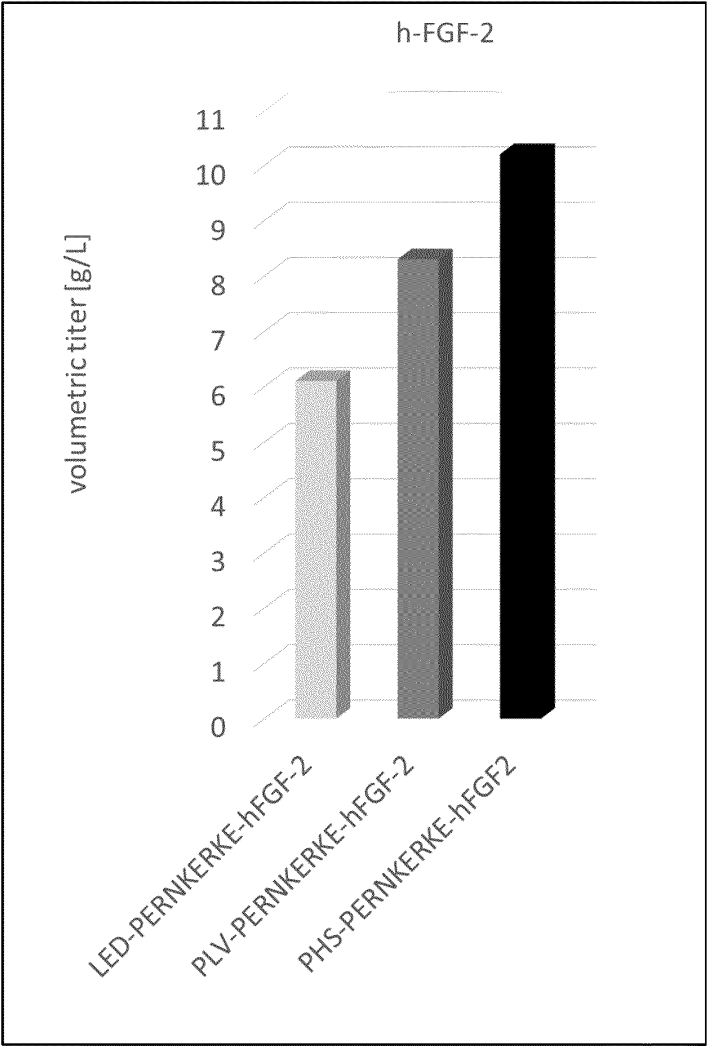
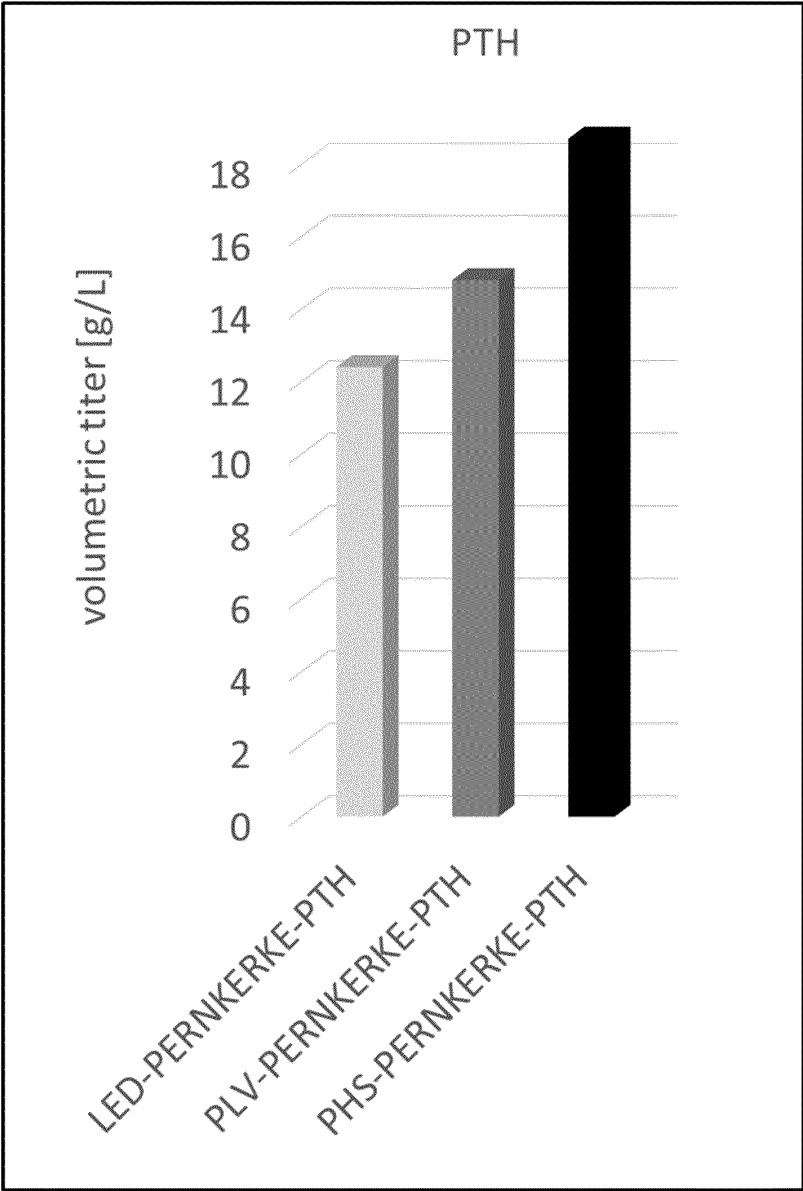


