CLAIMS

1. A yeast cell of the *Komagataella* genus comprising an orthologous promoter of a methylotrophic yeast cell or a variant thereof inducible by derepression, in which the orthologous promoter is an orthologous formate dehydrogenase (FMD) promoter of a methylotrophic yeast cell comprising nucleic acid sequence SEQ ID NO: 1 and the variant thereof comprising nucleic acid sequence SEQ ID NO: 27:

AATGTATCTAAACGCAAACTCCGAGCTGGAAAAATGTTACCGGCGATGCGC
GGACAATTTAGAGGCGGCGAX$_1$TCAAGAAACACCTGCTGGGCGAGCAGTCT
GGAGCACAGTCTTCGATGGGCCCGAGATCCCACCGCGTTCCTGGGTACCGG
GACGTGAGGCAGCGCGACATCCATCAAATATACCAGGCGCCAACCGAGTCT
CTCGGAAAACAGCTTCTGGATATCTTCCGCTGGCGGCGCAACGACGAATAAT
AGTCCCTGGAGGTGACGGAATATATATGTGTGGAGGGTAAATCTGACAGGG
TGTAGCAAAGGTAATATTTTCCTAAAACATGCAATCGGCTGCCCCGCX$_2$ACG
GGAAAAAGAATGACTTTGGCACTCTTCACCAGAGTGGGGTGTCCCGCTCGTG
TGTGCAAATAGGCTCCCACTGGTCACCCCGGATTTTGCAGAAAAAX$_3$AGCAA
GTTCCGGGGTGTCTCACTGGTGTCCGCCAATAAGAGGAGCCGGCAGGCACG
GAGTCTACATCAAGCTGTCTCCGATACACTCGACTACCAX$_4$CCGGGTCTCTCX
$_5$X$_6$X$_7$X$_8$X$_9$X$_{10}$X$_{11}$X$_{12}$X$_{13}$X$_{14}$X$_{15}$X$_{16}$X$_{17}$X$_{18}$CACX$_{19}$,

in which X$_1$ is adenine or no nucleotide, X$_2$ is adenine or guanine, X$_3$ is cytosine or thymine, X$_4$ is thymine or guanine, X$_5$ is adenine or cytosine, X$_6$ is guanine or cytosine, X$_7$ is adenine or cytosine, X$_8$ is guanine or cytosine, X$_9$ is adenine, guanine or cytosine, X$_{10}$ is guanine or cytosine, X$_{11}$ is guanine or cytosine, X$_{12}$ is guanine or cytosine, X$_{13}$ is guanine or cytosine, X$_{14}$ is adenine or cytosine, X$_{15}$ is adenine or cytosine, X$_{16}$ is thymine or cytosine, X$_{17}$ is guanine or cytosine, X$_{18}$ is guanine or cytosine, X$_{19}$ is a nucleic acid sequence selected from the group consisting of TATAAATACCGCCTCCTTGCGCTCTCTGCCTTCATCAATCAAATC (SEQ ID NO: 28), TATATAAACTGGTGATAATTCCTTCGTTCTGAGTTCCATCTCATACTCAAACT A-TATTAAAACTACAACA (SEQ ID NO: 29), TATAAATACAAGACGAG-TGCGTCCTTTTCTAGACTCACCCATAAACAAATAATCAATAAAT (SEQ ID NO: 30) and TATAAATACTGCCTACTTGTCCTCTATTCCTTCATCAATCACATC (SEQ ID NO: 31); and

in which the promoter is capable of controlling the expression of a heterologous polypeptide.

2. A yeast cell according to Claim 1, in which the orthologous promoter is inducible with methanol.

3. A yeast cell according to Claim 1 or 2, in which the orthologous promoter is operably linked to a nucleic acid molecule coding for a heterologous or homologous polypeptide.

4. A yeast cell according to Claim 3, in which the heterologous or homologous polypeptide comprises a signal peptide, in particular a secretion signal peptide.

5. A yeast cell according to any preceding claim, in which the orthologous promoter originates from a methylotrophic yeast cell selected from the group consisting of the genera *Hansenula*, *Candida*, *Komagataella* and *Pichia*.

