

Fig. 1: Polynucleotide sequences

Fig. 1 A shows the nucleotide sequence of the coding region of the ssn6-like gene of *P. Pastoris* (SEQ ID. NO: 1).

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ATGAACGAACCTTCACAGCCTCCGCCAGTGACACTGGAAGTGAGGCATGATCCCGTACCAACGTCTCAAGCTGACTCCCAGCAACGGAAAG
TGGTATATGATAAACAACTCGAGTTTCGCAAGATAGCTGTCTCCACTTGCGTAGCGCTCGGATCCATGGCTCACGAAGTCCACTTGTACCA
GCTGGCAATTGATTGCTTCGATTTTGCCCTCCAAAATGATCCATTCAACGAGAAGGCTCTTTGTGGACTCGCAGCTGCATTGAGGGCTATG
GATCTGGTCAAGGACCAACAGACGGTACCGCAGCGGCCCTGGATGTTATCAACGACCTTTTATCACGCTCATCAGAGCTTTACAAAGATC
CATCTATCTGGAGAGAAGCTGCCGAATGCTATCTACTCTTAAACAACACAACGAATGCCATGGAGGCCCTACAAAGATGTATTCAATTAAC
TCCCAACAACCTCTGCATTATGGTTACTTAAAGGACAAACATTGATGGCCGAGGTTCCAAACATGAGGCCGTGATGCACTGAACACAGCC
TTGGTGAAACTCCCCAATGACGTTGCAGACTATACAAAAGAAGAGATTGACGTGGCCCGTTCCACCCACTCAGAATTTGCCTCCGTTCTTG
CTGCGGAGGGCAACATCGAAGCTGCCAGGGATGAGTTGGAGGCCACTTTGGCTCTTCCGCTCCCTCTTCTTCCGCTTACAGAGTATTC
CTCTCTTTGGTGCGCCTCATTAGTGCTAATGAGCGCCTTGGAGATATGGCCAAGGCAGTGC GCGTCTGTGAGGAGGCATCTGGACTGTTA
GGATTGAGCCATGCATATATATATGCCACGCATACTTGTGCTACTACCGAACAGTCACGTATTTAACCCACAGTCTGCTTGTGCTCCTGC
TTCGGCAAGTTGTTAATTCGGAAGCAACGACTTTCTACCATGGTTTTTACTTGGTGAGGCTTATCAAATGCTGCGCCAACCAAGCGAGGC
CTACGAAGCATTCCAGTTGGCCTTGAAAAGGGCTCCAAACCACACAATTGTATGGCTTGCAAGTGGGAAACCTTTATGCCGAACCTGGGCCAG
CTGGCTGATGCCCTTAGCGCGTATATGTTTGTCAATCAACGTGAAACAGAACAAAGAGAGCAAGATTTTGCTCTCATTGCTTGGG
AGGGTCTTTCATCGGTGTACGAAAAGTGTGATGGTCAAGTTGGCTGACTCTATAGAGGCCTGTATGAAGTCAAGCAGCTATGCAAGCCAAGC
GGGTGATAGCTCTCGGGCAAATTTCTGAACTCGCGATTGGAACCTTTACGAAGAGTGGTATCTGGAGAGATTCCGCTTCTGATTACAGA
CCAAGCACATGTTGTCAATCTCCGTTATATTTACTGCGAGATCTTACTTCACTGAGTATATCTGAAAGAGAAAATTTGGCCAATGCTTCGT
TAGATGACATCGCATCCGCTCCAGAAATCAAGAGTAGCAGCAAGAAGCGAAGTACACTTCGAGACCAATGCCTCCCTACCCGCTCACTC
CGCAAATAACTATAACCTACCATCCGAAGATTACAGCCACAGCGACAGAACTTACCAGTTCACTCACTCCCTAACGTTCCATTAGCACAG
CAACAGCGTGTGCATGCTCCGGCAAACAAGAACTTGTCCCAAGCGCGGATCAGAGATTCTCAATTGCAACCCATCCTCCTGTTGCCCCC
CCACAAATTTCCCTCGTCTGCTTACCACAGTTACAACAACAACAGCAACAACAGCAGCAACAGTTTCAACCACAAAACCTATCAGCACT
ATGCGCCTTACCAATGTACCCACCTTCCCAACAATCCCATTCCCTGA

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Fig. 1 B shows the nucleotide sequence of the LLP promoter of *P. Pastoris*, 605 bp 3' from the ATG start codon of LLP (SEQ ID NO: 2)

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ACAAAATGGCCAAGCTGGGAAACGGGATTTGGTGGAACCTTTATTATTCTTTCTACGATCCAAGCATTATGTTGTGGAACAAAGCGAATACT
CTTATTAGCTGGTAATTGAGCGAGTTGAAAAAATCAAGTCTATTGGAGGGTATGGTCAGAGTACTGATAGAGATCCCTGTTAAGATAATCG
ATCTTTTTCAAATATCCAATTTCAATCCATCTTGCCATCGGGTCTTGGCTTCTTACATCAATAATTAAGAACTACTTACTCTATTAGTGCCA
AAAATGGTAAACCGTATTCAAATTGCTGCAAGCATATGCTTAAAGGATCGCGTTGCGAGCTTCTTTTGAGATTTCGAAGCTTGATTTTAT
GCTCTTGTGGGAAGAAAAGCAACCCACTGAATTCAGATTTGTTGTGTTTTCATGCATGGACGACATACTTTGAGTAATACCGTTACTGAG
ATTTTACCGAATTTCGATTGCGTTGAGGCGTGAAGTTTCTAATGCTGTGCCATATGGTTAAGTTGCGTTTCAAGATGGTCCACAAGTATT
TTTGTATTTAAGCAGTGTCAATTCAAGCCTAACTGCTCATAAAAACCTACACGGTTTGCT

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Fig. 1 C shows the nucleotide sequence of the signal sequence of the LLP protein of *P. Pastoris* (SEQ ID NO: 3). Nucleotide at position 45, is underlined.

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ATGTTTGAGAAGAGTAAATTTGTGGTTTCGTTTCTGCTTTTACTGCAGCTATTTTGTGTCCTTGGTGACATGGA

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Fig. 1 H shows the nucleotide sequence of the Kozak start sequence (SEQ ID NO: 11).

GATATCAAACGATG

Fig. 1 I shows the nucleotide sequence of the LLP promoter of *P. Pastoris*, 1000 bp 3' from the ATG start codon of LLP (SEQ ID NO: 12). The underlined sequence part is identical to SEQ ID NO: 2, Fig. 1 B.

AGATAGATAACTACAATTTATGAGGCCCTATCGTGAAATAGCAACGTAGAATAATTTCTGGCAGAGTAGGGTGTGGGGTCAGTAGAAGTA
ATATCCAGAAGCTGATGCAGGTTATTGATATTACCACAAGATTCTAGCTTCAAATGCACAGTTCGGATTGGTGATCCGAAGATGCTAAAA
AAAGACATCAAACCTCAAACCGTATCGCTTTTTACGGCGTATATTGTTGCACGAAAGCGAACTATAATCATGCAGAAAACATCGCGCATG
ACGTAATGTATCGCTTTAGGGAAGGTAAGTCTGCGTATTTCAAACGCATACCTTAGATCGTGCCAGCAACCCACATAATTTTTCTTCAAGGT
CTGGACATACTGGTTGTGTCAAAATAGGGCAACAAAATGGCCAAGCTGGGAACCGGGATTGGTGGAACTTTATTATTCTTTCTACGATCC
AAGCATTATGTTGTGGAACAAAGCGAATACTCTTATTAGCTGGTAATTGAGCGAGTTGAAAAAATCAAGTCTATTGGAGGGTATGGTCAGA
GTACTGATAGAGATCCCTGTTAAGATAATCGATCTTTTTCAAATATCCAATTTTCATTCATCTTGCCATCGGGTCTTGGCTCTTACATCA
ATAATTAAGACTACTTACTCTATTAGTGCCAAAAATGGTAAACCGTATTCAAATTTGCTGCAAGCATATGCTTAAAGAGATCGCGTTGCGAG
CTTCTTTTGAGATTGCGAAGCTTGATTTTATGCTCTTTGGGGAAGAAAGCAACCCATGAATTCAGAGTTTGTGTGTTTTCATGTCATGG
ACGACATACTTTGAGTAATACCGTTACTGAGATTTTACCGAATTCCGATTCGCTTGAGGCGTGAAAGTTTCTTAATGCTGTGCCATATGGTT
AAGTTGCGTTTTCAAGATGGTCCACAAGTATTTTTGTATTTAAGCAGTGTCAAATCAAGCCTAACTGCTCATAAAAACTACACGGTTTGCT

Fig. 1 J shows the amino acid sequence of the SSN6-like protein of *P. Pastoris* (SEQ ID NO: 13).

MNEPSQPPPVTLVRHDPVPTSQADSQQRKVVDYKQLEFRKIAVSTWLAALGSMHAHEVHLYQLAIDSDFDALQNDPFNEKALCGLAAALRAM
DLVKDQTDGTAALDVINDLLSRSELYKDPSIWREAAECYLLNNTTNAMEALQRCIQLTPNNSALWLLKGQTLMAAGSKHEAVDALNTA
LVKLPNDVADYTKEEIDVARSTHSEFASVLAAEGNIEAARDELEATLALPPSSSRFTYSSLWCALTSANERLGDMAKAVRVCEEASGLL
GFEPCTIYICHAYLLLLPNSHVFNPPQSACVLLRQVNVNESNDFLPWFLLGEAYQMLRQPSEAYEAFQLALKRAPNHTIVWLAVGNLYAELGQ
LADALSAYMFVIKRETEQEQUESKILLSFAWEGLSSVYEKCHGQLADSIACMKSSSYASQAGDSSRANFLNSRLRTRRRVVSGETPLSDYR
PTSCQSPLYLLRDLTDSISERENLANASLDDIASAPEIKSSSKRTDSRMPVPSHSANNYNLSPESDQQRQLPVHSLPNVPLAQ
QORVHAPANKNLLSPADORSISERTSIATHPPVAPPTNFPSSCFTVTVTTTTATTAATVSTTKLSALCAFTNVPTFPTIP

Fig. 1 K shows the nucleotide sequence of the MFalpha pre-pro signal sequence without (A) and with the EAEA repeat (B) as used in the examples of this application.

(A): SEQ ID NO: 14

ATGCGTTTCCCATCGATTTTACAGCTGTTCTGTTGCAGCTTCATCTGCTTAGCTGCACCTGTAAACAACTACAGAGGACGAAACGG
CCCAGATCCCAGCTGAGGCAGTCATTGGTTATTCGATTTGGAAGGTGATTTGATGTCGCTGTGTTACCATTCAGTAATTCCACAAATAA
CGGTTTGCTGTTCAATTAACACCACTATAGCAAGCATCGCTGCAAAAGAGGAAGGTGTTTCCCTAGAAAAGAGG

(B): SEQ ID NO: 21

ATGAGATTCCCATCTATTTTCACGCGTGTCTTGTTCGCTGCCTCCTCTGCATTGGCTGCCCTGTTAACACTACCACTGAAGACGAGACTG
CTCAAATTCAGCTGAAGCAGTTATCGGTTACTCTGACCTTGAGGGTGATTTTCGACGTCGCTGTTTTGCCTTTCTCTAACTCCACTAACAA
CGGTTTGTTGTTCAATTAACACCACTATCGCTTCCATTGCTGCTAAGGAAGAGGGGTGTCTCTCTCGAGAAGAGAGAGGCCGAAGCT

Fig. 1 L shows the codon optimized DNA sequence of encoding a single chain antibody fragment DLX521 (SEQ ID NO: 15).

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GCCAGTCCGTTTTGACTCAACCCCTTCCGTATCCGCAGCTCCAGGCCAAAAAGTAACGATCTCTTGTTGAGTTCCACTAGTAACATAG
GTGACAATTATGTGTCATGGTACCAACAGTTGCCCGAACTGCCCTCACTGCTGATCTACGACAATACCAAGAGGCCGTCAGGTATCCC
AGACAGATTTTCCGGTTCTAAGAGCGGCACATCGGCTACACTAGGTATCACGGGACTTCAAACCGGCGACGAGGCAGATTACTACTGCGCA
ACTTGGGATAATGATAAAGTGGGGAGTTGTTTTTGGAGGTGGTACTAAACTCGAAGTCTTGGGTGGTGGAGGAGGATCAGGAGGAGGAGGTT
CTGGAGGAGGTGGTTCATCTGGCGGTGGATCTGAAGTGCAGCTTGTGGAGAGTGGTGGTGGTTGGTTCAACCAGGAGGTAGCTTGAGACT
GTCATGTGCCCGCAGCGTTTTACTTTCTCCTCTATGCAATGTCTTGGGTGAGACAAGCACCTGGTAAGGGTTTGAATGGGTATCAGCT
ATTTCCGGTAGTGGTGGTTCGACATATTATGTGACTCCGTTAAAGGTCGTTTTACTATTTCTAGAGACAATTCAAAAATACCTTATATC
TTCAAATGAACCTCCCTTAGAGCTGAGGATACTGCTGTTTACTACTGTGCTCGTGATGCTTGGTTGGATGTGTTGTCTGACGGCTTTGACTA
CTGGGGACAAGGTACTTTGGTCACAGTGAGCAGCTGA
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Fig. 1 M shows the coding region of the *llp*-gene including the signal sequence of *P. Pastoris* (SEQ ID NO: 16)

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ATGTTTGAGAAGAGTAAATTTGTGGTTTCGTTTCTGCTTTTACTGCAGCTATTTTGTGTCCTTGGTGACATGGACAAGAAAGTGGTAACG
GTACCACTAGTGACACTGCCTACGCATGCGACATCGGTGCAACACCTTTTGACGGATTCAATGCTACTATTTATCAGTACCAGGCAAGTGA
TGACAATTCAATACAGGACCCGGTTTTATGAGCACTGGGTACTTGAACGTAAACAGTTGCATAGTACAACGGAGTGACTAATCCGGGG
TTCAACATCTTCACTGCAGGCGTTGCCACCACAACACTTTATGGGATACCAAACGTCAACTACCAAAATATGCTTTTGAATTGAAAGGCT
ATTTGAGAGCTGACGCTCTGGAAATTATGGACTATCACTAAGGAACATCGATGATAGTGCAGATTCTTTTCTTTGGGAGGGAGACTGCGTT
TGAATGTTGCAATGAAAATTTGATTCCTTGGACGAAGCCCAACTGATTACTCACTTTTTACCATTAAAGAAGGGGAAGCTTCAACAAAC
CCCGACTCTTATACGTACACTCAATACTTGGAGGCTGGGAGATACTATCCCGTAAGAACTTTCTTTGCCAACATAAGAACGCGTGCCGTGT
TCAACTTTACGATGACACTGCCAGACGGGAGTGAACAAACAGATTTTCAAACCTACATTTTCAATTTGGAGCTCTTAACCAACAACAATG
CCAAGCAGAAATAGTTACCAGGGAAAATTACACAACCACCACCGAACCATGGACTGGTACCTTTGAAGCCACGACCACGGTGATTCCAAGT
GGCACTGAGCCAGGTACCGTGATTGTCCAGACTCCTTATTCTACTATCGACTCCACATCTACTTGGACCGGTACTTTACCACTTTTACCA
CCGATGCTGATGGAAGCACCATCGCGTTGTGCCATCGTCGACTATTGATGATCACTTTGCGTCGACTGAAACTGTTTTGACAGACACTGC
TATTTCAACTACTGTTATTACCGTGACCAAGTTGTGGTACCAGTAAGTGACCAAGACTACAGCACTAACAGGGGTGACTCAGCGAACTCTC
ACAATCGATGATAGAATACTGTGCTGACGACTTACTGTCTTTGCCAAGTACGTTGCCACTATAAAAAACAGCAAGTGTAGCGGAAGTG
AGGTTGTGCAACAATCTACACTGCGAAACACAGCCAGGCGTTTTCTTATGTTTCATCCATCAACTGTTACAATCACAAGAGAGGTATGTGA
TGCCCCAACTTGCACGAGGCTACTATTGTGACTGGAGAAATCTGCAAACTACTGTTGTGGACTCTGTTCTACAACGTTGTTCCAAAG
TATGTTCCGGTGGAGACGCATGAACCAACATTTGAATTGAGTACTCTTTAA
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Fig. 1 N shows the codon-optimized nucleotide sequence of the human Growth Hormone (hGH) as used in the examples of this application (SEQ ID NO: 17).