FIGURE 8



20/27

Figure 9

SEQ ID NO: 107 (amino acid sequence of the PERNKERKE - tag)

PERNKERKE

SEQ ID NO: 108 (nucleic acid sequence of the PERNKERKE - tag)

CCGGAACGCAACAAAGAGCGAAAGGAA

SEQ ID NO: 109 (amino acid sequence of the LED-PERNKERKE - tag)

LEDPERNKERKE

SEQ ID NO: 110 (nucleic acid sequence of the LED-PERNKERKE - tag)

CTGGAGGATCCGGAACGCAACAAAGAGCGAAAGGAA

SEQ ID NO: 111 (amino acid sequence of the PLV-PERNKERKE - tag)

PLVPERNKERKE

SEQ ID NO: 112 (nucleic acid sequence of the PLV-PERNKERKE - tag)

CCCTTGGTCCCGGAACGCAACAAAGAGCGAAAGGAA

SEQ ID NO: 113 (amino acid sequence of the PHS-PERNKERKE - tag)

PHSPERNKERKE

SEQ ID NO: 114 (nucleic acid sequence of the PHS-PERNKERKE - tag)

CCACACAGCCCGGAACGCAACAAAGAGCGAAAGGAA

SEQ ID NO: 115 (amino acid sequence of TNF α)VRSSSRTPSDKPVAVHVVANPQAEGLQWLNRRANALLANGVELRDNQLVWPSEGLYLIYSQVLFK
GQGCPSTHVLLTHTISRIAVSYQTKVNLLSAIKSPCQRETPEGAEAKPWYEPIYLGGVFQLEKGDRL
SAEINRPDYLDFAESGQVYFGIAL

21/27

Figure 9 (continued)

SEQ ID NO:116 (nucleotide sequence of TNF α)

GTCCGTTCCAGCAGCCGTACGCCGAGCGATAAACCTGTCGCGCACGTAGTGGCGAATCCGC
AAGCCGAGGGTCAGCTGCAGTGGCTGAATCGTCGCGCAACGCGCTGCTGGCCAATGGTGT
TGAGCTGCGTGACAACCAACTGGTTGTTCCATCCGAAGGCCTGTACCTGATTTATTCTCAAGT
GCTGTTCAAAGGTCAGGGTTGCCCCGAGCACGCACGTGTTGCTGACCCATACCATTAGCCGCA
TCGCAGTCAGCTACCAGACCAAGGTCAACCTGTTGAGCGCGATCAAGTCCCCGTGTCAACGT
GAAACGCCTGAGGGCGCTGAGGCCAAGCCGTGGTATGAGCCGATCTACCTGGGTGGCGTGT
TTCAGCTGGAGAAAGGTGACCGTCTGAGCGCGGAAATCAACCGCCCGGATTATTTAGATTTTG
CCGAGTCTGGTCAGGTGTA CTTCGGCATTATTGCACTGTAATAA

