Claims

1. A perfect palindrome operator sequence-based protein expression system comprising:
a) a promoter; and
b) a perfect palindrome operator sequence;
characterised in that the promoter is not T7.

2. A protein expression system according to claim 1, comprising:
a) a yeast promoter; and
b) a perfect palindrome operator sequence.

3. A plasmid comprising:
a) a promoter; and
b) a perfect palindrome operator sequence;
characterised in that the promoter is not T7.

4. A plasmid according to claim 3, comprising:
a) a yeast promoter; and
b) a perfect palindrome operator sequence.

5. A plasmid according to claim 4, further comprising an expression cassette for a protein.

6. A plasmid according to claim 4 or claim 5, wherein the plasmid is an autonomously replicating plasmid.

7. A plasmid according to claim 4 or claim 5, wherein the plasmid is an integrative plasmid.

8. A yeast host cell transformed by a plasmid as claimed in any one of claims 3 to 7.

9. A host cell according to claim 8, wherein the host cell is *Pichia pastoris Saccharomyces cerevisiae, Hansenula polymorpha, Kluyveromyces lactis or Schizosaccharomyces pombe*.

10. A method for the production of a protein which comprises expressing an expression system comprising
a) a promoter;
b) a perfect palindrome operator sequence; and
c) an expression cassette for a protein;
characterised in that the promoter is not T7.

11. A method according to claim 10 for the production of a recombinant protein which comprises expressing an expression system comprising:
a) a yeast promoter; and
b) a perfect palindrome operator sequence; and
c) an expression cassette for a recombinant proteins.

12. An expression system, plasmid, host cell or method according to any of claims 1 to 11, wherein the operator sequence is lac, gal, deo or gln.

13. An expression system, plasmid, host cell or method according to any of claims 1 to 12, wherein two perfect palindrome operator sequences are employed, preferably one operator sequence being located downstream of the promoter, and one operator sequence being located upstream of the promoter.

14. An expression system, plasmid, host cell or method according to claim 13, wherein the operator sequences are spaced from 85 to 150 base pairs apart.

15. An expression system, plasmid, host cell or method according to claim 14, wherein the operator sequences are spaced from 90 to 126 base pairs apart.

16. An expression system, plasmid, host cell or method according to claim 15, wherein the operator sequences are spaced 91 or 92 base pairs apart.

17. A method for producing a protein, which comprises:
a) culturing a host cell transformed with a plasmid according to claim 4; and
b) recovering the protein.

18. A method according to claim 17, wherein the host cell is *Pichia pastoris Saccharomyces cerevisiae, Hansenula polymorpha, Kluyveromyces lactis or Schizosaccharomyces pombe.*

19. A method according to either of claims 17 and 18, wherein the plasmid is a plasmid as claimed in any one of claims 3 to 16.

Claims

1. A protein expression system comprising:
   a) a T7A3 promoter operably linked to
   b) a perfect palindrome operator sequence.

2. A vector comprising:
   a) a T7A3 promoter operably linked to
   b) a perfect palindrome operator sequence.

3. A vector according to claim 2, further comprising an expression cassette for a protein.

4. A vector according to either of claims 2 or 3, wherein the vector is a plasmid, preferably an autonomously replicating plasmid.

5. A host cell transformed by a vector as claimed in any one of claims 2 to 4.

6. A method for the production of a recombinant protein which comprises expressing an expression system comprising:
   a) a T7A3 promoter; operably linked to
   b) a perfect palindrome operator sequence; and operably linked to
   c) an expression cassette for a recombinant proteins.

7. An expression system, vector, host cell or method according to any of claims 1 to 6, wherein the operator system is lac, gal, deo or gln.

8. An expression system, vector, host cell or method according to any of claims 1 to 7, wherein a single perfect palindrome operator sequences is employed, preferably being located downstream of the promoter.

9. An expression system, vector, host cell or method according to any of claims 1 to 8, wherein the operator has the sequence GGAATTGTGAGCGCTCACAATTCC (nucleobases 51 to 74 of SEQ ID No. 3).

10. An expression system, vector, host cell or method according to any of claims 1 to 9, wherein an operator overlaps the transcriptional start point.

11. A method for producing a protein, which comprises:
    a) culturing a host cell transformed with a vector according to claim 3; and
    b) recovering the protein.

12. A method according to claim 11, wherein the host cell is *E. coli*.

13. A method according to either of claims 11 or 12, wherein the vector is a vector as claimed in any one of claims 7 to 10.

14. A method according to any of claims 11 to 13, wherein an operator overlaps the transcriptional start point.