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TTTCCAACCATCCCCTGTCCAGATTGTTTGACAATGCCATGTTGAGAGCCATCGTTTGATCAGCTCGCATTTGATACGTACCAGGAAT
TTGAGGAGGCTTACATTCCAAAAGAGCAAAAGTATAGCTTTCTACAGAATCCTCAGACTTCGCTGTGTTTCTCTGAATCTATCCCTACACC
CAGTAATAGAGAAGAGACTCAACAAAAGTCTAACTTGAATTTGTTGAGAATATCACTGCTGTTGATTCAATCTTGGCTTGAACCTGTGCAA
TTCTTGAGATCTGCTTTTGTAATTCATTGTGTATGGAGCTTCCGACTCAAATGTATACGACCTCTTAAAGACCTTGAAGAGGGCATCC
AACTTTTGATGGGACGACTTGAAGATGGATCCCCAGGACCGGTCAAATCTTCAAGCAAACCTACAGCAAGTTGACACAACTCCACAA
TGATGATGCTTATTGAAAACTACGGATTGCTATATTGTTTTCGTAAAGATATGGACAAAGTAGAGACTTTTCTGAGAATTGTTCAATGT
AGAAGTGTGAGGGTTTCATGCGGTTCTAA
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Fig. 1 O shows the codon optimized nucleotide sequence of the human serum albumin (HSA) incl. the HSA signal sequence as used in the examples of this application (SEQ ID NO: 18).

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ATGAAATGGGTGACTTTTATCTCCCTACTGTTCTTTTCTCCTCCGCATACTCAAGAGGTGTTTTAGAAAGAGATGCCATAAGAGTGAGG
TTGCACACAGATTTAAGGATTTGGGAGAAGAGAATTTCAAGGCTCTGGTGTGATAGCTTTGCTCAATACTTACAACAGTGTCCATTTGA
AGATCATGTCAAATTTGGTCAATGAAGTAACGGAGTTCGCTAAAACATGCGTCGCTGACGAATCAGCTGAAAATTTGTGATAAGTGGTTACAT
ACCTTGTTCGGTGACAAATTTGTGCACGGTTGCAACATTGCGAGAAACATATGGCGAAATGGCAGATTGTTGCGCTAAGCAAGAGCCTGAAA
GGAACGAGTGTCTTACAGCATAAGGATGATAATCCAAACCTACCTAGATTGGTCAGACCAGAAGTTGACGTTATGTGTACCGCTTTTCA
CGATAACGAAGAGACATTCTTGAAAAAGTACCTGTACGAAATCGCAAGCGTCATCCATACTTCTATGCCCCAGAGCTGTTGTTTTTCGCA
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AAAAGATATAAGGCCGCAATTTAC|GAATGCTGTCAAGCTGCTGATAAGGCTGCTTGCCTTCTCCCTAAACTGGATGAGTTGCGTGATGAAG
 GAAAAGCAAGTTCGGCCAAGCAAAGACTGAAGTGTGCTAGCTTACAAAAGTTTGGTGAACGTGCGTTCAAGGCTTGGGCTGTGGCAAGATT
 ATCTCAAAGATTTCTTAAGGCAGAAATCGCCGAAGTGTGCAAACTTGTAAACGACCTTACTAAAGTGCACACCGAGTGCTGTGATGGAGAT
 CTA CTGGAATGCGCAGACGACAGAGCTGACCTGGCTAAGTACATTTGTGAGAACCAAGATAGCATTCTTCCAATTAAGGAATGTTGTG
 AAAAACCTTGCTTGAGAAATCTCACTGTATCGTGAAAGTTGAAATGACGAGATGCCCGCGACCTTCCAAGTTTAGCAGCTGACTTTGT
 TGAATCTAAAGACGTGTGTA AAAACTGTACGAGGCTAAGGACGCTTTTGGTATGTTTGTGACGAGTATGCTGTAGACATCCAGAT
 TACTCGGTGTTCTGCTGTGTTGAGCTTGCCAAAGACTTACGAGACAACTTTGAGAAATGTTGTGCGCAGACGACCCCTACGAGTGTATTG
 CAAAAGTGTTTGATGAATTCAAGCCATTGGTTGAGGAACCACAGAATCTGATTAACAAAACCTGTGAATTGTTTGAACAACCTAGGTGAGTA
 TAAGTTCAGAACGCTCTGCTGGTTCGTTATACTAAAAAGGTTCTCAGGTTTCAACTCTACATTGGTAGAGGTGAGCAGAAATTTGGGA
 AAGGTTGGTTCAAATGTTGTAACATCCGAGGCTAAAAGGATGCCGTGTGCTGAGGATTACTTGTCTGTCGATTGAATCAGTTATGTG
 TGTTACACGAAAAGACACCAGTCTCTGATCGTGTGACGAAATGCTGCACAGAGTCACTCGTTAATCGTAGACCTTGTTTCTCCGCTTTGGA
 GGTGGACGAGACTTACGTACCTAAAGAGTTCAATGCTGAACTTTTACTTTTACGCTGACATTTGACTCTTTCCGAAAAAGAGAGGGCAA
 ATCAAAAAGCAAACCTGCTTTGGTTGAATTAGTTAAGCATAAGCCAAAAGCTACTAAGGAGCAACTTAAGCAGTAATGGACGATTTCTGCTG
 CATTCTGTTGAAAAGTGCTGTAAGGCCGACGATAAAGAGACATGTTTTGCAGAGGAAGGTAAAAAGTTGGTGCCTGCCAGGCCGCACT
 AGGTTTGTA

Fig. 1 P shows the codon-optimized nucleotide sequence of the penicillin V amidase (PVA) as used in the examples of this application (SEQ ID NO: 19).

GCTAGAACTACCGACCAATCATTGACTTAGGATACGCTAGATACAGAGGTTCAATCAACGACACTACCTCTGTCACTTCATACCTGGGTA
TCAGATTTGCTGAACCTCCAGTTGAGGACTTGAGATGGAGAGCCCCACAACCTGCTAAGAGACTTCTGGTGTTCAAACGCCACTATTGT
TCCTCCATTGTGTCCACAAGGTTTCATCAACATCTTGATTCCAGGAGGTATCCACCTCCAGACTTGACCAACGTTTCTGAAGAGTGCTTG
TTCTTGTCGGTTTTTGACCTAGAAAAGTTGCCACCTAAGCGTAAGGAATTGCCAGTGATTGTTGGATTATGGTGGAGGATACATTCGTCT
CCTCTGCAGCTACTTTCGACGGAACTAACTTGGTTAGAGAGTCTAACGACTCTGTCAATTGTGGTGACTATCCAGTACAGACTGGGAATTT
CGGATTCATGGCTGGTAAGAAGTTGAAGGATAACGGAGACTTGAATGCTGGATTGCTTGACCAAGAGTTGGCTTTGAAGTGGGTTCAACAG
CACATTAACAAGTTCCGGTGGTGACCTTAAGCAAGTGACATTTGGGTCAATCAGCTGGAGGTGGTCTGTGTTGCAACAGGTCATTGCTC
ACAACGGGACAAACTACCCACCAATTGTTCAAGTGCTATGTCTTCTCTACCTACCTTCTCTCAACACCAATTCGACGACTCCTGTTCC
AGAAGGTATCTACTCTACCGTTGTCTCAACTGCTGGTTGTGCTGATGCTACTGATCCTCTTACTTGCTTGAGAGCTTCTAACACCTCCATC
TTACAAGCTGCTAACGACAAGGCATGTAGATCCGCATTCTACGGTACTTCCGTTGTTGTTCTGTTGTTGATGGTGAGTTCATACCCAAA
GACCATCTGAAGCTCTTAGACAAGAGCTGTCAACGGTAACGCTTTGTTGGCTATCTCTAATACCAACGAAGGTGACATCTTCGTTGACCA
ATCTAAGGCTGACACTGTTACTGCTGCTCAGTTCGTTAGAGACTTGATACCCTAGATTGAACGGTGCTCAAGTTGCTGAGGTTGTTGCTGTG
TACTCTGGTTTAGGTGCTCCAATCCAACAGGCTGACTCTATCATGGGAGATACTCTGTTCCAATGTCCAACCAATTTGGTTCTCTCAAGCCT
TCAGACAATCTTCAAGGGTGAATACGCTGTTCTTCTGCAATCCACGGTTCTGACATTTCCCAAGTACTTCCCATTCTTTGCTCTAGATT
CTTCGACGACTCTGCTTCACTTCTTCTTCACTCAGTCTTCTTGAGACTTCGTTGCTGTAAGTCTGATCTGATCTAACGCAAGGTTTGAC
GACGGTAAGTCTGACTCTAGATGGAGACAGATAACACTCTTGCTCAAAGTTCGAGATGGTGTTCAACCGTACTGATGGTGAAGAGTTGGACA
TTAGACCAGCTTCTACTGGTGCTGGTTTGTGGAGAGATGTGCATTCTGGGAATCTGTCTCCGAATTGACTGCTCAATAA

Fig. 1 Q shows the nucleotide sequence (SEQ ID NO: 20) of the vector pGAPk used for generating the SSS1 yeast cell line (plasmid without a GOI and with a Geneticin resistance marker). The hybridization site of the primer oligo2398 is labeled in grey and underlined, and of oligo2395 is labeled in grey and double-underlined (reverse-complement sequence)

AGATCCAATTCCCGCTTTGACTGCCTGAAATCTCCATCGCCTACAATGATGACATTTGGATTGGTTGACTCATGTTGGTATTGTGAAATA
GACGCAGATCGGGAACACTGAAAAATACACAGTTATTATTACAGATCTTTTTGTAGAAATGTCTTGGTGTCCTCGTCCAATCAGGTAGCCA
TCTCTGAAATATCTGGCTCCGTGCAACTCCGAACGACCTGCTGGCAACGTAATAATCTCCGGGGTAAAACTTAAATGTGGAGTAATGGAA
CCAGAAACGTCTCTTCCCTTCTCTCTCTCCACCGCCGTACCCTCCATAGGAAATTTACTCTGCTGGAGAGCTTCTTCTACGGCCCC
CTTGACGAATGCTCTTCCAGCATTACGTTGCGGGTAAACGGAGGTCGTGTACCCGACCTAGCAGCCCAGGGATGGAAAAAGTCCCGGCC
GTCGCTGGCAATAATAGCGGGCGGACGCATGTCATGAGATTATTGGAAACCACCAGAATCGAATATAAAAGGCGAACACCTTTCCCAATTT
TGGTTTCTCTGACCCAAAGACTTTAAATTTAAATTTATTTGTCCTTATTTCAATCAATTGAACAACACTCAAAACACAGAATTTCACTAGTG
GCGCGCGCGGGCGCTCAAGAGGATGTCAGAATGCCATTTGCTGAGAGATGCAAGGCTTCATTTTGTACTTTTTTATTTGTAACCTATA
TAGTATAGGATTTTTTTGTCAATTTGTTTCTTCTCGTACGAGCTTGCTCTGATCAGCCTATCTCGCAGCAGATGAATATCTTGTTGGTAG
GGGTTTGGGAAAATCATTGAGATTTGATGTTTTCTTGGTATTTCCCACTCCTCTTCAGAGTACAGAAGATTAAAGTGAGACCTTCGTTTGT
GCGGATCCTTCAGTAATGTCTTGTTCTTTGTTGCACTGGTGAGCCATTTTGACTTCGTGAAAGTTTCTTTAGAATAGTTGTTTCCAGAG
GCCAAACATTCACCCGTAGTAAAGTGCAAGCGTAGGAAGACCAAGACTGGCATAAATCAGGTATAAGTGTGAGCACCTGGCAGGTGATCT
TCTGAAAGTTTCTACTAGCAGATAAGATCCAGTAGTCATGCATATGGCAACAATGTACCGGTGGATCTAAGAACCGCTCCTACTAACCTT
CGCATCTCGTTGGTCCAGTTTGTGTTATTCGATCAACGTGACAAGTTGTGCTATCCGCTAAGCATGCATACCCAAGGACGCTTGTGCAA
TTCCAAGTGAGGCAGTTTCCAACAATCTTTGTAATATTAGAGCACTCATTGTGTTGCGCTGAAAGTAAATGCGAACAAATTAAGAGATA
ATCTCGAAACCGCGACTTCAAACGCCAATATGATGTGCGGCACACATAAGCGTTCATATCCGCTGGGTGACTTTTCTCGCTTTAAAAAAT

ATCCGAAAAAATTTTCTAGAGTGTTGACACTTTATACTTCCGGCTCGTATAATACGACAAGGTGTAAGGAGGACTAAACCATGGGTAAGGA
 AAAGACTCACGTTTCGAGGCCGCGATTAAATTTCCAACATGGATGCTGATTATATGGGTATAAATGGGCTCGCGATAATGTCGGGCAATCA
 GGTGCGACAATCTATCGATTGTATGGGAAGCCGATGCGCCAGAGTTGTTTCTGAAACATGGCAAAGGTAGCGTTGCCAATGATGTTACAG
 ATGAGATGGTCAGACTAACTGGCTGACGGAATTTATGCCTCTTCCGACCATCAAGCATTTTATCCGTAATCCTGATGATGCATGGTTACT
 CACCACATCGCATCCCCGGCAAAACAGCATTCCAGGTATTAGAAGAATATCTGATTCAGGTGAAAATATTGTTGATGCGCTGGCAGTGTTT
 CTGCGCCGGTTGCATTTCGATTCTCTGTTTGAATTTGCCTTTTAAACAGCGATCGCGTATTTCTGCTCGCTCAGGCGCAATCACGAATGAATA
 ACGGTTTGGTTGATGCGAGTGATTTTGTATGACGAGCGTAATGGCTGGCCTGTTGAACAAGTCTGGAAGAAATGCATAAGCTTTTGCCATT
 CTCACCGGATTCAGTCGTCATCATGGTGATTTCTCACTTGATAACCTTATTTTACGAGGGGAAATTAATAGGTTGTATTGATGTTGGA
 CGAGTCGGAATCGCAGACCGATACCAGGATCTTGCCATCCTATGGAAGTGCCTCGGTGAGTTTCTCCTTCATTACAGAAACGGCTTTTTC
 AAAAAATATGGTATTGATAATCCTGATATGAATAAATTGCAGTTTCATTTGATGCTCGATGAGTTTTCTAACCTCTAGGACACCTTACGAT
 TATTTAGAGAGTATTTATTAGTTTTATTGTATGTATACGGATGTTTTATTATCTATTTATGCCCTTATATTCTGTAACATCCAAAAGTCC
 TATCTTATCAAGCCAGCAATCTATGTCGCGAACGTCAACTAAAAATAAGCTTTTTATGCTCTTCTCTTTTTTCCCTTCGGTATAATT
 ATACCTTGCATCCACAGATTCTCTGCCAAATTTTGCATAATCCTTTACAACATGGCTATATGGGAGCACTTAGCGCCCTCCAAAACCCAT
 ATTGCTACGCGATGTATAGGTGTTTTTCCACAATATTTTCTCTGTGCTCTCTTTTTTATTAAAGAGAAGCTCTATATCGGAGAAGCTTCTG
 TGGCGCTTATATTGGCCTTATCGTGGGACCACATTGCCTGAATTGGTTTGCCCGGAAGATTGGGGAACCTTGATCTGATTACCTTAGC
TGCAGGTACCACTGAGCGTCAGACCCGTAAGAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTCTGCGCTAATCTGCTGCTTGCAAA
 CAAAAAACCACCGTACCAGCGGTGGTTTGGTTGCCGATCAAGAGCTACCAACTCTTTTCCGAAGGTAACGGCTTCAGCAGAGCGCA
 GATACCAAACTACTGTTCTTCTAGTGTAGCCGTAGTTAGGCCACCACTTCAAGAAGTCTGTAGCACCCTACATACCTCGCTCTGCTAATC
 CTGTTACCAAGTGGCTGCTGCCAGTGGCGATAAGTCTGTCTTACCAGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTGG
 GCTGAACGGGGGGTTCGTGCACACAGCCAGCTTGAGCGAAGCAGCTACACCGAAGTACGATACCTACAGCGTGAGCTATGAGAAAGCGC
 CACGCTTCCCGAAGGAGAAAGGCGGACAGGTATCCGGTAAGCGGCAGGTCGGAACAGGAGAGCGCAGGAGGAGCTTCCAGGGGGAAAC
 GCCTGGTATCTTTATAGTCCGTGTCGGGTTTCCGCACCTCTGACTTGAGCGTCGATTTTGTGATGCTCGTCAGGGGGGCGGAGCCTATGGA
 AAAACGCCAGCAACGCGGCTTTTACGGTCTGCGCTTTTGTGCTGCTTCTGCTACATGTTCTTCTGCGGTACCC

Fig. 1 R shows the sequence of a pLLP vector containing a Geneticin resistance marker (pLLPk) corresponding to SEQ ID NO: 22.