SEQ ID NO: 117 (amino acid sequence of T7AC – TNF α)

MLEDPERNKERKEAELQAQTAEQH HHHHHHSGVDVADVRSSSRTPSDKPVAVHVVANPQAEQQL
QWLNRRANALLANGVELRDNQLVVPSEGLYLIYSQVLFKGQGCPSTHVLLTHTISRIAVSYQTKVN
LLSAIKSPCQRETPEGAEAKPWYEPIYLGGVFQLEKGDRLSAEINRPDYLDFAESGQVYFGIIAL

SEQ ID NO: 118 (nucleotide sequence encoding fusion protein of SEQ ID NO: 117)

ATGCTGGAGGATCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGC
TGAGCAACACCATCACCATCACCATGGCAGCGGCGTGATGTGGCGGATGTCCGTTCCAGCA
GCCGTACGCCGAGCGATAAACCTGTCGCGCACGTAGTGGCGAATCCGCAAGCCGAGGGTCA
GCTGCAGTGGCTGAATCGTCGCGCAACGCGCTGCTGGCCAATGGTGTTGAGCTGCGTGAC
AACCAACTGGTTGTTCCATCCGAAGGCCTGTACCTGATTTATTCTCAAGTGCTGTTCAAAGGTC
AGGGTTGCCCCGAGCACGCACGTGTTGCTGACCCATACCATTAGCCGCATCGCAGTCAGCTAC
CAGACCAAGGTCAACCTGTTGAGCGCGATCAAGTCCCCGTGTCAACGTGAAACGCCTGAGGG
CGCTGAGGCCAAGCCGTGGTATGAGCCGATCTACCTGGGTGGCGTGTTCAGCTGGAGAAA
GGTGACCGTCTGAGCGCGGAAATCAACCGCCCGGATTATTTAGATTTTGCCGAGTCTGGTCA
GGTGTACTTCGGCATTATTGCACTGTAATAA

SEQ ID NO: 119 (amino acid sequence of DBv1-T7AC – TNF α)

MPLVPERNKERKEAELQAQTAEQH HHHHHHSGVDVADVRSSSRTPSDKPVAVHVVANPQAEQQL
QWLNRRANALLANGVELRDNQLVVPSEGLYLIYSQVLFKGQGCPSTHVLLTHTISRIAVSYQTKVN
LLSAIKSPCQRETPEGAEAKPWYEPIYLGGVFQLEKGDRLSAEINRPDYLDFAESGQVYFGIIAL

22/27

Figure 9 (continued)

SEQ ID NO: 120 (nucleic acid sequence of DBv1-T7AC – TNF α)

ATGCCCTTGGTCCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGC
TGAGCAACACCATCACCATCACCATGGCAGCGGCGTGATGTGGCGGATGTCCGTTCCAGCA
GCCGTACGCCGAGCGATAAACCTGTCGCGCACGTAGTGGCGAATCCGCAAGCCGAGGGTCA
GCTGCAGTGGCTGAATCGTCGCGCAACGCGCTGCTGGCCAATGGTGTTGAGCTGCGTGAC
AACCAACTGGTTGTTCCATCCGAAGGCCTGTACCTGATTTATTCTCAAGTGCTGTTCAAAGGTC
AGGGTTGCCCCGAGCACGCACGTGTTGCTGACCCATACCATTAGCCGCATCGCAGTCAGCTAC
CAGACCAAGGTCAACCTGTTGAGCGCGATCAAGTCCCCGTGTCAACGTGAAACGCCTGAGGG
CGCTGAGGCCAAGCCGTGGTATGAGCCGATCTACCTGGGTGGCGTGTTTCAGCTGGAGAAA
GGTGACCGTCTGAGCGCGGAAATCAACCGCCCGGATTATTTAGATTTTGCCGAGTCTGGTCA
GGTGTACTTCGGCATTATTGCACTGTAATAA