6. A yeast cell according to any preceding claim, in which the methylotrophic yeast cell is selected from the group consisting of *Hansenula polymorpha, Candida boidinii*, *Pichia methanolica, Komagataella pastoris, Komagataella phaffii, Komagataella populi, Komagataella pseudopastoris, Komagataella ulmi* and *Komagataella* sp. 11-1192.

7. A yeast cell according to any preceding claim, in which the orthologous promoter and optionally the nucleic acid molecule coding for the heterologous or homologous polypeptide in the genome and also operably linked to the promoter is optionally present in the genome or as an extrachromosomal nucleic acid construct.

8. A yeast cell according to any preceding claim, in which the variant comprises a nucleic acid sequence selected from the group consisting of SEQ ID NO: 35, SEQ ID NO: 36, SEQ ID NO: 37, SEQ ID NO: 38, SEQ ID NO: 39, SEQ ID NO: 40, SEQ ID NO: 41, SEQ ID NO: 42, SEQ ID NO: 43, SEQ ID NO: 44, SEQ ID NO: 45, SEQ ID NO: 46, SEQ ID NO: 47, SEQ ID NO: 48, SEQ ID NO: 49, SEQ ID NO: 50, SEQ ID NO: 51, SEQ ID NO: 52, SEQ ID NO: 53, SEQ ID NO: 54, SEQ ID NO: 55 and SEQ ID NO: 56, preferably selected from the group consisting of SEQ ID NO: 35, SEQ ID NO: 37, SEQ ID NO: 39, SEQ ID NO: 40, SEQ ID NO: 44, SEQ ID NO: 51, SEQ ID NO: 52, SEQ ID NO: 54, SEQ ID NO: 55 and SEQ ID NO: 56, more preferably selected from the group consisting of SEQ ID NO: 35, SEQ ID NO: 39, SEQ ID NO: 44, SEQ ID NO: 51, SEQ ID NO: 52, SEQ ID NO: 54, SEQ ID NO: 55 and SEQ ID NO: 56.

9. A method for producing a heterologous polypeptide comprising the step of culturing a yeast cell according to any preceding claim.

10. A method according to Claim 9, in which during the culturing the expression of the heterologous polypeptide is induced or its expression rate is increased by derepressing conditions.

11. A method according to Claim 9, in which during the culturing under derepressing conditions, methanol is added.

CLAIMS

1. A yeast cell of the *Komagataella* genus comprising an orthologous promoter of a methylotrophic yeast cell or a variant thereof inducible by derepression, in which the orthologous promoter is an orthologous formate dehydrogenase (FMD) promoter of a methylotrophic yeast cell comprising nucleic acid sequence SEQ ID NO: 1 and the variant thereof comprising nucleic acid sequence SEQ ID NO: 27:

AATGTATCTAAACGCAAACTCCGAGCTGGAAAAATGTTACCGGCGATGCGC
GGACAATTTAGAGGCGGCGAX$_1$TCAAGAAACACCTGCTGGGCGAGCAGTCT
GGAGCACAGTCTTCGATGGGCCCGAGATCCCACCGCGTTCCTGGGTACCGG
GACGTGAGGCAGCGCGACATCCATCAAATATACCAGGCGCCAACCGAGTCT
CTCGGAAAACAGCTTCTGGATATCTTCCGCTGGCGGCGCAACGACGAATAAT
AGTCCCTGGAGGTGACGGAATATATATGTGTGGAGGGTAAATCTGACAGGG
TGTAGCAAAGGTAATATTTTCCTAAAACATGCAATCGGCTGCCCCGCX$_2$ACG
GGAAAAAGAATGACTTTGGCACTCTTCACCAGAGTGGGGTGTCCCGCTCGTG
TGTGCAAATAGGCTCCCACTGGTCACCCCGGATTTTGCAGAAAAAX$_3$AGCAA
GTTCCGGGGTGTCTCACTGGTGTCCGCCAATAAGAGGAGCCGGCAGGCACG
GAGTCTACATCAAGCTGTCTCCGATACACTCGACTACCAX$_4$CCGGGTCTCTCX
$_5$X$_6$X$_7$X$_8$X$_9$X$_{10}$X$_{11}$X$_{12}$X$_{13}$X$_{14}$X$_{15}$X$_{16}$X$_{17}$X$_{18}$CACX$_{19}$,