AAATTTTGCATAATCCTTTACAACATGGCTATATGGGAGCACTTAGCGCCCTCCAAAACCCATATTGCTACGCGATGTATAGGTGTTTTT
 CCACAATATTTTCTCTGTGCTCTTTTTTATTAAAGAGAAGCTCTATATCGGAGAAGCTTCTGTGGCGTTATATTGGCCTTATCGTGGG
 ACCACATTGCCTGAATTGGTTTGCCCGGAAGATTGGGGAACCTTGATCTGATTACCTTAGCTGCAGGTACCACTGAGCGTCAGACCCG
 TAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTCTGCGCGTAATCTGCTGCTTGCAAAACAAAAAACCACCGTACCAGCGGTGGT
 TTGTTTGCCGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAACCTGGCTTCAGCAGAGCGCAGATACCAAACTACTGTTCTTCTAGTGTAG
 CCGTAGTTAGGCCACCACTTCAAGAAGTCTGTAGCACCCTACATACCTCGCTCTGCTAATCCTGTTACCAAGTGGCTGCTGCCAGTGGCG
 ATAAGTCGTGCTTACCAGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTGGGCTGAACGGGGGGTTCGTGCACACAGCC
 CAGCTTGGAGCGAACGACCTACACCGAAGTACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCGAAGGGAGAAAGGCGGAC
 AGGTATCCGGTAAGCGGAGGGTCGGAACAGGAGAGCGCAGAGGGAGCTTCCAGGGGGAACGCTGGTATCTTTATAGTCTGCTCGGT
 TTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGGCGGAGCCTATGAAAAACGCCAGCAACGCGGCTTTTTACG
 GTTCTGGCCTTTTGTGCGCTTTTGTCTCACATGTTCTTCTGCGGTACCCAGATCCAATCCCGCTTGTACTGCTGAAATCTCCATCG
 CCTACAATGATGACATTTGGATTTGGTTGACTCATGTTGGTATTGTGAAATAGACGCGATCGGGAACACTGAAAAATACACAGTTATTAT
 TCATTTAAATCACGCTCTTGAGTCATCAGGCTCTGACTGGGCGAGCTGCTGCAACTGGAAGTTCCTCAAGCCTCCACCAACAGCAGGTGT
 AGCCGAAAGTATTACGTCGTCAGAAATGAGGCCACAGTACATCTGTACCGTTTCTCAACCCCTTCAACGGTTTCTTTGCAAAATGGA
 GAAGCAAAATACCTGAAATGGTCAGCTTTCTTTGGAGTAGTAGTTCCGCTGCTCAACGTACTCTTCGTTTAAAGCCCTCCTAGGACAAAA
 TGGCCAAAGCTGGGAAACGGGATTTGGTGAACCTTTATTATTCTTCTACGATCAAGCATTATGTTGTGGAACAAAGCGAATACTCTTATT
 AGCTGGTAATTGAGCGAGTTGAAAAATCAAGTCTATTGGAGGTATGGTCAGAGTACTGATAGAGATCCCTGTTAAGATAATCGATCTTT
 TTCAAATATCCAATTTCTTCCATCTTGCCATCGGGTCTTGGCTTCTACATCAATAATTAAGTAACTACTTACTCTATTAGTGCCAAAAATG
 GTAAACCGTATTCAAATGTGCAAGCATATGCTTAAAGGATCGCGTTGCGAGCTTCTTTGAGATTGCAAGCTTGATTTTATGCTCTT
 GTGGGAAGAAAGCAACCCACTGAATTCAGATTGTTGTGTTTTCATGCATGGACGACATACTTTGAGTAATACCGTTACTGAGATTTTA
 CCGAATTCGATTGCGTTGAGGCGTGAAGTTTCTAATGCTGTGCCATATGGTTAAGTTGCGTTTCAAGATGGTCCACAAGTATTTTGTAT
 TTTAAGCAGTGTCATTCAAGCCTAAGTCTCATAAAACTACAGGTTTGTCTGATATCAAAACGATGCGTTTCCCATCGATTTTACAGC
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 GGTATTCCGATTGGAAGGTGATTTTCATGTCGCTGTTTACCATTAGTAAATCCACAAATAACGGTTTGTGTTTCTTAAACACCACTA
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 AGGCCAAAAAGTAACGATCTCTTGTTCAGGTTCCACTAGTAACATAGGTGACAATTATGTGTCATGGTACCAACAGATTGCCCGGAACCTGCC
 CCTCAACTGCTGATCTACGACAATACCAAGAGGCGTCAGGTATCCAGACAGATTTTCCGGTTCTAAGAGCGGCACATCGGCTACACTAG
 GTATCACGGGACTTCAACCGGCGACGAGGAGATTACTACTGCGCAACTTGGGATAATGATAAGTGGGGAGTTGTTTTGGAGGTGGTAC
 TAAACTCGAAGTCTTGGGTGGTGGAGGAGGATCAGGAGGAGGAGTTCTGGAGGAGGTGGTTCTGCGCGGTGGATCTGAAGTGCAGCTT
 GTGGAGAGTGGTGGTGGTTTGGTTCAACCAGGAGGTAGCTTGAGACTGTATGTGCGCCAGCGGTTTACTTTCTCTCTCTATGCAATGT
 CTTGGGTGAGACAAGCACCTGGTAAGGTTTGGAAATGGGTATCAGCTATTTCCGGTAGTGGTGGTTCGACATATTATGCTGACTCCGTTAA
 AGGTGCTTTTACTATTTCTAGAGACAATCCAAAAATACCTTATATCTTCAAATGAACTCCCTTAGAGCTGAGGATCTGCTGTTTACTAC
 GTGCTCGTGAATTTGGTTGGATGTTGTTGCTGACGGCTTTGACTACTGGGACAAGGTACTTTGGTCACAGTGAGCAGCTGATAAGGGC
 GGCCGAGCGAATTTCTTATGATTTTATTATTTAATTAAGTTATAAAAAAAATAAGTGATACAAATTTTAAAGTGACTCTTAG
 GTTTTAAACGAAATTTCTTATTCTTGAGTAACCTTTTCTGTAGGTGAGGTTGCTTCTCAGGTATAGCATGAGGTGCTCTTATTGACC
 ACACCTCTACCGCATGCCAGCAATGCCTGCAAAATCGCTCCCATTTTACCCAATTGTAGATATGCTAACTCCAGCAATGAGTTGATGA
 ATCTCGGTGTGATTTTATGCTCTCAGAGGACAAGGATCCTTCAGTAATGTCTTGTCTTTTGTGCGAGTGGTGAGCCATTTTACTTCTG

[illegible]

GATCCGCATTCTACGGTACTTCCGTTGTTGTTCTGTTGTTGATGGTGAGTTCATCACCCAAAGACCATCTGAAGCTCTTAGACAAAGACG
 TGTCAACGGTAACGCTTTGTTGGCTATCTCTAATACCAACGAAGGTGACATCTTCGTTGACCAATCTAAGGCTGACACTGTTACTGCTGCT
 CAGTTTCGTTAGAGACTTGTACCCTAGATTGAACGGTGTCAAGTTGCTGAGGTTGTTGCTGCTGACTCTGTTTAGGTGCTCCAATCCAAC
 AGGCTGACTCTATCATGGGAGATACTCTGTTCCAATGTCCAACCATTTGGTTCTCTCAAGCCTTCAGACAATCTTTCAAGGGTGAATACGC
 GTTCTTCTGCTGATTCCACGGTTCTGACATTTCCAGTACTTCCCATCTTTTGTCTCTAGATTCTTCGACGATCCTGCTTTCACCTCTCT
 TTCCTCAGTCCCTTCTGGACTTCGCTTTGTCTCGTAACTCTGATCCTAACGCAAGTTTGACGACGGTAACCTTGACTCCTAGATGGAACA
 GATACACCTCTTGCTCAAAGTTCGAGATGGTGTCAACCGTACTGATGGTGAAGAGTTGGACATTAGACCAGCTTCTACTGGTGTGGTTT
 GTTGGAGAGATGTGCACTTCTGGGAATCTGTCTCCGAATTGACTGCTCAATAAGCGGCCGCTCAAGAGGATGTGAGAATGCCATTTGCTGA
 GAGATGCAGGCTTCATTTTTGATACTTTTTATTTGTAACCTATATAGTATAGGATTTTTTTGTGCTTTTGTCTTCTCGTACGAGCTT
 GCTCCTGATCAGCCTATCTCGCAGCAGATGAATATCTTGTGGTAGGGGTTTGGGAAAATCATTCGAGTTTGATGTTTTCTTGGTATTTCC
 CACTCTCTTCAGAGTACAGAAGATTAAGTGAGACCTTCGTTTGTGCGGATCCTTCAGTAATGTCTTGTCTTTTGTGTCAGTGGTGAGC
 CATTTTGACTTCGTGAAAGTTTCTTTAGAATAGTTGTTTCCAGAGGCCAAACATTCACCCGTAGTAAAGTGAAGCGTAGGAAGACCAAG
 ACTGGCATAAATCAGGTATAAGTGTGAGCAGTGGCAGGTGATCTTCTGAAAGTTTCTACTAGCAGATAAGATCCAGTAGTCATGCATATG
 GCAACAATGTACCGTGTGGATCTAAGAACGCGTCCCTACTAACCTTCGATTTCGTTGGTCCAGTTTGTGTTATCGATCAACGTGACAAGGT
 TGTGATTCGCGTAAGCATGCATACCCAAGGACGCTGTTGCAATTCAGTGAGCCAGTTCACAACATCTTTGTAATATTAGAGCACTT
 CATTGTGTTGCGCTTGAAGTAAATGCGAACAAATTAAGAGATAATCTCGAAACCGGACTTCAAACGCCAATATGATGTGCGGCACACA
 ATAAGCGTTCATATCCGCTGGGTGACTTTCTGCTTTAAAAAATATCCGAAAAAATTTCTAGAGTGTGTTACTTTATACTTCCGGCTC
 GTATAATACGACAAGGTGTAAAGGAGGACTAAACCATGGCTAAACTCACCTCTGCTGTTCCAGTCTGACTGCTGCTGATGTTGCTGGTGCT
 GTTGAGTTCTGGACTGATAGACTCGGTTTCTCCCGTACTTCGTAGAGGACGACTTTGCCGGTGTGTACGTGACGACGTTACCTGTTC
 TCTCCGAGTTTCCAGGACAGGTTGTGCCAGACAACACTCTGGCATGGGTATGGGTTCTGGTCTGGACGAAGTGTACGCTGAGTGGTCTGA
 GGTGCTGTCTACCAACTTCCGTGATGCATCTGGTCCAGCTATGACCGAGATCGGTGAACAGCCCTGGGGTCTGAGTTTGCACTCGCTGAT
 CCAGCTGGTAACTGCGTGCAATTTCTGCGCAGAAGAGCAGGACTAACAACTTACACCTTACGATTATTTAGAGAGTATTTATGTTTTATT
 GTATGTATACGGATGTTTTATTATCTATTTATGCCCTTATATTCTGTAACCTATCCAAAAGTCTATCTTATCAAGCCAGCAATCTATGTCC
 GCGAACGTCAACTAAAAATAAGCTTTTTATGCTCTTCTCTTTTTTCCCTTCGGTATAATTATACCTTGCATCCACAGATTCTCTGCC
 AAATTTTGCATAATCTTTACAACATGGCTATATGGGAGCACTTAGCGCCCTCCAAAACCCATATTGCCTACGATGTATAGGTGTTTTTT
 CCACAATATTTTCTGTGCTCTCTTTTTATTAAAGAGAAGCTCTATATCGGAGAAGCTTCTGTGGCCGTTATATTCCGGCTTATCGTGGG
 ACCACATTGCCTGAATTGTTTGCCTCCGAAGATTGGGGAACTTGGATCTGATTACCTTAGCTGCAGGTACCACTCATCAGCCAGCTGGC
CCAGTTCGGCATAAAGGTTTCCCACTGCAAGCCATACAATTTGTGTGGTTTGGAGCCCTTTTCAAGGCCAAGTGAATGCTTCGTAGGCCCTC
GCTTGGTTGGCGCAGCATTTGATAAGCCTCACCAAGTAAAAACCATGGTAGAAAGTCGTTGCTTCCGAATTAACAACCTGCCGAAGCAGG
ACACAAGCAGACTGTGGGTTAAATACGTGACTGTTTCGGTAGTAGCAACAAGTATGCGTGGCATATATATATGATGGCTCGAATCTTAACA
GTCCAGATGCCTCTCACAGACGCGCACTGCCTTGGCCATATCTCCAAGGCGCTCATTAGCACTAATGAGGGCGCACCAAGAGAGGAATA
CTCTGTGAAGCGGGAAGAAGAGGGAGGCGGAAGAGCCAAAGTGGCTCCAACCTCATCCCTGGCAGCTTCGATGTTGCCCTCCGACGACAAGA
ACGGAGGCAAATTTGAGTGGGTGGAACGGGCGACGTCAATCTCTTTTGTATAGTCTGCAACGTCAATTGGGGAGTTTCACCAAGGCTG
TGTTCAGTGCATCGACGGCCTCATGTTTGAACCTGCGGCCATCAATGTTTGTCTTTAAGTAACCATTAATGCAGAGTTGTTGGGAGTTAA
TGTAATACATCTTTGTAGGGCTCCATGGCATTCTGTTGTGTTTAAAGAGTAGATAGCATTTCGGCAGCTTCTCTCCAGATAGATGGATCT
TTGTAAGCTCTGATGAGCGTGATAAAAGGTCGTTGATAACATCCAGGGCCGCTGCGGTACCGTCTGTTTGGTCTTGACCAGATCCATAG
CCCTCAATGCAGCTCGGAGTCCCAAGAGCCTTCTCGTTGAATGGATCATTTTGGAGGGCAAAATCGAACGAATCAATTGCCAGCTGGTA
CAAGTGGACTTTCGTGAGCATTGATCCGAGCGCTAGGCAAGTGGAGACAGCTATCTTGCGAACCTCGAGTTGTTTATCATATACCACTTTC
CGTTGCTGGGAGTCAGCTTGAGACGTTGGTACGGGATCAGCTCACTTCCAGTGTCACTGGCGGAGGCTGTGAAGGTTCTGTTCAATAGTA
 GTGGT

Fig. 1 T shows SEQ ID NO: 121, which is the codon-optimized human serum albumin (HSA) sequence with its natural signal sequence exchanged by the LLP-signal sequence. The LLP-signal sequence is underlined. Position 45 (labeled in bold and with grey background color) contains a silent mutation from G to C.