SEQ ID NO: 121 (amino acid sequence of DBv2-T7AC – TNF α)

MPHSPERNKERKEAELQAQTAEQH HHHHHGSGVDVADVRSSSRTPSDKPVAVHVVANPQAEQQL
QWLNRRANALLANGVELRDNQLVVPSEGLYLIYSQVLFKQGQCPSTHVLLTHTISRIAVSYQTKVN
LLSAIKSPCQRETPEGAEAKPWYEPIYLGGVFQLEKGDRLSAEINRPDYLDFAESGQVYFGIAL

SEQ ID NO: 122 (nucleic acid sequence of DBv2-T7AC – TNF α)

ATGCCACACAGCCCGGAACGCAACAAAGAGCGAAAGGAAGCTGAGTTGCAAGCTCAAACCGC
TGAGCAACACCATCACCATCACCATGGCAGCGGCGTGATGTGGCGGATGTCCGTTCCAGCA
GCCGTACGCCGAGCGATAAACCTGTCGCGCACGTAGTGGCGAATCCGCAAGCCGAGGGTCA
GCTGCAGTGGCTGAATCGTCGCGCAACGCGCTGCTGGCCAATGGTGTTGAGCTGCGTGAC
AACCAACTGGTTGTTCCATCCGAAGGCCTGTACCTGATTTATTCTCAAGTGCTGTTCAAAGGTC
AGGGTTGCCCCGAGCACGCACGTGTTGCTGACCCATACCATTAGCCGCATCGCAGTCAGCTAC
CAGACCAAGGTCAACCTGTTGAGCGCGATCAAGTCCCCGTGTCAACGTGAAACGCCTGAGGG
CGCTGAGGCCAAGCCGTGGTATGAGCCGATCTACCTGGGTGGCGTGTTTCAGCTGGAGAAA
GGTGACCGTCTGAGCGCGGAAATCAACCGCCCGGATTATTTAGATTTTGCCGAGTCTGGTCA
GGTGTACTTCGGCATTATTGCACTGTAATAA

SEQ ID NO: 123 (amino acid sequence of LED-PERNKERKE – hFGF-2)

MLEDPERNKERKEHHHHHHGSGVDVADAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGG
FFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGVSANRYLAMKEDGRLLASKSVTDECEFF
ERLESNNYNTYRSRKYTSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS

23/27

Figure 9 (continued)

SEQ ID NO: 124 (nucleic acid sequence of LED-PERNKERKE – hFGF-2)

ATGCTGGAGGATCCGGAACGCAACAAAGAGCGAAAGGAACACCATCACCATCACCATGGCAG
CGGCGTGGATGTGGCGGATGCCGCTGGTTCGATTACTACCCTGCCTGCTTTACCTGAAGATG
GTGGTTCTGGTGCGTTCCCGCCGGGTCACTTCAAAGACCCAAAACGTTTGTAAGTAAAAACG
GTGGCTTTTTTCTGCGCATCCATCCGGACGGCCGCGTGGATGGTGTCCGTGAAAAGTCCGAC
CCGCACATTAAGCTGCAACTGCAGGCCGAGGAGCGTGGTGTGTTAGCATCAAAGGCGTGAG
CGCAAATCGTTACCTGGCGATGAAAGAGGATGGCCGTCTGCTGGCGAGCAAGAGCGTTACCG
ACGAGTGCTTCTTCTTTGAACGCCTGGAGAGCAATAATTACAACACCTACCGTAGCCGCAAGT
ATACCTCTTGGTATGTGGCGCTGAAGCGTACGGGCCAGTATAAATTGGGTAGCAAAACGGGT
CCGGGCCAAAAGGCAATCCTGTTCTGCCGATGAGCGCGAAATCCTAA

SEQ ID NO: 125 (amino acid sequence of PLV-PERNKERKE – hFGF-2)

MPLVPERNKERKEHHHHHHGSGVDVADAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNNG
FFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVSISIKGVSANRYLAMKEDGRLLASKSVTDECF
ERLESNNYNTYRSRKYTSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS

SEQ ID NO: 126 (nucleic acid sequence of PLV-PERNKERKE – hFGF-2)

ATGCCCTTGGTCCCGGAACGCAACAAAGAGCGAAAGGAACACCATCACCATCACCATGGCAG
CGGCGTGGATGTGGCGGATGCCGCTGGTTCGATTACTACCCTGCCTGCTTTACCTGAAGATG
GTGGTTCTGGTGCGTTCCCGCCGGGTCACTTCAAAGACCCAAAACGTTTGTAAGTAAAAACG
GTGGCTTTTTTCTGCGCATCCATCCGGACGGCCGCGTGGATGGTGTCCGTGAAAAGTCCGAC
CCGCACATTAAGCTGCAACTGCAGGCCGAGGAGCGTGGTGTGTTAGCATCAAAGGCGTGAG
CGCAAATCGTTACCTGGCGATGAAAGAGGATGGCCGTCTGCTGGCGAGCAAGAGCGTTACCG
ACGAGTGCTTCTTCTTTGAACGCCTGGAGAGCAATAATTACAACACCTACCGTAGCCGCAAGT
ATACCTCTTGGTATGTGGCGCTGAAGCGTACGGGCCAGTATAAATTGGGTAGCAAAACGGGT
CCGGGCCAAAAGGCAATCCTGTTCTGCCGATGAGCGCGAAATCCTAA

SEQ ID NO: 127 (amino acid sequence of PHS-PERNKERKE – hFGF-2)

MPHSPERNKERKEHHHHHHGSGVDVADAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNNG
FFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVSISIKGVSANRYLAMKEDGRLLASKSVTDECF
ERLESNNYNTYRSRKYTSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS

24/27

Figure 9 (continued)

SEQ ID NO: 128 (nucleic acid sequence of PHS-PERNKERKE – hFGF-2)

ATGCCACACAGCCCGGAACGCAACAAAGAGCGAAAGGAACACCATCACCATCACCATGGCAG
CGGCGTGGATGTGGCGGATGCCGCTGGTTCGATTACTACCCTGCCTGCTTTACCTGAAGATG
GTGGTTCTGGTGCGTTCCCGCCGGGTCACTTCAAAGACCCAAAACGTTTGACTGTAAAAACG
GTGGCTTTTTTCTGCGCATCCATCCGGACGGCCGCGTGGATGGTGTCCGTGAAAAGTCCGAC
CCGCACATTAAGCTGCAACTGCAGGCCGAGGAGCGTGGTGTGTTAGCATCAAAGGCGTGAG
CGCAAATCGTTACCTGGCGATGAAAAGAGGATGGCCGTCTGCTGGCGAGCAAGAGCGTTACCG
ACGAGTGCTTCTTCTTTGAACGCCTGGAGAGCAATAATTACAACACCTACCGTAGCCGCAAGT
ATACCTCTTGGTATGTGGCGCTGAAGCGTACGGGCCAGTATAAATTGGGTAGCAAAACGGGT
CCGGGCCAAAAGGCAATCCTGTTCTGCCGATGAGCGCGAAATCCTAA

SEQ ID NO: 129 (amino acid sequence of LED-PERNKERKE – PTH)

MLEDPERNKERKEHHHHHHGSGVDVADSVSEIQLMHNLGKHLNSMERVEWLRKKLQDVHNFVA
LGAPLAPRDAGSQRPRKKEDNVLVESHEKSLGEADKADVNVLTKAKSQ

SEQ ID NO: 130 (nucleic acid sequence of LED-PERNKERKE – PTH)

ATGCTAGAAGATCCCGAAAGGAATAAAGAAAGGAAAGAACACCATCACCATCACCATGGCAGC
GGCGTGGATGTGGCGGATAGCGTTAGCGAAATTCAGCTGATGCATAATCTGGGCAAACATCT
GAATAGCATGGAACGTGTTGAATGGCTGCGTAAAAAACTGCAGGATGTGCATAATTTTGTTC
ACTGGGTGCACCGCTGGCACCGCGTGATGCAGGTAGTCAGCGTCCTCGTAAAAAAGAAGATA
ACGTTCTGGTTGAAAGCCACGAAAAAAGCCTGGGTGAAGCAGATAAAGCAGATGTTAATGTTC
TGACCAAAGCCAAAAGCCAGTAATAA

