Yeast-based high-throughput screens to identify novel compounds active against *Brugia malayi*

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# 1. Synthetic Genes with codon usage optimized for expression in *Saccharomyces cerevisiae*

Synthetic coding region of each gene flanked by *BamHI* and *PstI* restriction sites (highlighted in yellow).

## Synthetic *HsMVD*

GGATCCATGGCTTCTGAAAAACCATTG

GCTGCTGTTACTTGTACTGCTCCAGTTAATATTGCCGTTATTAAGTACTGGGGTAAGAGAGATGAAGAATTGGTTTTGC

CAATCAACTCCTCTTTGTCTGTTACCTTGCATCAAGACCAATTGAAAACTACTACCACCGCCGTTATTTCTAAGGATTT

CACCGAAGATAGAATCTGGTTGAACGGTAGAGAAGAAGATGTTGGTCAACCTAGATTGCAAGCCTGTTTGAGAGAAATT

AGATGCTTGGCTAGAAAGAGAAGAAACTCCAGAGATGGTGATCCATTGCCATCTTCATTGTCTTGTAAAGTTCATGTTG

CCTCCGTCAACAATTTTCCAACTGCTGCTGGTTTGGCTTCTTCAGCAGCTGGTTATGCTTGTTTAGCTTATACTTTGGC

TAGAGTCTACGGTGTTGAATCCGATTTGTCTGAAGTTGCTAGAAGAGGTTCTGGTTCAGCTTGTAGATCATTATACGGT

GGTTTTGTCGAATGGCAAATGGGTGAACAAGCTGATGGTAAAGATTCCATTGCTAGACAAGTTGCTCCAGAATCTCATT

GGCCAGAATTGAGAGTTTTGATTTTGGTTGTTTCCGCCGAAAAGAAGTTGACTGGTTCTACTGTTGGTATGAGAGCTTC

TGTTGAAACATCTCCTTTGTTGAGATTCAGAGCCGAATCTGTTGTTCCAGCTAGAATGGCTGAAATGGCTAGATGTATT

AGAGAAAGAGACTTCCCATCTTTCGCTCAATTGACTATGAAGGACTCCAATCAATTCCATGCTACTTGTTTGGATACCT

TCCCACCAATTTCTTACTTGAACGCTATTTCTTGGAGAATCATCCATTTGGTCCATAGATTCAATGCTCATCATGGTGA

TACCAAGGTTGCTTACACTTTTGATGCTGGTCCAAACGCTGTTATTTTCACTTTGGATGATACCGTTGCTGAATTTGTT

GCAGCTGTTTGGCATGGTTTTCCACCAGGTTCTAACGGTGATACTTTTTTGAAGGGTTTACAAGTTAGACCAGCTCCAT

TGTCTGCTGAATTGCAAGCTGCTTTAGCTATGGAACCTACTCCAGGTGGTGTTAAGTATATTATCGTTACTCAAGTTGG

TCCAGGTCCACAAATTTTAGATGATCCATGTGCTCATTTGTTGGGTCCAGATGGTTTGCCAAAACCTGCTGCTTAATGA

CTGCAG

## Synthetic *BmMVD*

GGATCCATGTCTAGTAACGATGGTTCTTCTGAT

AGAGTCAGAGAAGTTAAGGTTATTGCCCCAATCAATATCGCCTTGGTTAAGTATTGGGGTAAGAGAAACGAAGATTTGA

TGTTGCCATTGAACGATTCCATTTCTTTGTCCATCAACGATATGTGTGCTAAGACCAGAGTTAGAATTGGTGCTTCTGT

TAAGAAGGACTCCGTTTCTATTAACGGTTCTAACGTCTGCTTGTCTAAACATCCAGGTTTCTTGAGATGCTTCAAAGAA

GTCAGAAGATTGATCAGAAAGAGATCCATCATTTCTGAAACCGCTGGTAAATCCGAAAAGCACGATTACTTTTCCAAGT

TCGAAGTCGTCAGTGAAACTAACTTTCCAATTGAAGCTGGTTTGGCTTCTTCTGCTGCTGGTTTTGCTGCTATTGCTTA