ATGTTTGAGAAGAGTAAATTTGTGGTTTCGTTTCTGCTTTTACTTCAGCTATTTTGTGTCCTTGGTGTACATGGAGACGCACACAAGAGCG
 AAGTGGCTCATCGTTTCAAAGATCTGGGTGAAGAGAATTTCAAAGCATTGGTGTGATTGCATTTGCACAATACCTTCAAACAATGTCATT
 TGAGGACCACGTCAAACCTTGTAATGAAGTGACAGAGTTTGCTAAAACCTTGCCTGCTGACGAGTCCGACAGAGATTGCGACAAGCTTTTA
 CATACTCTGTTCCGAGATAAGCTGTGTACAGTTGCCACCTTGAGAGAGACTTACGGCGAAATGGCTGACTGTTGCGCTAAACAGGAACCCG
 AGAGAAACGAATGTTTTCTGCAACATAAGGATGATAACCCTAATTTGCCAAGGTTAGTACGCTCCTGAGGTTGATGTCATGTGTACAGCTTT
 TCATGACAATGAGGAACTTTCTTGAAGAAAGTACCTGTACGAGATCGCAAGACGTCACCCATACCTTACGCTCCAGAATCCTGTTTTTTC
 GCTAAGAGATATAAGGCAGCATTACCGGAGTGTGTGACGGCCGCTGACAAAGCTGCTTGTGTTTACCTAAGCTTGACGAGTTGAGAGATG
 AAGGAAAAGCCTCATCAGCTAAGCAAGACTAAAATGTGCATCTCTTCAAAGTTTGGTGAAGAGCTTTCAAAGCTTGGGCCGTTGCTAG
 GCTCTCTCAAAGATTCCCAAGGCTGAATTTGCTGAAGTCTCTAAGCTTGTAAACAGATCTAACTAAAGTCCACACTGAATGCTGTGATGGA
 GATCTGCTAGAATGCGCGGACGACAGAGCTGACTTGGCTAAATACATTTGTGAAAAATCAGGATTCGATCAGTTGAAACTCAAAGAGTGTT
 GTGAGAAGCCACTATTGGAGAAATCCCATTCGATCGCTGAAGTCGAAAAATGACGAAATGCCGGCTGACTTGCCTAGTCTTGCAGCAGATTT
 CGTAGAATCAAAGGATGTATGTAAAACTACGCCGAAGCAAAAGACGTGTTTTTGGGCATGTTTCTGTATGAATATGCCAGGAGACACCCA
 GATTATTCGAGTGTGTTGCTGCGTTTGGCTAAGACTTATGAGACAACGTTAGAAAAGTGTGCTGCTGCCGCCGACCCACATGAATGTT
 ATGCCAAAGTTTTTGTAGATTCAAGCCATTGTTGAGGAACCTCAAACCTTGATAAAACAAAATTTGAATGTTTGAACAATTTGGGTGA
 GTACAATTTCAAATGCATTGCTGGTAAAGTACACCAAAAAGGTTTCTCAGGTTTCCACCCTACTCTAGTCGAGGTTTCCAGAACTTG
 GGAAAGGTGGGTTCTAAGTGTGTAACACCCCGAGGCCAAACGTATGCCCTGTGCTGAAGATTACTTGAGCGTCTGTTCTCAACCAATTAT
 GTGTGCTGCATGAAAAGACGCCAGTTTCCGATCGAGTCACCAAGTGTGTACTGAGTCTTTGGTAAATCGTAGACCTGTTTCTCAGCATT
 AGAAGTGGACGAGACTTATGTGCCGAAGGAATCAATGCTGAACATTTACTTTTTCATGCTGATATTTGTACATTGTGAGAAAAAGAGAGA
 CAAATCAAAAAGCAGACTGCCTTGGTGGAGCTTGTAAACACAAGCCAAAGGCTACTAAAGAGCAATTGAAAGCAGTTATGGATGATTTTG

CAGCATTTCGTTGAGAAATGTTGCAAGGCAGACGACAAGGAGACATGTTTTGCCGAGGAGGGTAAAAAGCTTGTTGCAGCTAGCCAGGCTGC
TTTGGGACTTTAA

Fig. 1 U shows SEQ ID NO: 129, which is the shortened LLP-promoter sequence delta29 corresponding to a 576 bases length of the shortened LLP-promoter

TGGTGGAACCTTTATTATTCTTTCTACGATCCAAGCATTATGTTGTGGAACAAAGCGAATACTCTTATTAGCTGGTAATTGAGCGAGTTGAA
AAAATCAAGTCTATTGGAGGGTATGGTCAGAGTACTGATAGAGATCCCTGTTAAGATAATCGATCTTTTTCAAATATCCAATTTCAATCCCA
TCTTGCCATCGGGTCTTGGCTTCTTACATCAATAATTAAGTCTTACTCTATTAGTGCCAAAAATGGTAAACCGTATTCAAATGCTGC
AAGCATATGCTTAAAGGATCGCGTTGCGAGCTTCTTTGAGATTGCGAAGCTTGATTTTATGCTCTTGTTGGGAAGAAAAGCAACCCACTG
AATCCAGATTTGTTGTTTTTATGCTATGGACGACATACTTTGAGTAATACCGTTACTGAGATTTTACCGAATTCGCATTGCGTTGAGGC
GTGAAGTTTCTTAATGCTGTGCCATATGGTTAAGTTGCGTTTCAAGATGGTCCACAAGTATTTTGTATTTAAGCAGTGTCAATTCAGCC
TAACTGCTCATAAAAACTACACGGTTTGCT

Fig. 1 V shows SEQ ID NO: 130, which is the shortened LLP-promoter sequence delta93 corresponding to a 512 bases length of the shortened LLP-promoter

TATTAGCTGGTAATTGAGCGAGTTGAAAAATCAAGTCTATTGGAGGGTATGGTCAGAGTACTGATAGAGATCCCTGTTAAGATAATCGAT
CTTTTTCAAATATCCAATTTCAATCCATCTTGCCATCGGGTCTTGGCTTCTTACATCAATAATTAAGTCTTACTCTATTAGTGCCAAA
AATGGTAAACCGTATTCAAATGCTGCAAGCATATGCTTAAAGGATCGCGTTGCGAGCTTCTTTGAGATTGCGAAGCTTGATTTTATGC
TCTTGTTGGGAAGAAAAGCAACCCACTGAATTCAGATTGTTGTTTTCATGCATGGACGACATACTTTGAGTAATACCGTTACTGAGAT
TTTACCGAATTCGCATTGCGTTGAGGCGTGAAGTTTCTTAATGCTGTGCCATATGGTTAAGTTGCGTTTCAAGATGGTCCACAAGTATTT
TGATTTAAGCAGTGTCAATTCAGCCTAACTGCTCATAAAAACTACACGGTTTGCT

Fig. 1 W shows SEQ ID NO: 131, which is the shortened LLP-promoter sequence delta133 corresponding to a 472 bases length of the shortened LLP-promoter

TTGGAGGGTATGGTCAGAGTACTGATAGAGATCCCTGTTAAGATAATCGATCTTTTTCAAATATCCAATTTCAATCCATCTTGCCATCGGG
TCTTGGCTTCTTACATCAATAATTAAGTCTTACTCTATTAGTGCCAAAAATGGTAAACCGTATTCAAATGCTGCAAGCATATGCTTA
AAAGGATCGCGTTGCGAGCTTCTTTGAGATTGCGAAGCTTGATTTTATGCTCTTGTTGGGAAGAAAAGCAACCCACTGAATTCAGATTG
TTGTGTTTTATGCTATGGACGACATACTTTGAGTAATACCGTTACTGAGATTTTACCGAATTCGCATTGCGTTGAGGCGTGAAGTTTCTTA
ATGCTGTGCCATATGGTTAAGTTGCGTTTCAAGATGGTCCACAAGTATTTTGTATTTAAGCAGTGTCAATTCAGCCTAACTGCTCATAA
AACTACACGGTTTGCT

Fig. 1 X shows SEQ ID NO: 132, which is the shortened LLP-promoter sequence delta201 corresponding to a 404 bases length of the shortened LLP-promoter

TTTCATTCCATCTTGCCATCGGGTCTTGGCTTCTTACATCAATAATTAAGTCTTACTCTATTAGTGCCAAAAATGGTAAACCGTATTC
AAATTGCTGCAAGCATATGCTTAAAGGATCGCGTTGCGAGCTTCTTTGAGATTGCGAAGCTTGATTTTATGCTCTTGTTGGGAAGAAAAG
CAACCCACTGAATTCAGATTGTTGTTGTTTTATGCTATGGACGACATACTTTGAGTAATACCGTTACTGAGATTTTACCGAATTCGCATT
GCGTTGAGGCGTGAAGTTTCTTAATGCTGTGCCATATGGTTAAGTTGCGTTTCAAGATGGTCCACAAGTATTTTGTATTTAAGCAGTGT
CAATTCAGCCTAACTGCTCATAAAAACTACACGGTTTGCT

Fig. 1 Y shows SEQ ID NO: 133, which is the shortened LLP-promoter sequence delta233 corresponding to a 372 bases length of the shortened LLP-promoter

CTTACATCAATAATTAAGTCTTACTCTATTAGTGCCAAAAATGGTAAACCGTATTCAAATGCTGCAAGCATATGCTTAAAGGATCG
CGTTGCGAGCTTCTTTGAGATTGCGAAGCTTGATTTTATGCTCTTGTTGGGAAGAAAAGCAACCCACTGAATTCAGATTGTTGTTGTTTT
CATGCATGGACGACATACTTTGAGTAATACCGTTACTGAGATTTTACCGAATTCGCATTGCGTTGAGGCGTGAAGTTTCTTAATGCTGTGC
CATATGGTTAAGTTGCGTTTCAAGATGGTCCACAAGTATTTTGTATTTAAGCAGTGTCAATTCAGCCTAACTGCTCATAAAAACTACAC
GGTTTGCT

Fig. 1 Z shows SEQ ID NO: 134, which is the shortened LLP-promoter sequence delta300 corresponding to a 305 bases length of the shortened LLP-promoter

GCAAGCATATGCTTAAAGGATCGCGTTGCGAGCTTCTTTGAGATTGCGAAGCTTGATTTTATGCTCTTGTTGGGAAGAAAAGCAACCCAC
TGAATTCAGATTGTTGTTGTTTTATGCTATGGACGACATACTTTGAGTAATACCGTTACTGAGATTTTACCGAATTCGCATTGCGTTGAG
GCGTGAAGTTTCTTAATGCTGTGCCATATGGTTAAGTTGCGTTTCAAGATGGTCCACAAGTATTTTGTATTTAAGCAGTGTCAATTCAG
CCTAACTGCTCATAAAAACTACACGGTTTGCT

Fig. 2: Amino acid sequences

Fig. 2 A shows the amino acid sequence of the SSN6-like protein of *P. Pastoris* (SEQ ID NO: 8)

MNEPSQPPPVTLEVRHDPVPTSQADSQQRKVVYDKQLEFRKIAVSTWLALGSMHEVHLYQLAIDSFDFALQNDPFNEKALCGLAAALRAM
DLVKDQTDGTAALDVINDLLSRSELYKDPSTWREAAECYLLNNTTNNAMEALQRCIQLTPNNSALWLLKGQTLMAAGSKHEAVDALNTA
LVKLPNDVADYTKEEIDVARSTHSEFASVLAEGNIEAARDELEATLALPPSSSRFTEYSSLWCALISANERLGDMAKAVRVCEEASGLL
GFEPCTIYICHAYLLLLPNSHVFNPQSACVLLRQVNSESNDFLPWFLLGEAYQMLRQPSEAYEAFQLALKRAPNHTIVWLAVGNLYAELGQ
LADALSAYMFVIKRETEQEESKILLSFAWGLSSVYEKCHGQLADSEACMKSSSYASQAGDSSRANFLNSRLETLLRVVSGEIPLSDYR
PSTCCQSPYLLRDLTSLISERENLANASLDDIASAPEIKSSSKKRTDTSRPMPPYPSHSANNYNLPSEDSQPQRQNLPHVSLPNVPLAQ
QQRVHAPANKNLSPSADQRFSIATHPPVAPPTNFPSSCFTTVTTTTATTAATVSTTKLSALCAFTNVPTFTPIPI

Fig. 2 B shows the amino acid sequence of the SSN6-like modified protein of *P. Pastoris* YJK_PVA_021 (SEQ ID NO: 9)

MNEPSQPPPVTLEVRHDPVPTSQADSQQRKVVYDKQLEFRKIAVSTWLALGSMHEVHLYQLAIDSFDFALQNDPFNEKALCGLAAALRAM
DLVKDQTDGTAALDVINDLLSRSELYKDPSTWREAAECYLLNNTTNNAMEALQRCIQLTPNNSALWLLKGQTLMAAGSKHEAVDALNTA
LVKLPNDVADYTKEEIDVARSTHSEFASVLAEGNIEAARDELEATLALPPSSSRFTEYSSLWCALISANERLGDMAKAVRVCEEASGLL
GFEPCTIYICHAYLLLLPNSHVFNPQSACVLLRQVNSESNDFLPWFLLGEAYQMLRQPSEAYEAFQLALKRAPNHTIVWLAVGNLYAELGQ
LADEWYLQLR

Fig. 2 C shows the amino acid sequence of the LLP protein including LLP signal sequence of *P. Pastoris* (SEQ ID NO: 10). The LLP signalsequence is underlined.

MFEKSKFVVSFLLLLQLFCVLGVHGVESGNGTTSdTAYACDIGATPFDFGNATYQYQASDDNSIQDPVFMSTGYLQRNQLHSTTGVTNPG
FNIFTAGVATTTLYGIPNVNYQNMLLELKGFRADASGNYGLSLRNIDDSAILFFGRETAFECCNENLIPLDEAPTDYSLFTIKEGEASTN
PDSYTYTQYLEAGRYYPVRTFFANIRTRAVFNFTMTLPDGSELDFQNYIFQFALNQCCQAEIVTRENYTTTTEPWTGTFEATTTVIP
GTPEGTIVVQTPYSTIDSTSTWTGTFTTFTDADGSTIAVPSSTIDHFASTETVLTDTAISTTVITVTSCGTSKCTKTALTGVTQRTL
TIDDRTTVVTTYCLPTDVATIKTASVSGSEVVQTIYAKHSQAVSVVHPSTVTITREVCDATCTQATIVTGEILQTTVVDSGSTTVV
VYPVETHEPTFELSTL

Fig. 2 D shows the amino acid sequence of the LLP signal sequence of *P. Pastoris* (SEQ ID NO: 140)