SEQ ID NO: 131 (amino acid sequence of PLV-PERNKERKE – PTH)

MPLVPERNKERKEHHHHHHGSGVDVADSVSEIQLMHNLGKHLNSMERVEWLRKKLQDVHNFVAL
GAPLAPRDAGSQRPRKKEDNVLVESHEKSLGEADKADVNVLTKAKSQ

SEQ ID NO: 132 (nucleic acid sequence of PLV-PERNKERKE – PTH)

ATGCCCTTGGTCCCCGAAAGGAATAAAGAAAGGAAAGAACACCATCACCATCACCATGGCAG
CGGCGTGGATGTGGCGGATAGCGTTAGCGAAATTCAGCTGATGCATAATCTGGGCAAACATC
TGAATAGCATGGAACGTGTTGAATGGCTGCGTAAAAAACTGCAGGATGTGCATAATTTTGTTC
CACTGGGTGCACCGCTGGCACCGCGTGATGCAGGTAGTCAGCGTCCTCGTAAAAAAGAAGAT
AACGTTCTGGTTGAAAGCCACGAAAAAAGCCTGGGTGAAGCAGATAAAGCAGATGTTAATGTT
CTGACCAAAGCCAAAAGCCAGTAATAA

25/27

Figure 9 (continued)

SEQ ID NO: 133 (amino acid sequence of PHS-PERNKERKE – PTH)

MPHSPERNKERKEHHHHHHHSGVDVADSVSEIQLMHNLGKHLNSMERVEWLRKKLQDVHNFVA
LGAPLAPRDAGSQRPRKKEDNVLVESHEKSLGEADKADVNVLTKAKSQ

SEQ ID NO: 134 (nucleic acid sequence of PHS-PERNKERKE – PTH)

ATGCCACACAGCCCCGAAAGGAATAAAGAAAGGAAAGAACACCATCACCATGCGCAG
CGGCGTGATGTGGCGGATAGCGTTAGCGAAATTCAGCTGATGCATAATCTGGGCAAACATC
TGAATAGCATGGAACGTGTTGAATGGCTGCGTAAAAAACTGCAGGATGTGCATAATTTTGTG
CACTGGGTGCACCGCTGGCACCGCGTGATGCAGGTAGTCAGCGTCCTCGTAAAAAAGAAGAT
AACGTTCTGGTTGAAAGCCACGAAAAAAGCCTGGGTGAAGCAGATAAAGCAGATGTTAATGTT
CTGACCAAAGCCAAAAGCCAGTAATAA

SEQ ID NO: 135 (nucleic acid sequence of PERNKERKE – new)

CCC GAA AGG AAT AAA GAA AGG AAA GAA

SEQ ID NO: 136 (nucleic acid sequence of LED-PERNKERKE – new)

CTA GAA GAT CCC GAA AGG AAT AAA GAA AGG AAA GAA

SEQ ID NO: 137 (nucleic acid sequence of PLV-PERNKERKE – new)

CCC TTG GTC CCC GAA AGG AAT AAA GAA AGG AAA GAA

SEQ ID NO: 138 (nucleic acid sequence of PHS-PERNKERKE – new)

CCA CAC AGC CCC GAA AGG AAT AAA GAA AGG AAA GAA

SEQ ID NO: 139

LED

SEQ ID NO: 140 (6-His-tag, GSG linker, caspase 2 recognition and cleavage site)

HHHHHHHSGVDVAD

SEQ ID NO: 141 (nucleic acid sequence encoding SEQ ID NO: 107 - new)

CCC GAA AGG AAT AAA GAA AGG AAA GAA

SEQ ID NO: 142 (nucleic acid sequence encoding SEQ ID NO: 107 – alternative1)

CCA GAA AGA AAT AAA GAA AGA AAA GAA

26/27

Figure 9 (continued)

SEQ ID NO: 143 (nucleic acid sequence encoding SEQ ID NO: 107 – alternative 2)