TGGTTTGGGTCAAATCTACCAATTGAACATCTCCGATATTATCAGAGTTGCCAGAATGGGTAAACATGCTGTTGCTATC

GTTATCTTGAAGTGCTCTCAAAACGAATTGAGATTGGACAACTATTCCGGTTCTGGTTCTGCTTGTAGATCTATTTTGT

CTGGTTTGGTTCATTGGAAAGCTGGTACTGCTGAAGATGGTACTGATTGCATTTGTGAAACTGTTTTCCCAGAAGATTA

CTGGCCAACTTTGAGATCCTTGATTTTGGTTACTTCCCACGGTACTAAGAAAGTCTCTTCTTCTAATGGTATGCAATCC

ACCGTTAAGACCTCTAAGTTGTTGCAAGCTAGAATGGATATTGTCCCAGAACAAATCACCAAGTTGAGAAACGCTTTCA

GAGACAGAAACTTCGAACAATTGGCCAAGGTTATCATGTCTGATTCTGGTCAATTGCATGCTTTGTGTATGGATACAAT

GCCATCCTTGAGATACTTGAACGATAACTCTTGGTACTTGATGCAATTGATCCATGCTTTGAACAGACATTGCAAGGAT

ACAAAGGTTGCTTACACTTTTGATGCTGGTCCAAACTGTTGTTTGTTCTTGGAATCTGTTAACGTCCCATTGATATTGG

CTGCTGTTAACAAATACTGCAAATTGAGATCCGACTTGATTGAAAGAGTTGCTAAATACCCAGCTGCTTTCGAATACGG

TAATTTGAGATCTTTGGTTGAAGAAGAACAAAAGAACTTGGTCTTGTTCGAATCCATTGACGGTCAAGAAAACTCCGAA

ATTGAACCATTGGATGGTGTTGTTAACGACATCTTCTTTTCTTGTGTTGGTGTTGGTCCATTCTTGGCTGAATCTAGAT

AATGACTGCAG

## Synthetic *HsKRS1*

GGATCCATGTTGACTCAAGCTGCTGTTAGATTG

GTTAGAGGTTCTTTGAGAAAAACCTCTTGGGCTGAATGGGGTCATAGAGAATTGAGATTGGGTCAATTGGCTCCTTTTA

CTGCTCCACATAAGGATAAGTCTTTCTCAGACCAAAGATCTGAATTGAAGAGAAGATTGAAGGCCGAAAAGAAGGTTGC

TGAAAAAGAAGCCAAGCAAAAAGAATTGTCCGAAAAGCAATTGTCTCAAGCTACTGCTGCTGCTACTAATCATACAACT

GATAATGGTGTTGGTCCAGAAGAAGAATCCGTTGACCCAAATCAATATTACAAGATCAGATCCCAAGCCATCCACCAAT

TGAAAGTTAATGGTGAAGATCCATACCCACACAAGTTCCACGTTGATATTTCTTTGACCGACTTCATCCAAAAGTACTC

TCACTTGCAACCAGGTGATCATTTGACTGATATTACCTTGAAAGTTGCCGGTAGAATCCATGCTAAAAGAGCTTCAGGT

GGTAAGTTGATCTTCTACGATTTGAGAGGTGAAGGTGTTAAGTTGCAAGTTATGGCTAACTCCAGAAACTACAAGTCTG

AAGAAGAATTTATCCACATCAACAACAAGTTGAGAAGAGGTGATATCATCGGTGTACAAGGTAATCCAGGTAAAACTAA

GAAGGGTGAATTGTCCATTATCCCATACGAAATCACTTTGTTGTCTCCATGCTTGCATATGTTGCCACACTTGCATTTT

GGTTTGAAGGACAAAGAAACCAGATACAGACAAAGATACTTGGACTTGATCTTGAACGACTTCGTCAGACAAAAGTTCA

TCATCAGATCCAAGATCATCACCTACATTAGATCTTTCTTGGACGAATTGGGTTTCTTGGAAATTGAAACCCCAATGAT

GAACATCATTCCAGGTGGTGCTGTTGCTAAACCATTCATTACTTACCACAACGAATTGGACATGAACTTGTACATGAGA

ATCGCCCCAGAATTATACCACAAGATGTTGGTTGTTGGTGGTATCGATAGAGTTTACGAAATCGGTAGACAATTCAGAA

ACGAAGGTATCGATTTGACCCACAACCCAGAATTTACTACCTGCGAATTTTACATGGCTTACGCCGATTATCACGACTT