MFEKSKFVVSFLLLLQLFCVLGVHGV

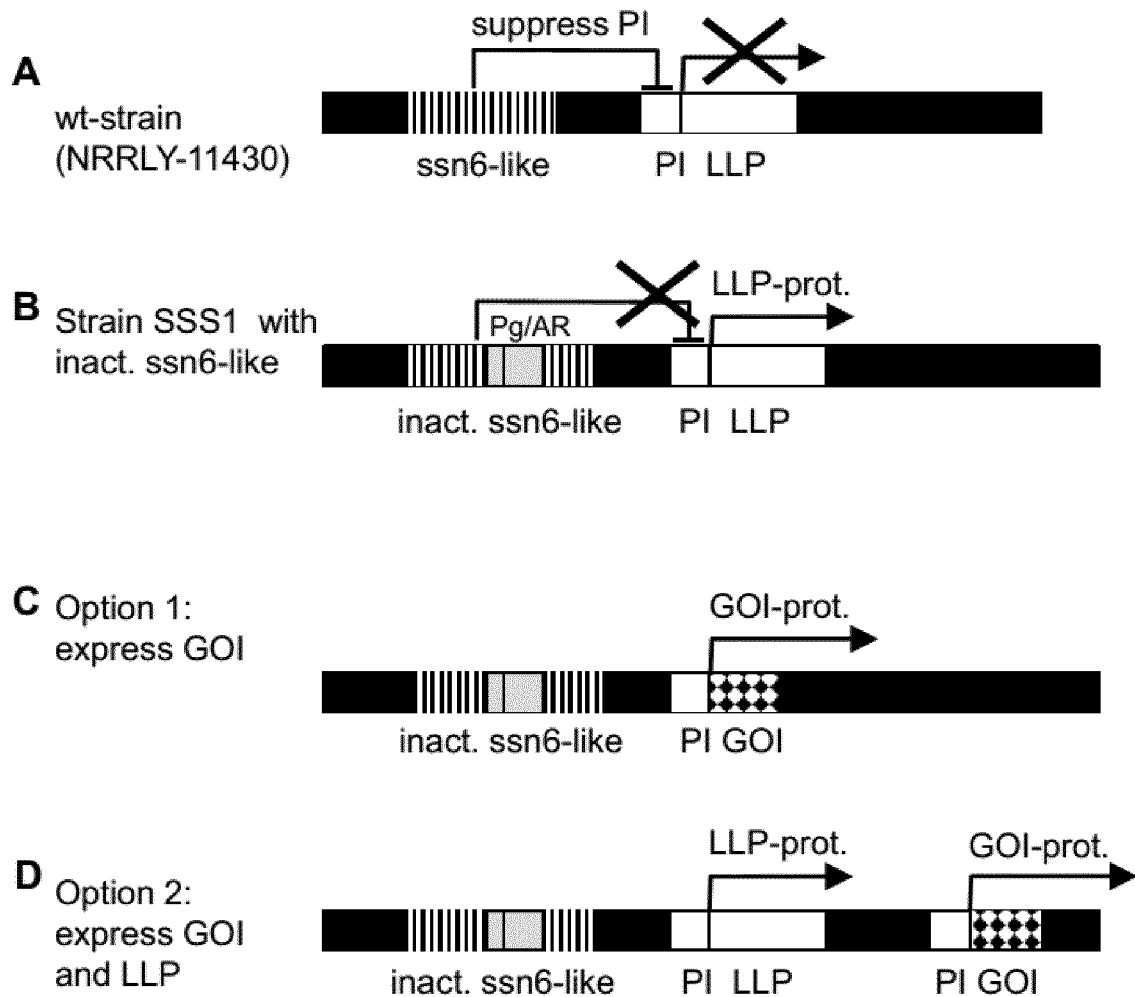
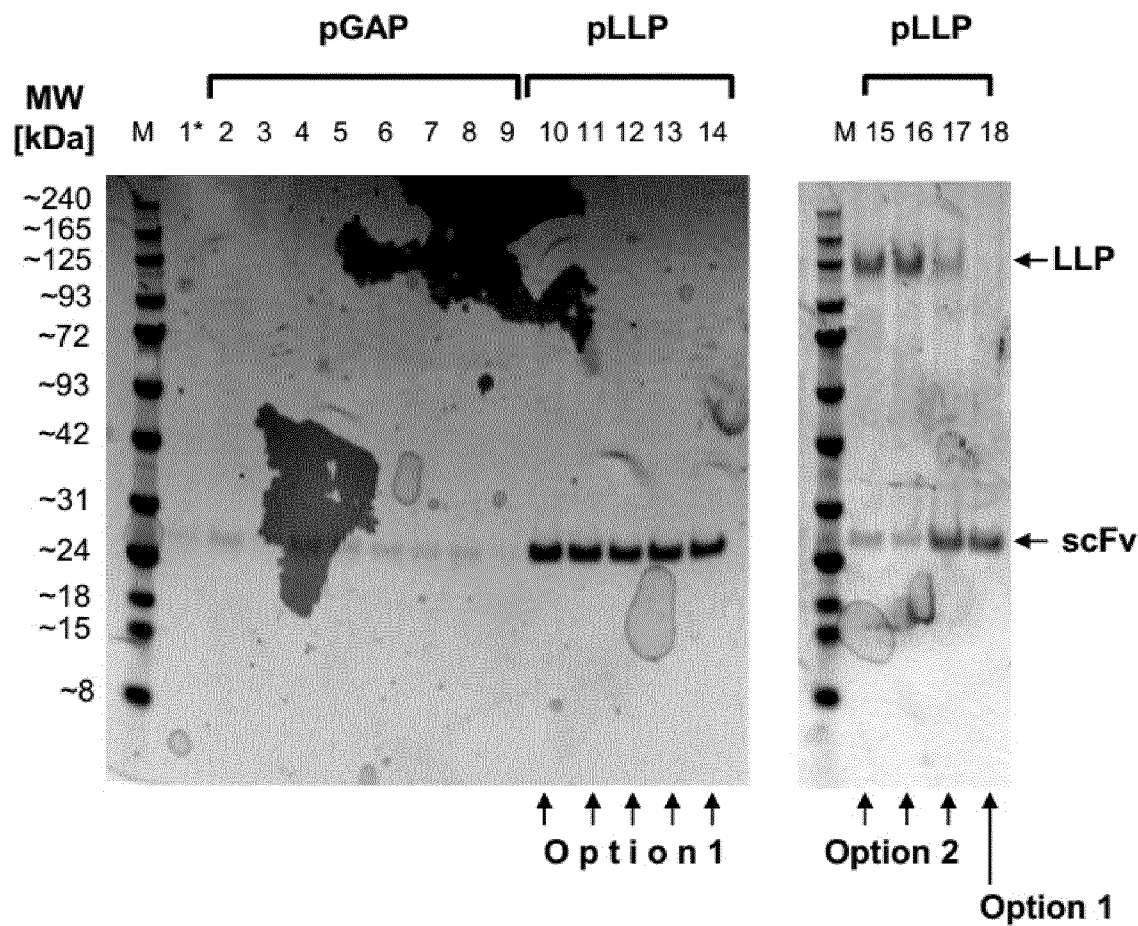
Fig. 3: Mechanism of the super-secretor strain 1

Fig. 4



Lane	M	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	M	15	16	17	18
LLP			-	-	-	-	-	-	-	-	-	-	-	-	-		+	+	0	-
scFv			0	0	0	0	0	0	0	-	++	++	++	++	++		0	0	+	+
Option											1	1	1	1	1		2	2	2	1

Fig. 5 B:

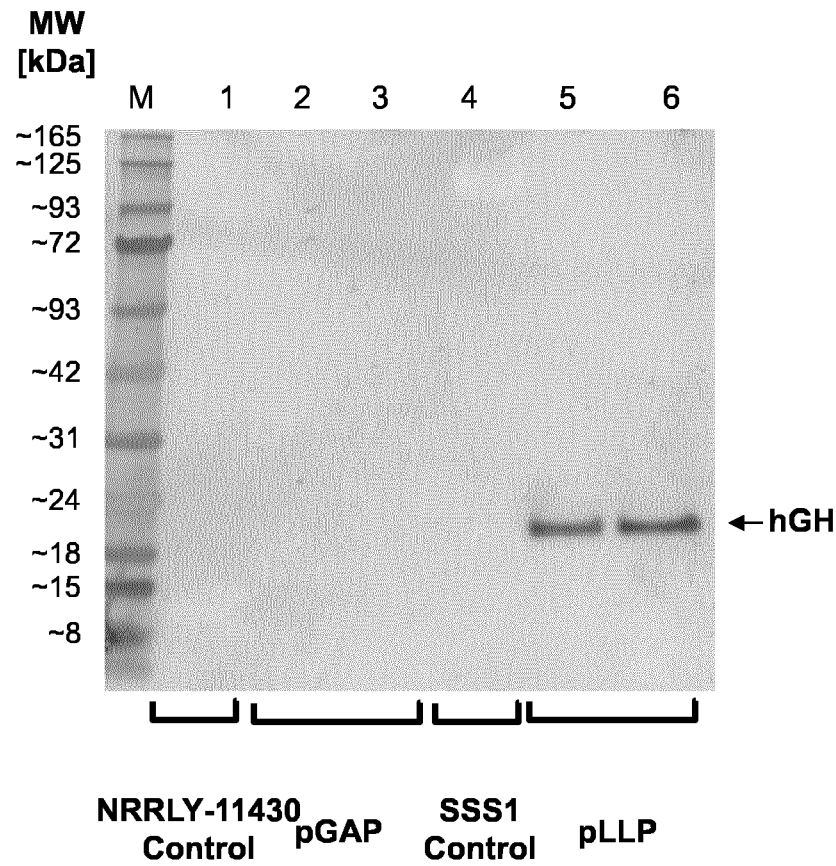
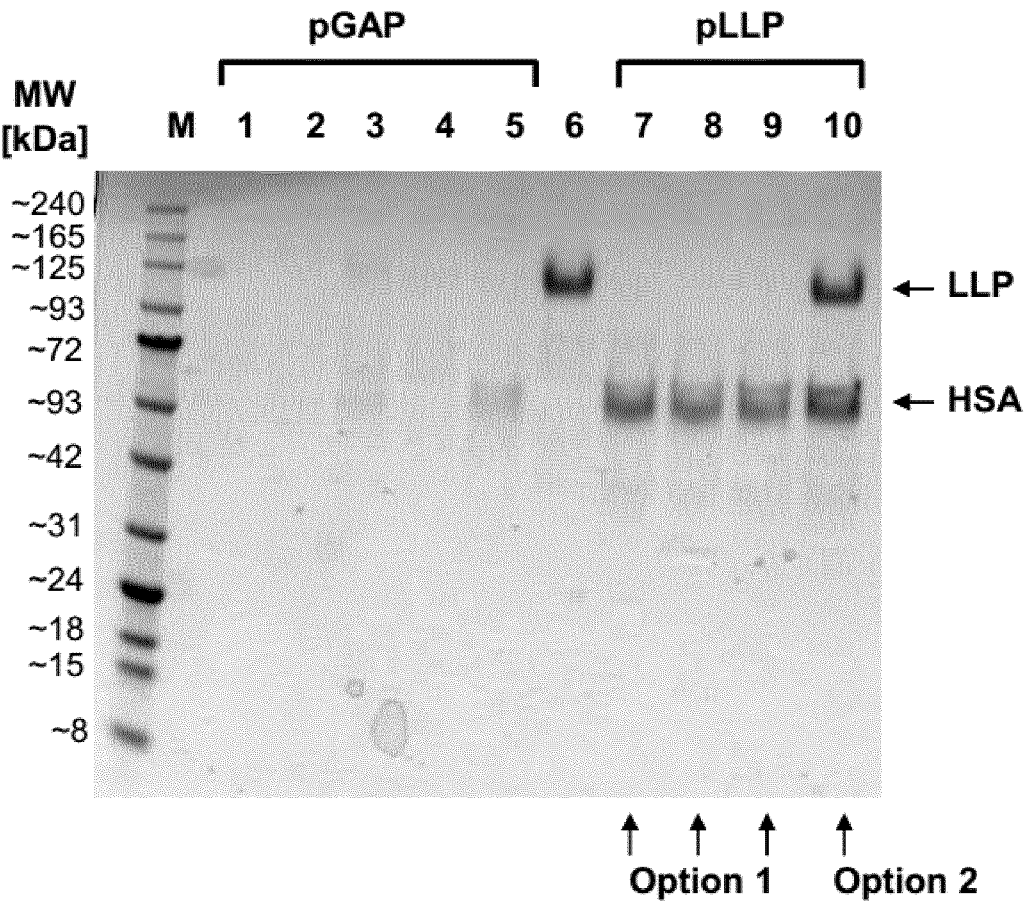


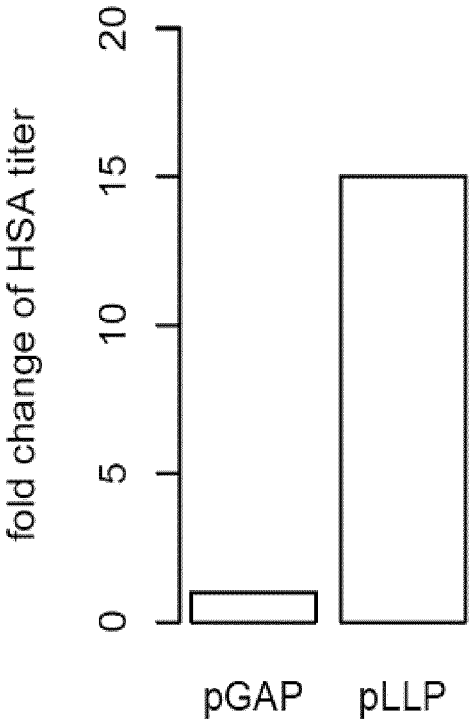
Fig. 6



Lane	M	1	2	3	4	5	6	7	8	9	10
LLP		-	-	-	-	-	++	-	-	-	++
HSA		-	-	0	-	+	-	++	++	++	++
Option								1	1	1	2

Fig. 7

7 A



7 B

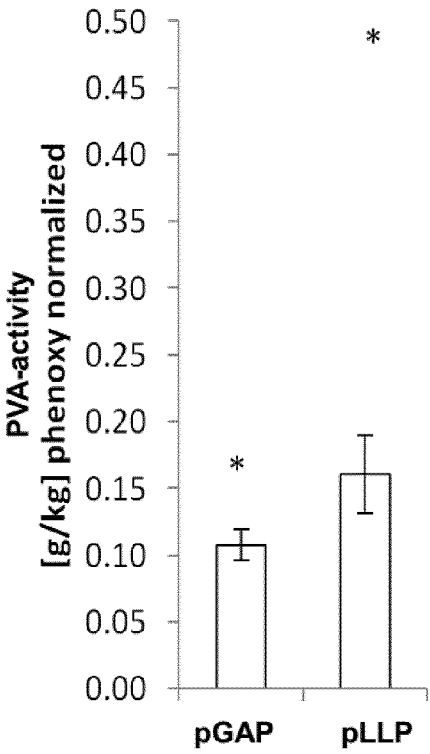
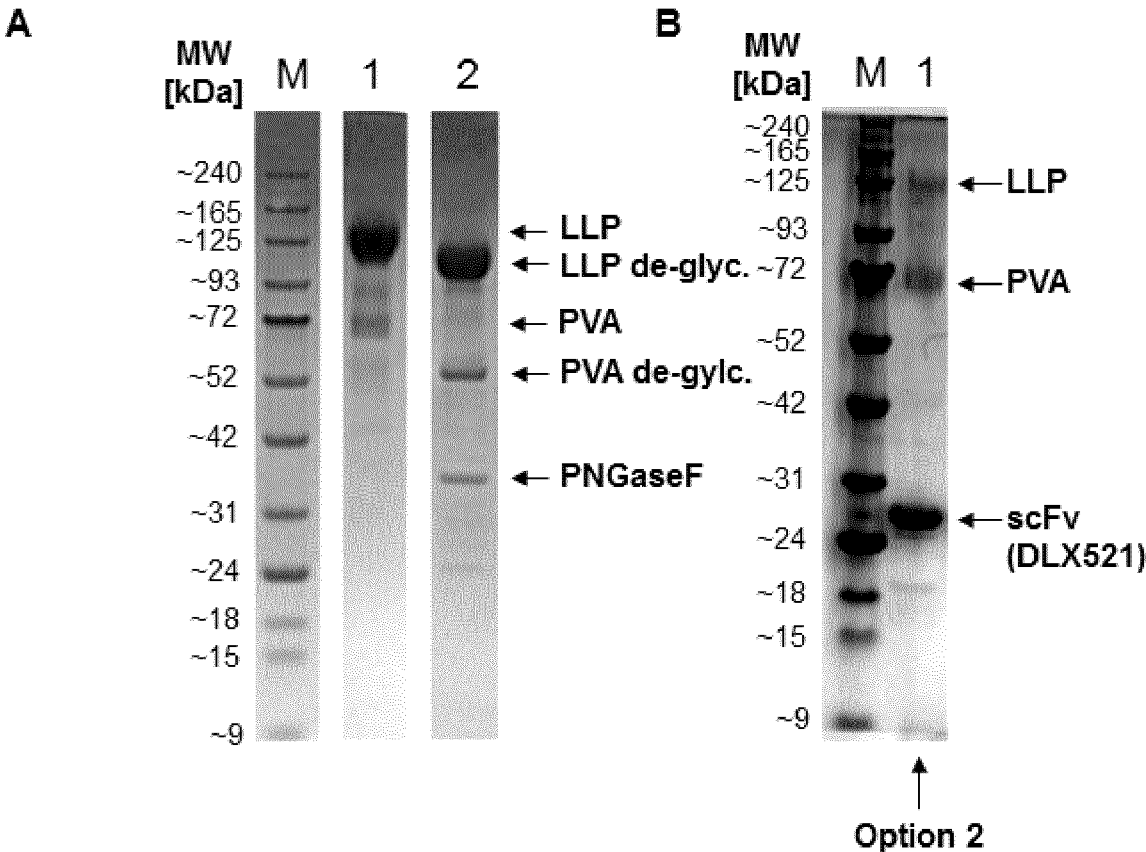
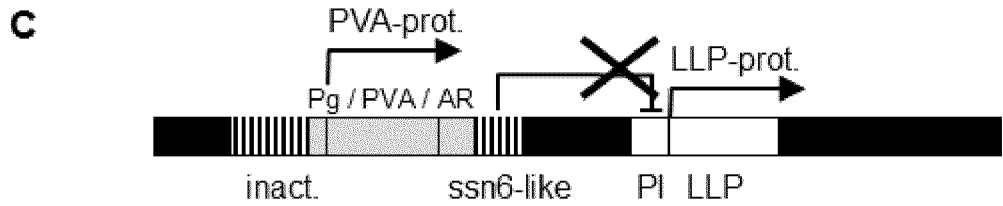


Fig. 8



Lane	M	1	2		M	1
LLP, glycos.		++	-			+
LLP, de-glycos.		-	++			-
PVA, glycos.		+	o			+
PVA, de-glycos.		-	++			-
scFv, glycos.		-	-			++
PNGaseF added		no	yes			no