CCA GAA CGA AAT AAA GAA AGA AAA GAA

SEQ ID NO: 144 (nucleic acid sequence encoding SEQ ID NO: 111 – new)

CCC TTG GTC CCC GAA AGG AAT AAA GAA AGG AAA GAA

SEQ ID NO: 145 (nucleic acid sequence encoding SEQ ID NO: 111 – alternative 1)

CCC TTG GTC CCA GAA AGA AAT AAA GAA AGA AAA GAA

SEQ ID NO: 146 (nucleic acid sequence encoding SEQ ID NO: 111 – alternative 2)

CCC TTG GTC CCA GAA CGA AAT AAA GAA AGA AAA GAA

SEQ ID NO: 147 (nucleic acid sequence encoding SEQ ID NO: 113 – new)

CCA CAC AGC CCC GAA AGG AAT AAA GAA AGG AAA GAA

SEQ ID NO: 148 (nucleic acid sequence encoding SEQ ID NO: 113 – alternative 1)

CCA CAC AGC CCA GAA AGA AAT AAA GAA AGA AAA GAA

SEQ ID NO: 149 (nucleic acid sequence encoding SEQ ID NO: 113 – alternative 2)

CCA CAC AGC CCA GAA CGA AAT AAA GAA AGA AAA GAA

SEQ ID NO: 150

PLVPERNKERKEHHHHHHGSGVDVAD

SEQ ID NO: 151 (nucleic acid sequence encoding SEQ ID NO: 150)

CCC TTG GTC CCG GAA CGC AAC AAA GAG CGA AAG GAA CAC CAT CAC CAT CAC CAT
GGC AGC GGC GTG GAT GTG GCG GAT

SEQ ID NO: 152 (nucleic acid sequence encoding SEQ ID NO: 150 – new)

CCC TTG GTC CCC GAA AGG AAT AAA GAA AGG AAA GAA CAC CAT CAC CAT CAC CAT
GGC AGC GGC GTG GAT GTG GCG GAT

SEQ ID NO: 153 (nucleic acid sequence encoding SEQ ID NO: 150 – alternative 1)

CCC TTG GTC CCA GAA AGA AAT AAA GAA AGA AAA GAA CAC CAT CAC CAT CAC CAT
GGC AGC GGC GTG GAT GTG GCG GAT

27/27

Figure 9 (continued)

SEQ ID NO: 154 (nucleic acid sequence encoding SEQ ID NO: 150 – alternative 2)

CCC TTG GTC CCA GAA CGA AAT AAA GAA AGA AAA GAA CAC CAT CAC CAT CAC CAT
GGC AGC GGC GTG GAT GTG GCG GAT

SEQ ID NO: 155

PHSPERNKERKEHHHHHHGSGVDVAD

SEQ ID NO: 156 (nucleic acid sequence encoding SEQ ID NO: 155)

CCA CAC AGC CCG GAA CGC AAC AAA GAG CGA AAG GAA CAC CAT CAC CAT CAC CAT
GGC AGC GGC GTG GAT GTG GCG GAT

SEQ ID NO: 157 (nucleic acid sequence encoding SEQ ID NO: 155 – new)

CCA CAC AGC CCC GAA AGG AAT AAA GAA AGG AAA GAA CAC CAT CAC CAT CAC CAT
GGC AGC GGC GTG GAT GTG GCG GAT

SEQ ID NO: 158 (nucleic acid sequence encoding SEQ ID NO: 155 – alternative 1)

CCA CAC AGC CCA GAA AGA AAT AAA GAA AGA AAA GAA CAC CAT CAC CAT CAC CAT
GGC AGC GGC GTG GAT GTG GCG GAT

SEQ ID NO: 159 (nucleic acid sequence encoding SEQ ID NO: 155 – alternative 2)

CCA CAC AGC CCA GAA CGA AAT AAA GAA AGA AAA GAA CAC CAT CAC CAT CAC CAT
GGC AGC GGC GTG GAT GTG GCG GAT

SEQ ID NO: 160

PERNKERKEHHHHHHGSGVDVAD