in which X$_1$ is adenine or no nucleotide, X$_2$ is adenine or guanine, X$_3$ is cytosine or thymine, X$_4$ is thymine or guanine, X$_5$ is adenine or cytosine, X$_6$ is guanine or cytosine, X$_7$ is adenine or cytosine, X$_8$ is guanine or cytosine, X$_9$ is adenine, guanine or cytosine, X$_{10}$ is guanine or cytosine, X$_{11}$ is guanine or cytosine, X$_{12}$ is guanine or cytosine, X$_{13}$ is guanine or cytosine, X$_{14}$ is adenine or cytosine, X$_{15}$ is adenine or cytosine, X$_{16}$ is thymine or cytosine, X$_{17}$ is guanine or cytosine, X$_{18}$ is guanine or cytosine, X$_{19}$ is a nucleic acid sequence selected from the group consisting of TATAAATACCGCCTCCTTGCGCTCTCTGCCTTCATCAATCAAATC (SEQ ID NO: 28), TATATAAACTGGTGATAATTCCTTCGTTCTGAGTTCCATCTCATACTCAAACT A-TATTAAAACTACAACA (SEQ ID NO: 29), TATAAATACAAGACGAG-TGCGTCCTTTTCTAGACTCACCCATAAACAAATAATCAATAAAT (SEQ ID NO: 30) and TATAAATACTGCCTACTTGTCCTCTATTCCTTCATCAATCACATC (SEQ ID NO: 31); and

in which the orthologous promoter is operably linked to a nucleic acid molecule coding for a heterologous or homologous polypeptide.

2. A yeast cell according to Claim 1, in which the orthologous promoter is inducible with methanol.

3. A yeast cell according to Claim 1, in which the heterologous or homologous polypeptide comprises a signal peptide, in particular a secretion signal peptide.

4. A yeast cell according to Claim 1, 2 or 3, in which the orthologous promoter originates from a methylotrophic yeast cell selected from the group consisting of the genera *Hansenula*, *Candida*, *Komagataella* and *Pichia*.

5. A yeast cell according to any preceding claim, in which the methylotrophic yeast cell is selected from the group consisting of *Hansenula polymorpha, Candida boidinii*, *Pichia methanolica, Komagataella pastoris, Komagataella phaffii, Komagataella populi, Komagataella pseudopastoris, Komagataella ulmi* and *Komagataella* sp. 11-1192.

6. A yeast cell according to any preceding claim, in which the orthologous promoter and optionally the nucleic acid molecule coding for the heterologous or homologous polypeptide in the genome and also operably linked to the promoter is optionally present in the genome or as an extrachromosomal nucleic acid construct.

7. A yeast cell according to any preceding claim, in which the variant comprises a nucleic acid sequence selected from the group consisting of SEQ ID NO: 35, SEQ ID NO: 36, SEQ ID NO: 37, SEQ ID NO: 38, SEQ ID NO: 39, SEQ ID NO: 40, SEQ ID NO: 41, SEQ ID NO: 42, SEQ ID NO: 43, SEQ ID NO: 44, SEQ ID NO: 45, SEQ ID NO: 46, SEQ ID NO: 47, SEQ ID NO: 48, SEQ ID NO: 49, SEQ ID NO: 50, SEQ ID NO: 51, SEQ ID NO: 52, SEQ ID NO: 53, SEQ ID NO: 54, SEQ ID NO: 55 and SEQ ID NO: 56, preferably selected from the group consisting of SEQ ID NO: 35, SEQ ID NO: 37, SEQ ID NO: 39, SEQ ID NO: 40, SEQ ID NO: 44, SEQ ID NO: 51, SEQ ID NO: 52, SEQ ID NO: 54, SEQ ID NO: 55 and SEQ ID NO: 56, more preferably selected from the group consisting of SEQ ID NO: 35, SEQ ID NO: 39, SEQ ID NO: 44, SEQ ID NO: 51, SEQ ID NO: 52, SEQ ID NO: 54, SEQ ID NO: 55 and SEQ ID NO: 56.

8. A method for producing a heterologous polypeptide comprising the step of culturing a yeast cell according to any preceding claim.

9. A method according to Claim 8, in which during the culturing the expression of the heterologous polypeptide is induced or its expression rate is increased by derepressing conditions.

10. A method according to Claim 8, in which during the culturing under derepressing conditions, methanol is added.