	<u>Consensus Sequence 1</u> see Fig 9B	<u>Consensus Sequence 2</u> see Fig 9C
CCA36593.1	SESNDFLPWFLIGEAYQMLRQPSAEYAEFQLAKRAPNHTIV	WLA AVGNL YAE L GQ L ADAL SAYMFV I K R E T E Q E S ---K I L L S F A W EGLSSVY EK CHGQLADSI EACMK
XP_002489776.1	SESNDFLPWFLIGEAYQMLRQPSAEYAEFQLAKRAPNHTIV	WLA AVGNL YAE L GQ L ADAL SAYMFV I K R E T E Q E S ---K I L L S F A W EGLSSVY EK CHGQLADSI EACMK
XP_002770760.1	NDDGDFLPWYLTGKAYS KL DS P RAAYDSYQVAFRRAPKSP	IPWLA I G K L Y L Q L N Q L P D T L A A Y S Q A L R L Q V D E K -----S P A T A T A W D G L S C V V E R S N G Q L M D A A D A C N R
EDK37317.2	WPAEDFLPYFLLGQAYSLLNHPRAAYDAYQVALRRASNSP	I A W L A V G K L Y L K L Q L P D A L A A Y S Q A L R L Q M D D G -----S A G A A A A W D G L S C V V E R C D F Q L T O A A D A C D R
XP_001485744.1	WPAEDFLPYFLLGQAYSLLNHPRAAYDAYQVALRRASNSP	I A W L A V G K L Y L K L Q L P D A L A A Y S Q A L R L Q M D D G -----S A G A A A A W D G L S C V V E R C D F Q L T O A A D A C D R
XP_002619527.1	DVPGDFLPWYLLGKAYTHLDAPRAAYDSYQIALRRANNSP	ITWLA V G K L Y L E L K Q L P D A L A A Y S Q A L R L Q M N E N -----S P G T A A A W D G L S C V V E R C D D Q L G D A A D A C S R
XP_004200097.1	SSEGDFLPWYLLMGKAYS ILGSPRLAYDCYQVALRRASNSP	ITWLA V G K L Y L Q L R Q L P D A L A A Y S Q A L R L H I D E N -----S H A T A L A W D G L S C V V E Q S E D Q L M D A S D A C A R
XP_004199242.1	SSEGDFLPWYLLMGKAYS ILGSPRLAYDCYQVALRRASNSP	ITWLA V G K L Y L Q L R Q L P D A L A A Y S Q A L R L H I D E N -----S H A T A L A W D G L S C V V E Q S E D Q L M D A S D A C A R
XP_002419644.1	QEGSDFLPWYLLGKAYSHSD-PRSA YDSYQVALRCASNCS	I I W L A V G K L Y L E L K Q L K D A L E A Y S Q A L K L Q L G D G -----S N G T A T A W D G L S C V V E R C E D Q L M D A C D A C N R
BAF31137.1	QEGSDFLPWYLLGKANSYLD-PRAA YDCYQVALRCASNCS	I I W L A V G K L Y L E L K Q L K D A L E A Y S Q A L K L Q L G D G -----S N G T A T A W D G L S C V V E R C E D Q L M D A S D A C N R
XP_719833.1	QEGSDFLPWYLLGKANSYLD-PRAA YDCYQVALRCASNCS	I I W L A V G K L Y L E L K Q L K D A L E A Y S Q A L K L Q L G D G -----S N G T A T A W D G L S C V V E R C E D Q L M D A S D A C N R
EMG49052.1	QEGSDFLPWYLLGKAYSF ID-PRAA YDCYQVALRCASNCS	I I W L A V G K L Y L E L K Q L K D A L E A Y S Q A L K L Q I G E G -----S H G T A T A W D G L S C V V E R C E D Q L M D A S D A C S R
XP_002651300.1	QEGSDFLPWYLLGKAYS YLD-PRAA YDCYQVALRCASNCS	I I W L A V G K L Y L E L K Q L K D A L E A Y S Q A L K L Q I G D G -----S H G T A T A W D G L S C V V E R C E D Q L M D A S D A C N R
XP_001526425.1	SEGTDFLPWYLLGRAHSFMDRPRLAYDSYQVALRCASNSP	ITWLA V G K L Y L E L K Q L P D A L A A Y S Q A L K L Q L E D G -----S Q G T A T A W D G L S C V V E R C D D H L M D A S D A C S R
CCE42279.1	NEGTDFLPWYLLGRAHSFMDRPRLAYDSYQVALKCAASNSP	ITWLA V G K L Y L E L K Q L P D A L A A Y S Q A L K L Q L D D G -----S Q G T A T A W D G L S C V V E R C D D H L M D A S D A C N R
XP_003868368.1	NEGTDFLPWYLLGRAHSFMDRPRLAYDSYQVALRCASNSP	ITWLA V G K L Y L E L K Q L P D A L A A Y S Q A L K L Q L D D G -----S Q G T A T A W D G L S C V V E R C D D H L M D A S D A C N R
XP_001387682.2	KNDGDFLPWYLLGKAYS LVDQPRLAYDSYQVALRRASNSP	ITWLA V G K L Y L E L K Q L P D A L A A Y S Q A L R L Q I D E S -----S P G T A T A W D G L S C V V E R C D D Q L M D A S D A C A R
XP_007376632.1	ENDEDFLPWYLLGRAYSFMDQPRLAYDSYQVALRRAPNSP	ITWLA V G K L Y L E L K Q L P D A L A A Y S Q A L R L Q M D D G -----S Q G T A T A W D G L S C V V E R C D D H L M D A S D A C A R
Consensus	: * : : . . . : : * : * * * * * : * : : . :	* * : * * . * * : * : . :

B

Pichia SSN6-like:

W L A V G N L Y A E L G Q L A D A L S A Y
352 355 360 365 370 372

Consensus Sequence 1:

W(CGL)(SLTA)(IMV)**G**(VINSTK)**LY**(YFLA)(QNSRKE)(INLM)
352 355 360
(GNSKR)**Q**(NFYL)(HRETPAK)**D**(AST)(LI)(DGTNASE)(AV)(YF)
365 370 372

C

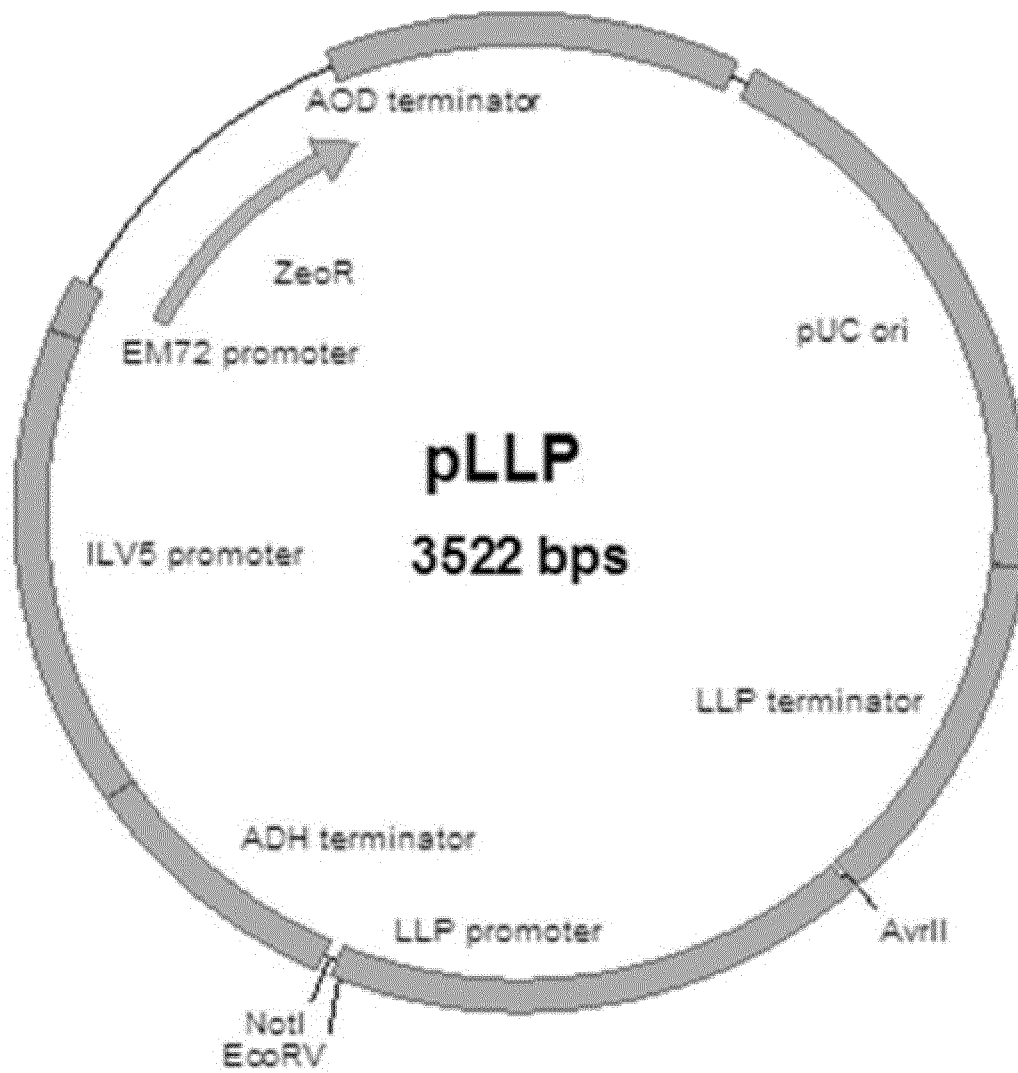
Pichia SSN6-like:

W E G L S S V Y E K C H G Q L A D S I E A C M K
394 400 405 410 415 417

Consensus Sequence 2:

W(YFLED)(NDG)**L**(GLAS)(TSIQC)(LIV)**YE**(TSARKQ)(CS)
 394 400
 (NHSDEH)(DNK-RGF)(Q-H)(ILTHVAS)(TSNQERIAMG)**D**
 405 410
 (ASV)(LIASC)(DHNE)(SA)(YC)(EAKRQMTLNDS)(RQK)
 415 417

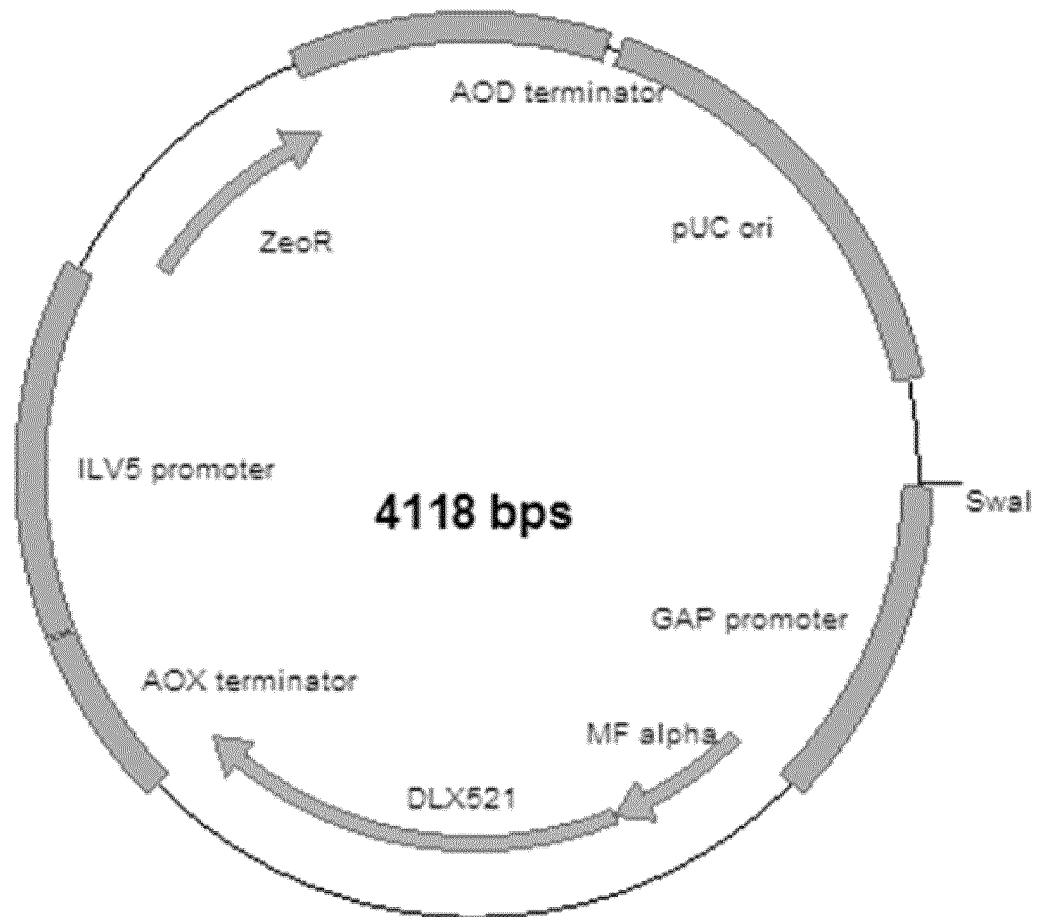
Fig. 10

A: Expression vector pLLP

B: Full sequence of pLLP (SEQ ID NO: 65)LLP-promoter, LLP-terminator, NotI, EcoRV, AvrII