GATGGAAATTACCGAAAAGATGGTATCCGGTATGGTTAAGCACATTACTGGTTCTTACAAGGTTACCTATCATCCAGAT

GGTCCTGAAGGTCAAGCCTATGATGTTGATTTTACTCCACCTTTTAGAAGAATCAACATGGTTGAAGAATTGGAAAAGG

CCTTGGGTATGAAGTTGCCAGAAACAAACTTGTTCGAAACCGAAGAAACTAGAAAGATTTTGGACGATATTTGCGTTGC

TAAGGCTGTTGAATGTCCACCACCAAGAACTACTGCTAGATTATTGGATAAGTTGGTTGGTGAATTTTTGGAAGTTACC

TGCATTAACCCAACCTTCATTTGTGATCATCCACAAATCATGTCTCCATTGGCTAAATGGCACAGATCTAAAGAAGGTT

TGACCGAAAGATTCGAATTATTCGTCATGAAGAAAGAAATCTGCAACGCCTACACCGAATTGAATGATCCAATGAGACA

AAGACAATTATTCGAAGAACAAGCTAAAGCCAAAGCTGCTGGTGATGACGAAGCTATGTTTATTGACGAAAACTTCTGT

ACCGCTTTGGAATATGGTTTGCCACCAACTGCTGGTTGGGGTATGGGTATTGACAGAGTTGCTATGTTCTTGACCGATT

CCAACAACATCAAAGAAGTCTTGTTGTTCCCAGCTATGAAGCCTGAAGATAAGAAAGAAAACGTTGCTACTACCGACAC

TTTGGAATCTACTACTGTTGGTACTTCCGTCTGATGACTGCAG

## Synthetic *BmKRS1*

GGATCCATGATTGCCAACATCGTTAGAAGAGTT

CAATTGGATTGTCACGCCGTTTCTAGATCTTTGTTGAGATACGTTAACGGTTCCTCTGTTACCCAAAAGAGATGTGAAT

CTGAACAAAAGAGACAATTGAAGGCCCAACAAAAGTTGAAAGAAAAGGCCGAAAAAGAATTGCAAAGAGCTGCTGCTGC

TACAGCTGCTACTACTATGGAAAAAGGTAAGAGAGATGAAAAGATGGTTGATCCATCTGACCCACAAGAATACTTCAAG

TTGAGAACCACCTTGATCAACGAAAGAAGATCCAAAGGTATTAACCCATACCCACATAAGTTCCACGTTTCCATTTCTT

TGACCGACTTCATCGAAAAGTACGATTCCTTGGAAAAGGACGTTATCTTGAACGACTCCATCCAAAGAAGAATCTTCTC

CAAGAGAGAATCTGGTGGTAAGTTGATTTTCTACGACTTGCATGGTGAAGGTACTAGATTGCAAGTTTTGGCTAATGCC

AGATTCCATTCTGGTGATGAATCTTTCGATTCATTGCACGACAGAATCAAGAGAGGTGATATTATTGGTGTCAATGGTT

ACCCAGCTAGATCTAAATCTGGTGAATTGTCCATTATCCCAAGAGAAATCGTTCAATTGACTCCATGCTTGCATATGTT

GCCACATACTCATTTCGGTTTGAAAAATCAAGAAACCAGATACAGAATGAGATACTTGGACTTGATCATGAACACCGAT

GTCAAGAACAAGTTCGTTACTAGATCCAGAACCATTTCATTCTTGAGAAGATATTTGGACAACTTGGGTTTCTTGGAAG

TTGAAACTCCAATGATGAACTTGATTGCTGGTGGTGCTACTGCTAAACCATTCATTACTCATCACAACGATTTGGACAT

GGACTTGTATTTGAGAGTTGCCCCAGAATTATACTTGAAGATGTTGGTTGTTGGTGGTATCGATAGAGTTTACGAAATC

GGTAGAGTTTTCAGAAACGAAGGTATCGATCAAACCCACAATCCAGAATTTACCACCTGTGAATTTTACATGGCTTACG

CCGATTACGAAGATTTGATGAAGATTACCGAAGATATGTTGTCCAGATTGGTCTACTCTATCCATGGTACTTACAAGAT

CCAATACCATCCAAATGGTATCGGTGAAGAACCTGTTTACGAAGTTGACTTTACTCCACCATTCCAAAGAGTTGATATC

TACGACGGTTTACAAGAAAAGTTGGGTGTTAAGTTTCCACCAGCTAACACTTTGGATACTGATGAAGCTAACAAGTTCT