AAATTTTGCATAATCCTTTACAACATGGCTATATGGGAGCACTTAGCGCCCTCCAAAACCCATATTGCCTACGCATGTATAGGTGTTTTT
CCACAATATTTTCTCTGTGCTCTCTTTTTATTAAGAGAAGCTCTATATCGGAGAAGCTTCTGTGGCCGTATATTGGCCCTTATCGTGGG
ACCACATTGCCTGAATTGGTTTGGCCCGGAAGATTGGGGAACCTTGGATCTGATTACCTTAGCTGCAGGTACCACTGAGCGTCAGACCCG
TAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTCTGCGCTAATCTGCTGCTTGCAAACAAAAAACCCGCTACCAGCGGTGGT
TTGTTTGGCGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAACCTGGCTTCAGCAGAGCGCAGATACCAATACTGTTCTTAGTGTAG
CCGTAGTTAGGCCACCACTTCAAGAACTCTGTAGCACCGCTACATACCTCGCTCTGCTAATCCTGTTACCAAGTGGTGTGCCAGTGGCG
ATAAGTCGTGCTTACCGGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTGGGCTGAACGGGGGGTTCGTGCACACAGCC
CAGCTTGGAGCGAACGACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCGAAGGGAGAAAGCGGAC
AGGTATCCGGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGAAACGCCTGGTATCTTTATAGTCCTGTGGGT
TTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGGCGGAGCCTATGAAAAACGCCAGCAACGCGGCTTTTTACG
GTTCTGGCCTTTTGTGCTGCTTTTGTCTCACATGTTCTTCTGCGGTACCCAGATCCAATCCCCTTTGACTGCCTGAAATCTCCATCG
CCTACAATGATGACATTTGGATTTGGTTGACTCATGTTGGTATTGTGAAATAGACGCAGATCGGGAACACTGAAAAATACACAGTTATTAT
TCATTTAAATCAGCGTCTTGGAGTCTCAGGCTCTGACTGGGCACTGCTGCAACTGGAACCTCCCAAGCTCCACCAAAACAGCAGGTGT
AGCCGAAAGTATTCACGTGTCCAGAAATGAGGCCACAGTACATCTGTACCGTTTCTCAACCCCTTCAACGGTTCTTTGCAAAATGGA
GAAGCAAAATACCCTGAAATGGTCAGCTTTCTTTGGAGTAGTAGTTCCGCTGCTCAACGTACTCTTCGTTTAAAAGCCCTCCTAGGACAAA
TGGCCAAGCTGGGAAACGGGATTGGTGGAACTTTATTATCTTTCTACGATCCAAGCATTATGTTGTGGAACAAAGCGAATACTCTATT
AGCTGGTAATTGAGCGAGTTGAAAAATCAAGTCTATTGGAGGGTATGGTCAGAGTACTGATAGAGATCCCTGTTAAGATAATCGATCTTT
TTCAAATATCCAATTTCAATCCATCTTGCCATCGGGTCTTGCTTCTTACATCAATAATTAATACTACTTACTCTATTAGTGCCAAAAATG
GTAACCGTATTCAAATGCTGCAAGCATATGCTTAAAGGATCGCGTTGCGAGCTCTTTTGAGATTCGCAAGCTTGATTTTATGCTCTT
GTGGGAAGAAAAGCAACCCACTGAATTCAGATTTGTTGTGTTTTCATGCATGGACGACATACTTTGAGTAATACCGTTACTGAGATTTA
CCGAATTCGCATTGCGTTGAGGCGTGAAGTTTCTTAATGCTGTGCCATATGGTTAAGTTGCGTTTCAAGATGGTCCACAAGTATTTTTGTA
TTTAAGCAGTGTCAATTCAGCCTAACTGCTCATAAAACTACACGGTTTGCTGATATCAAAACGATGTAAGGGCGGCGCAGCGAATTC
TTATGATTTATGATTTTTATTATTAATAAGTTATAAAAAAATAAGTGTATACAAATTTTAAAGTGACTCTTAGGTTTTAAACGAAAAT
TCTTATTTCTGAGTAACTCTTCTGTAGGTCAGGTTGCTTCTCAGGTATAGCATGAGGTCGCTCTTATTGACCACACCTCTACCGGCAT
GCCGAGCAAAATGCCTGCAAAATCGCTCCCCATTTACCCAATTGTAGATATGCTAATCCAGCAATGAGTTGATGAATCTCGGTGTGATTT
TATGTCCTCAGAGGACAAGGATCCTCAGTAATGTCTTGTCTTTTGTTCAGTGGTGAGCCATTTTGACTTCGTGAAAGTTTCTTTAGA
ATAGTTGTTTCCAGAGGCCAAACATTCACCCGTAGTAAAGTGAAGCGTAGGAAGACCAAGACTGGCATAAATCAGGTATAAGTGTGAG
CACTGGCAGGTGATCTTCTGAAAGTTTCTACTAGCAGATAAGATCCAGTAGTCATGCATATGGCAACAATGTACCGTGTGGATCTAAGAAC
GCGTCTCTACTAACCCTTCGATTCTGTTGGTCCAGTTTGTGTTATCGATCAACGTGACAAGGTTGTGCGATTCCGCGTAAGCATGCATACCCA
AGGACGCTGTTGCAATTCAGTGAAGCCAGTTCCAACAATCTTTGTAATATTAGAGCACTTCATTGTGTTGCGCTTGAAAGTAAAAATGCG
AACAAATTAAGAGATAATCTCGAAACCGCGACTTCAAACGCCAATATGATGTGCGGCACACAATAAGCGTTTATATCCGCTGGGTGACTTT
CTCGCTTTAAAAAATATCCGAAAAAATTTCTAGAGTGTGACACTTTATACTTCCGGCTCGTATAAATACGACAAGGTGTAAGGAGGACT
AAACCATGGCTAAACTCACCCTCTGCTGTTCCAGTCTGACTGCTCGTGATGTTGCTGGTGCTGTTGAGTTCTGGACTGATAGACTCGGTTT
CTCCCGTGACTTCGTAGAGGACGACTTTGCCGGTGTGTACGTGACGACGTTACCTGTTTCATCTCCGAGTTCAGGACCAGGTTGTGCCA
GACAACACTCTGGCATGGGTATGGGTTCGTGGTCTGGACGAACGTACGCTGAGTGGTCTGAGGTCGTGTCTACCAACTTCCGTGATGCAT
CTGGTCCAGCTATGACCGAGATCGGTGAACAGCCCTGGGGTCTGTGAGTTGCACTGCGTGATCCAGCTGGTAACTGCGTGCAATTCGTGCG
AGAAGAGCAGGACTAACCTTAGGACACCTTACGATTATTTAGAGAGTATTTATTAGTTTTATTGTATGTATACGGATGTTTTATTATCTA
TTTATGCCCTTATATTCTGTAACATATCCAAAAGTCTATCTTATCAAGCCAGCAATCTATGTCCGGAACGTCAACTAAAAATAAGCTTTT
TATGCTCTCTCTTTTTTTTCCCTTCGGTATAATTATACCTTGATCCACAGATTCTCTGCCC

Fig. 11

A: Expression vector pGAP with DLX521 as GOI

B: Full sequence of pGAP with DLX521 as GOI (SEQ ID NO: 66)

TCCAAACCCCATATTGCCTACGCATGTATAGGTGTTTTTCCACAATATTTTCTCTGTGCTCTCTTTTTATTAAAGAGAAGCTCTATATCG
GAGAAGCTTCTGTGGCCGTTATATTGGCCTTATCGTGGGACCACATTGCCTGAATTGGTTTGCCCGGAAGATTGGGGAACTTGGATCT
GATTACCTTAGCTGCAGGTACCACTGAGCGTCAGACCCGTCAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTCTGCGCGTAATCT
GCTGCTTGCAAACAAAAAACACCGCTACCAGCGGTGGTTTGTGTGCGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAAGTGGCTT
CAGCAGAGCGCAGATACCAATACTGTTCTTCTAGTGTAGCCGTAGTTAGGCCACCACTTCAAGAAGCTCTGTAGCACCAGCTACATACCTC
GCTCTGCTAATCCTGTTACCAAGTGGTGTGCTGCCAGTGGCGATAAGTCTGTCTTACCGGGTTGGACTAAGACGATAGTTACCGGATAAGG
CGCAGCGGTGCGGCTGAACGGGGGTTCTGTGCACACAGCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATACCTACAGCGTGAGCT
ATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGGCGGACAGGTATCCGGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTT
CCAGGGGGAAACGCTGGTATCTTTATAGTCTGTGCGGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGG
GGAGCCTATGGAAAAACGCCAGCAACGCGGCTTTTTACGGTTCTGGCCTTTTGTGGCCTTTTGTGCTCACATGTTCTTCTGCGGTACC
CAGATCCAATTCCCGCTTTGACTGCCGTAATCTCCATCGCCTACAATGATGACATTTGGATTTGGTTGACTCATGTTGGTATTGTGAAAT
AGACGCAGATCGGGAACACTGAAAAATACACAGTTATTATTCATTTAAATTTTTGTAGAAATGTCTTGGTGTCTCTGCTCAATCAGGTAG
CCATCTCTGAAATATCTGGCTCCGTTGCAACTCCGAACGACCTGCTGGCAACGTAATTTCTCGGGGTAAACTTAAATGTGGAGTAATG
GAACCAGAAACGTCTCTTCCCTTCTCTCTCTCCACCGCCCGTTACCGTCCCTAGGAAATTTTACTCTGCTGGAGAGCTTCTTCTACGGC
CCCTTGCAAGCAATGCTCTTCCAGCATTACGTTGCGGGTAAACGAGAGTCTGTGTACCCGACCTAGCAGCCAGGGATGGAAAAGTCCCG
GCCGTGCTGGCAATAATAGCGGGCGGACGCATGTATGAGATTATTGGAAACCACCAGAATCGAATATAAAGGCGAACACCTTTCCCAA
TTTTGGTTTCTCTGACCCAAAGACTTTAAATTTAATTTATTTGTCCTATTTCAATCAATTGAACAACTATCAAAACACAGAATTCAAAA
CGATGCGTTTCCCATCGATTTTACAGCTGTTCTGTTGCGAGCTTCATCTGCTTTAGCTGCACCTGTTAACACAACCTACAGAGGACGAAAC
GGCCAGATCCCGAGCTGAGGCAGTCATTGGTTATTCGATTGGAAGGTGATTTGATGTCGCTGTGTTACCATTCAGTAATTCACAAAT
AACGGTTTGTGTTCAATACACCACTATAGCAAGCATCGCTGCAAAAGAGGAAGGTGTTTCCCTAGAAAAGAGGGCCAGTCCGTTTGA
CTCAACCCCTTCCGTATCCGCAGCTCCAGGCCAAAAAGTAACGATCTCTGTTGAGGTTCCACTAGTAACATAGGTGACAATTATGTGTC
ATGGTACCAACAGTTGCCCGAACTGCCCTCACTGCTGATCTACGACAATACCAAGAGGCCGTGAGGTATCCAGACAGATTTCCGGT
TCTAAGAGCGGCACATCGGCTACACTAGGTATCACGGGACTTCAAACCGGCGACGAGGCAGATTACTACTGCGCAACTTGGGATAATGATA
AGTGGGGAGTTGTTTTGGAGGTGGTACTAACTCGAAGTCTTGGGTGGTGGAGGAGGATCAGGAGGAGGAGGTTCTGGAGGAGGTGGTTC
ATCTGGCGGTGGATCTGAAGTGCAGCTTGTGGAGAGTGGTGGTGGTTGGTTCAACCAGGAGGTAGCTTGAGACTGTCTGTGCCGCCAGC
GGTTTTACTTTCTCTCTATGCAATGTCTTGGGTGAGACAAGCACCTGGTAAGGGTTTGGAAATGGGTATCAGCTATTTCCGGTAGTGGTG
GTTTCGACATATTATGCTGACTCCGTTAAAGGTCGTTTTACTATTTCTAGAGACAATTCAAAAATACCTTATATCTTCAAATGAACCTCCCT
TAGAGCTGAGGATACTGCTGTTTACTACTGTGCTCGTGATGCTTGGTTGGATGTGTTGTCTGACGGCTTTGACTACTGGGGACAAGGTACT
TTGGTCACAGTGAGCAGCTGAGGGGCGGCCGCTCAAGAGGATGTCAGAATGCCATTTGCTGAGAGATGCAGGCTTCATTTTTGATACTTT
TTTATTTGTAACCTATATAGTATAGGATTTTTTTGTCAATTTGTTTCTTCTCGTACGAGCTTGCTCCTGATCAGCCTATCTCGCAGCAGA
TGAATATCTTGTGGTAGGGGTTTGGGAAAATCATTGAGTTTGTATGTTTTCTTGGTATTTCCCACTCCTCTTCAAGATACAGAAGATTAA
GTGAAACCTTCGTTTGTGCGGATCCTTCAGTAATGTCTTGTCTTTTGTGTCAGTGGTGAGCCATTTTACTTCGTGAAAGTTTCTTTAG
AATAGTTGTTTCCAGAGGCCAAACATTCACCCGTAGTAAAGTGCAAGCGTAGGAAGACCAAGACTGGCATAAATCAGGTATAAGTGTGCA
GCCTGGCAGGTGATCTTCTGAAAGTTTCTACTAGCAGATAAGATCCAGTAGTCATATGGCAACAATGTACCGTGTGGATCTAAGAA
CGCGTCTACTAACCTTCGATTGTTGGTCCAGTTTGTGTTATCGATCAACGTGACAAGGTTGTGATTCCGCGTAAGCATGCATACCC
AAGGACGCTGTTGCAATTCGAAGTGAGCCAGTTTCAACAATCTTGTAAATATTAGAGCACTTCATTGTGTTGCGCTTGAAGTAAATGC
GAACAATTAAGAGATAATCTGAAACCGGACTTCAACGCCAATATGATGTGCGGCACACAATAAGCGTTCATATCCGCTGGGTGACTT
TCTCGCTTTAAAAAATTATCCGAAAAATTTCTAGAGTGTGTTACTTTATACTTCCGGCTCGTATAATACGACAAGGTGTAAGGAGGAC
TAAACCATGGCTAAACTCACCTCTGCTGTTCCAGTCTGACTGCTCGTGATGTTGCTGGTGTGTTGAGTTCTGGACTGATAGACTCGGTT
TCTCCCGTGACTTCGTAGAGGACGACTTTGCCGGTGTGTACGTGACGACGTTACCTGTTTCATCTCCGCAGTTCAGGACCAGGTTGTGCC
AGACAACACTCTGGCATGGGTATGGGTTCTGGTCTGGACGAACTGTACGCTGAGTGGTCTGAGGTCGTGTACCAACTTCCGTGATGCA
TCTGGTCCAGCTATGACCGAGATCGGTGAACAGCCCTGGGGTCTGAGTTTGCAGTGGTGTATCCAGCTGGTAAGTGCATTTCTGTCG
CAGAAGAGCAGGACTAACAATTGACACCTTACGATTATTAGAGAGTATTATTAGTTTATTGATGTATACGGATGTTTTATTATCTAT
TTATGCCCTTATATTCTGTAACATCCAAAAGTCTATCTTATCAAGCCAGCAATCTATGTCCGGAACGTCAACTAAAAATAAGCTTTTT
ATGCTCTTCTCTTTTTTTCCCTTCGGTATAATTATACCTGTCATCCACAGATTCTCTGCCAAATTTGCATAATCTTTACAACATGG
CTATATGGGAGCACTTAGCGCCC

Fig. 12 A: Deep well plate expression of HSA fused to the LLP-signal sequence

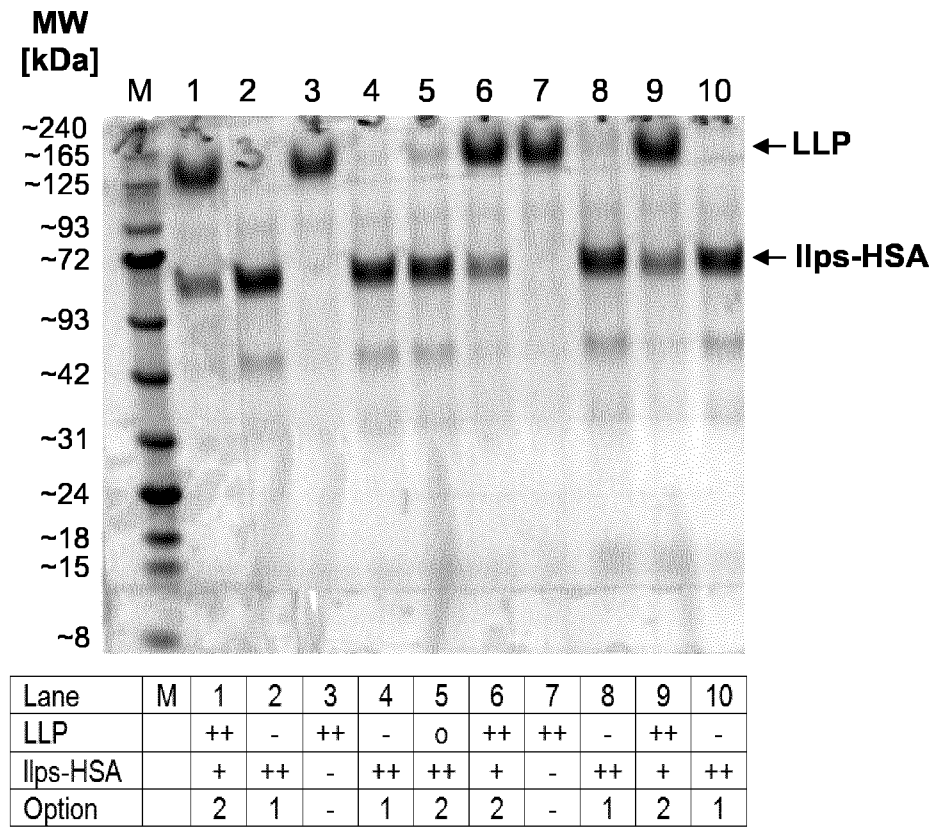


Fig. 12 B: Fermenter expression of HSA fused to the LLP-signal sequence

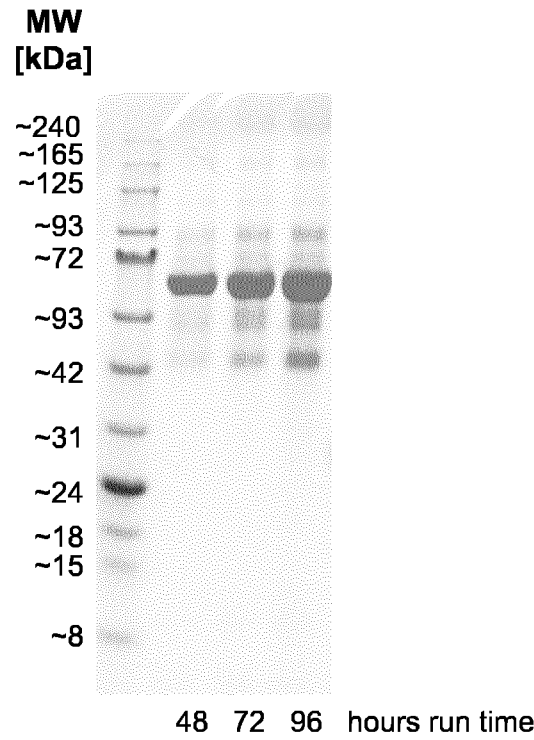


Fig. 13: Truncation-analysis of the LLP-promoter

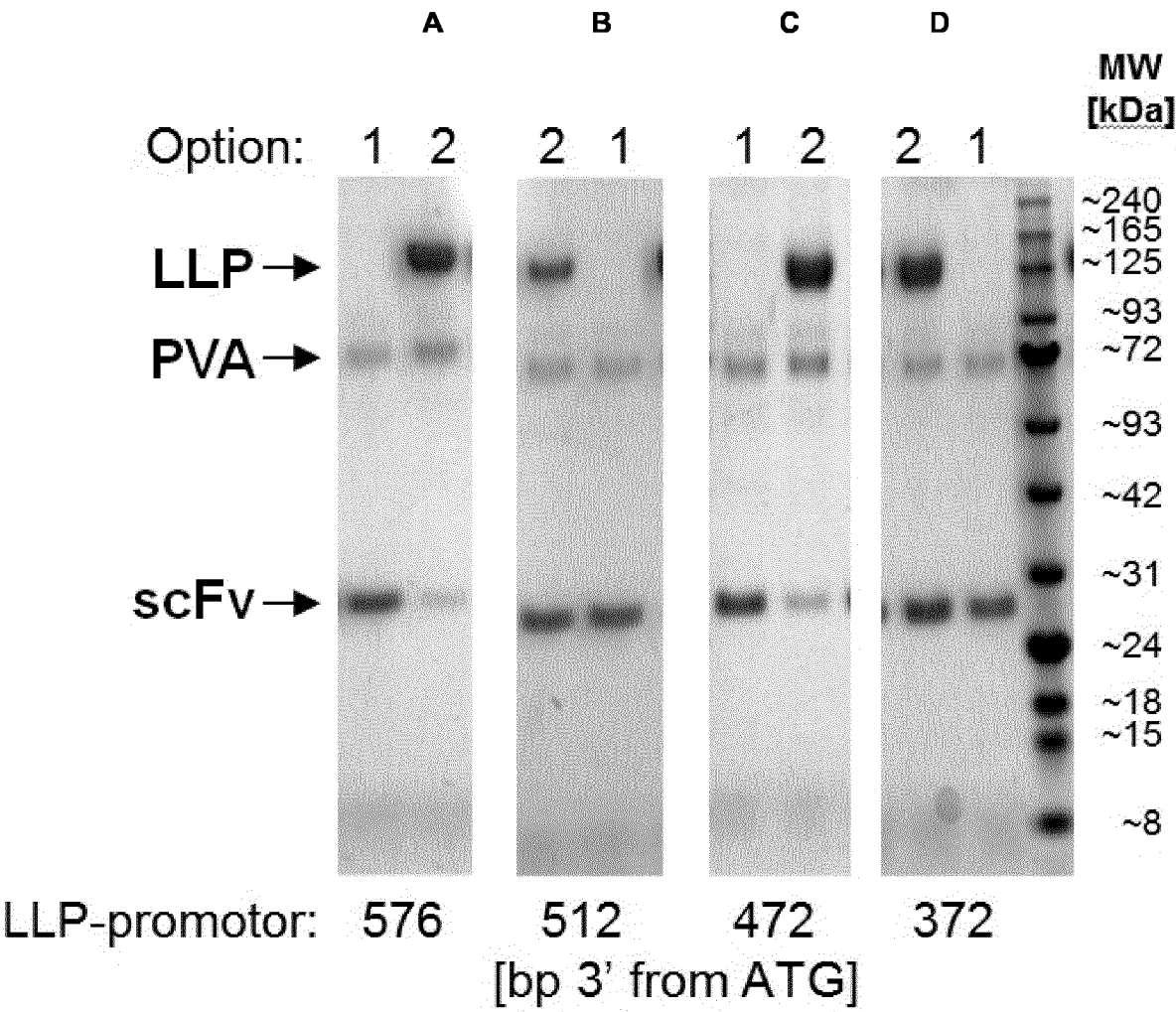


Fig. 14: Sequences *S. cerevisiae* ssn6 and TUP1 (complete coding region)

A. Ssn6-nucleic acid (cyc8 = ssn6): SEQ ID NO: 135

>gi|398364854|ref|NM_001178460.3| *Saccharomyces cerevisiae* S288c
transcription regulator CYC8 (CYC8), partial mRNA

ATGTAATCCGGGCGGTGAACAACAATAATGGAACAACCCCGCTCAACAGCAACAACAACAGCAACAACAACAGCAG
CAACAGCAACAGCAGGCAGCAGTTCCCTCAGCAGCCACTCGACCCATTAAACACAATCAACTGCGGAAACTTTGGCTC
TCCATTGCTTCTTTGGCAGAAACCCTTGGTGATGGCGACAGGGCCGAATGGCATATGACGCCACTTTACAGTTC
AATCCCTCATCTGCAAAGGCTTTAACAATCTTTGGCTCACTTGTACCGTTCCAGAGACATGTTCCAAAGAGCTGCA
GAATTATATGAAAGAGCACTTTTGGTAAATCCCGAACTATCAGATGTGTGGGCTACTTTAGGTCAATTGTTATCTG
ATGCTGGATGATCTGCAAAGAGCTTACAATGCCTATCAACAGGCTCTCTACCACCTCAGTAATCCCAACGTACCG
AAATTATGGCATGGAATCGGCATTCTTTATGACAGATATGGTTCCGTCGACTATGCCGAAGAAGCTTTTGCCAAA
GTTTTTGGAA'TTGGACCC'TCA'TTTT'GAAAAGGCAAACGAAATTTACTT'CAAGACTAGGTATTATTTATAAACATCAG
GG'AAAA'TGG'TC'TCAAGC'TTT'GGAA'TGC'TT'CAGATACATT'TC'CCCT'CAACCT'CC'TGCT'CCCT'TGCAAGGAGT'GGGAC
ATATGG'TTT'CAGTT'GGGTAGT'GTTTT'GGAGAGTAT'GGGAGAGT'GGCAAGGT'GCGAAGGAAGCCTACGAGCATGTC
TTGGCT'CAAAAT'CAACAT'CATGCCAAAGTATTACAACAATTAGGTTGTCTTTACGGTATGAGTAACGTACAATTT
TATGACCC'TCAAAGGCATT'GGATTATCTTCTAAAGTCGTTAGAAGCAGATCCCTCCGATGCCACTACATGGTAC
CATCTCGGTAGAGTGCATATGATTAGAACAGATTATACTGCCGCATATGATGCTTTCCAACAAGCTGTTAATAGA
GATTC'AAGAAACCC'TATCTTTT'GGTGC'TCAATCGGTGTTTTATATTTACCAAAATTTCTCAATACAGAGACGCCCTTA
GACGCGTACACAAGAGCCATAAGATTAATCCCTTATATTAGTGAAGTTTGGTACGATCTAGGTACTCTTTACGAA
ACTTGTAAACAACCAATTATCTGACGCCCCTTGATGCGTATAAGCAAGCTGCAAGACTGGCAGCTAAATAATGTTAC
ATAAGAAAGAAATAGAAAGCTTTTAACAACAAGCAGTTAGAAAAACCCAGGCAATAATAACAATAATCGAAGCGTGCGCCA
ACGAATGCC'TC'TCC'TGCCCCACC'TCC'TGTGATTTTACAACCTACC'TTCAACCTTAATGATCAAGGAAATCCTTTG
AACAC'TAGAA'TTT'CAAGCCCAATCT'GCCAA'TGC'TACTGCTTCAATGGTACAACAACAGCATCCTGCTCAACAAACG
CCTATTTAACTCTTCTGCAACAAATGTACAGTAATGGAGCTTCCCCCTCAATTACAAGCTCAAGCTCAAGCTCAAGCT
CAAGCACAAAGCTCAAGCACAAAGCACAAAGCTCAAGCACAAAGCACAAAGCACAAAGCGCAAGCACAAAGCACAAAGCACAG
GCGCAAGCACAGGCACAAGCACAAAGCACAAAGCACATGCACAAGCGCAAGCACAAAGCACAAAGCACAGGCACAAGCA
CAAGCACAGGCGCAGGCACAACAACAACAACAACAACAAGCAACAACAACAACAACAACAACAACAACAACAACAACA
CAACAACAACAACAACAACAACAACAACAAGCAGCAGCAATTTACAGCCCCTACCAAGACAACAGCTGCAGCAAAAAGCGA
GTTTCTGTGCAAAATGTTAAATCCTCAACAAGGGCAACCATATATCACACAGCCAACAGTCATACAAGCTCACCAA
CTGCAACCATTTTCTACACAAGCTATGGAACATCCGCAAAGCTCTCAACTGCCACCTCAACAGCAACAACACTACAA
TCTGTTTCAACATCCACAACAACCTTCAAGGCCAGCC'TCAAGGCCAAGCT'CCCCAACCTTTTAA'TCCAGCATAAAGCTC
GAACAGAAGCTTTTACC'TCAAAAGAGATACAT'GGAAGGTGCAATCCACACTTTAGTAGATGCCGCCGTATCCAGT
AGCACCCACACAGAGAA'PAACACAAAGTCT'CC'TCGTCAACCAACCCATGCCATTTCCAACGCAAGCTCCCGCAACA
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TCTAAAGAGGAAAAACGGCACAACCTGAAGCATCTGCACCTTCTACTGAAGAGGCGGAGCCAGCCAGCTTCCAGAGAT
GCTGAAAAAACAAAGAATGAAACCCTGCT'ACAACCAATTAAGTGTAA'TCAAACCT'ACTTTT'GGAACCAATGGAAACA
GTGAAAGAGGAGGCCAAAA'TGCGT'GAGGAAGAGCAAACTCT'CAAGAAAAAT'CCCCACAGGAGAACACACTTCCA
AGAGAAAAATGTAGTAAGGCAAGT'GGAAGAAGATGAAAACTACGACGACTAA

B. SSN6-Protein (SEQ ID NO: 137)

>NP_009670.3 SSN6 *Saccharomyces cerevisiae*

MNPGGEQTIMEQPAQQQQQQQQQQQQQQQQQAAVPPQQPLDPLTQSTAETWLSIASLAETLGDGDRAMAYDATLQF
 NPSSAKALTSLAHLYSRDMFQRAAELYERALLVNPELSDVWATLGHGCHYMLDDLQRAYNAYQQALYHLSNPNVF
 KLWHGIGIGILYDRYGSLDYAEFAKVLLEDPHFEEKANEIYFRLGITIIYKHGQKWSQALECFRYILPQPPAPLQEW
 IWFQLGSLVLESMGEWQGAKEAYEHVLAQNQHAKVLQQIGCLYGMSNVQFYDPOKALDYLLKSLEADPSDATTWY
 HLGRVHMIRTDYTAAYDAFQQAVNRDSRNPFWCSIGVLYYQISQYRDALDAYTRAIRLNPYISEVWYDLGTLYE
 TCNNQLSDALDAYKQAARLDVNNVHIRERLEALTKQLENPGNINKSNGAPTNASAPPPVILQPTLQPNDCGNPL
 NTRISAQSANATASMVQQQHPAQQTPINSSATMYSNGASPOLQAQAQAQAQAQAQAQAQAQAQAQAQAQAQAQAQA
 AQAQAQAQAQAHAQA
 VSVQMLNPQQGGPYITQPTVIAHQHLQPFSTQAMEHPQSSQLPPQQQQLQSGVQHPQQQLQGVQQAQAQAQAQAQA
 EQNVLPQKRYMEGAHTLVDAVSSSTHTENNTKSPPQTHAIPTQQAPATGITHAEPIQVKKQLNSPNSINKLV
 NTATSIENAKSEVNSNSPAVVESNTNNTSOEEKPKVANSIPSVIGAOEPPQFASPAEEATKAASVSPSTKPLNT

EPSSSVQPTVSSESSTTKANDQSTAETIELSTATVPAEASPVEDEVQRHSKEENGTEASAPSTEEAEPAASRD
AEKQQDETAATTITVIKPTLETMETVKEEAKMREEEQTSQEKSPQENTLPRENVVRQVEEDENYDD

C. Tup1-nucleic acid (SEQ ID NO: 136)

>gb|M35861.1|YSCAER2:247-2388 *S.cerevisiae* heme-regulated and catabolite repressed genes repressor (TUP1) gene, complete cds

ATGACTGCCAGCGTTTTCGAATACGCAGAATAAGCTGAATGAGCTTCTCGATGCCATCAGACAGGAGTTTCTCCAA
GTCTCACAAGAGGCCAAATACCTACCGTCTTCAAAACCAAAAGGATTACGATTTCAAAATGAACCAGCAGCTGGCT
GAGATGCAGCAGATAAGAAACACCGTCTACGAACTGGAACCTAACTCACAGGAAAAATGAAGGACGCGTACGAAGAA
GAGATCAAGCACTTGAAACTAGGGCTGGAGCAAAGAGACCATCAAAATGTCATCTTTGACCGTCCAGCAACAGCGG
CAACAGCAACAGCAGCAACAGGTCCAGCAGCATTTACAACAGCAACAGCAGCAGCTAGCCGCTGCATCTGCATCT
GTTCCAGTTGCGCAACAACACCGGCTACTACTTCGGCCACCGCCACTCCAGCAGCAAAACACAACCTACTGGTTCCG
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GTGTCTCTCAAACGCCCAACAACAACCTACCACAACAGCAACTGCAACAGCAGCAACTTCAACAACAGCAACCACCT
CCCCAGGTTTCCGTGGCACCATTGAGTAACACAGCCATCAACGGATCTCCTACTTCTAAAGAGACCACTACTTTA
CCCTCTGTCAAGGCACCTGAATCTACGTTGAAAGAAACTGAACCGGAAAAATAATAACCTCGAAGATAAATGAC
ACCGGATCCGCCACCACGGCCACCCTACCACCGCAACTGAAACTGAAATCAAACCTAAGGAGGAAGACGCCACC
CCGGCTAGTTTGCACCAGGATCACTACTTAGTCCCTTATAATCAAAGAGCAAAACCACTCTAAACCTATCCCACCT
TTCCTTTTGGATCTAGATTCCCAGTCTGTTCCCGATGCTCTGAAGAAGCAAAACAAATGATTATTATATTTTATAC
AACCCGGCACTACCAAGAGAAATTTGACGTTGAGTTACACAAATCTTTGGATCATACTTCAGTTGTTTGTGCGTG
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ACGTCACCGGATAACAATACAATGACAACCACTACTACCACCACAATTACTACCACAGCGATGACTTCGGCAGCA
GAATTGGCAAAAGATGTGGAACCTGAACACTTCGCTTTCCCATCATCCGACTTGTATATCCGTTTCACTGTGT
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GAAGATGGTGTACCACCGTCCGCTGTATCACCAGGTGATGGTAAATACATCGCTGCTGGTTCTCTAGATCGTGCT
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TATATCGGGCATAAAGACTTTGTATTGTCCGTGGCCACCACACAAAATGATGAGTACATCTTGTCCGGTTCCAAA
GATCGTGGTGTCTGTTTTGGGATAAGAAATCCGGCAATCCGTTATTGATGTTGCAAGGTCATAGGAATTCAGTT
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D. Tup1-Protein (SEQ ID NO: 138)

MTASVSNTQNKLNELLDAIRQEFLOVSQEANTYRLQNQKDYDFKMNQQLAEMQQIRNTVYELELTHRKMKDAYEE
EIKHLKLGLEQRDHQIASLTVQQQRQQQQQQVQQLHQQQQQQLAAASASVPVAQQPPATTSATATPAANTTTGS
PSAFPVQASRPNLVGSQLPTTTTLPVVSSNAQQQLPQQQLQQQQLQQQPPPVSVAPLSNTAINGSPSTKETTTTL
PSVKAPESTLKETEPENNNTSKINDTGSATTATTTTATETEIKPKEEDATPASLHQDHYLVYPYNQRANHSKPIPP
FLDLDSQSVPDALKKQTNDDYIILYNPALPREIDVELHKS LDHTSVVCCVKFSNDGEYLATGCNKTTQVYRVSDG
SLVARLSDDSAANNHRNSITENNTTSTDNNTMTTTTTTTTTITTTAMTSAAELAKDVENLNTSSSPSSDLYIRSVC
FSPDGKFLATGAEDRLIRIWDIENRKIVMILQGHEQDIYSLDYFSPGDKLVSGSGDRVTIRIWDLRQCQSLTSLI
EDGVTTTAVSPGDGKYIAAGSLDRAVRVWDSETGFLVERLDSENESGTGHKDSVYSVVFTRDGQSVVSGSLDRSV
KLWNLQNANNKSDSKTPNSGTCEVTYIGHKDFVLSVATTQNDYIILSGSKDRGVLFWDKKSGNPLMLLQGHRNSV
ISVAVANGSPLGPEYNVFATGSGDCKARIWKYKKIAPN