TCGATAAGTTGGCCGTTGAAAACAACGTTGAATGTCCAGCTCCAAGAACTACTGCTAGATTATTGGACAAGTTGATCGG

TGAATTTTTGGAACCTACCTTCATCTCACCAACTTTCTTGACTGGTCATCCACAATTGATGTCTCCATTGGCTAAATGG

CATAGATCAATGCCTGGTTTGACTGAAAGATTCGAATTATTCGTCGTCACCAAAGAAATTGTCAACGCTTACACCGAAT

TGAATGACCCATTAACCCAAAGATTGAGATTCGAAGAACAAGCCGAACAAAAACAAGCCGGTGATGATGAAGCACAAAT

TATCGACGAAAACTTCTGTACCGCTTTGGAATATGGTTTGCCACCAACTGCTGGTTGGGGTATTGGTATTGATAGATTG

ACTATGATCTTGACCGATTCCAACAACATCAAAGAAGTTTTGTTCTTCCCAGCTATGAGACCAGACGAAAAGACTACTA

ATTTGTCTAACGAAGGTGGTAACGCCTGATGACTGCAG

## Synthetic *HsCDC21*

GGATCCATGCCAGTTGCTGGTTCTGAA

TTGCCAAGAAGACCATTGCCACCAGCTGCTCAAGAAAGAGATGCTGAACCTAGACCACCACATGGTGAATTGCAATATT

TGGGTCAAATCCAACACATCTTGAGATGCGGTGTTAGAAAGGATGATAGAACTGGTACTGGTACTTTGTCTGTTTTTGG

TATGCAAGCCAGATACTCCTTGAGAGATGAATTTCCTTTGTTGACCACCAAGAGGGTTTTTTGGAAAGGTGTTTTGGAA

GAATTATTGTGGTTCATCAAGGGTTCCACCAACGCTAAAGAATTGTCATCTAAGGGTGTTAAGATTTGGGATGCTAACG

GTTCTAGAGATTTCTTGGATTCTTTGGGTTTCTCCACTAGAGAAGAAGGTGATTTGGGTCCAGTTTATGGTTTTCAATG

GAGACATTTTGGTGCCGAGTACAGAGATATGGAATCTGATTATTCTGGTCAAGGTGTCGACCAATTGCAAAGAGTTATT

GATACCATTAAGACCAACCCAGACGATAGAAGAATTATCATGTGTGCTTGGAACCCAAGAGATTTGCCATTGATGGCTT

TGCCACCATGTCATGCTTTGTGTCAATTTTACGTTGTCAACTCCGAATTGTCCTGCCAATTATATCAAAGATCTGGTGA

TATGGGTTTGGGTGTCCCATTCAATATTGCTTCATATGCTTTGTTGACCTACATGATTGCTCATATCACTGGTTTGAAG

CCAGGTGATTTCATTCATACTTTGGGTGATGCTCACATCTACTTGAACCATATTGAACCATTGAAGATCCAATTACAAA

GAGAACCTAGACCTTTCCCAAAGTTGAGAATCTTGAGAAAGGTTGAAAAGATCGATGACTTCAAGGCCGAAGATTTCCA

AATTGAAGGTTACAATCCACACCCAACCATCAAAATGGAAATGGCTGTTTGATAACTGCAG

## Synthetic *BmCDC21*

GGATCCATGAAGTCATCTGGTGCTCAT

GGTAATGTTATGGGTGATGCTGGTGTTTTGAAGAACGAAGATGAATCTAAGTACTTGGACCAAGTCAGATATATCTTGA

AGAACGGTGAAAGAATCGATGATAGAACTGGTGTTGGTACTATCTCTGTTTTCGGTATGCATTCCGTTTACTCATTGAG

AAATGGTGTTGTTCCAGTTTTGACCACCAAAAGGGTTTACTGGAAAGGTGTCGTCGAAGAATTATTGTGGTTTATCAGA

GGTGATACCAACGCTAAACACTTGTCTGAAAAGGGTGTTAGAATTTGGGATGCTAACGGTTCTAGACAATTCTTGGATC

AATGTGGTTTCTCCGATAGATCTGAAGGTGATTTGGGTCCAATCTATGGTTTTCAATGGAGACATTGTGGTGCTGAGTA

TAGAGGTATGGATACCGATTACACCAATCAAGGTATCGACCAATTGTCCGAAATCATCGATTTGATCAAGAACGAACCA

CACTCCAGAAGAATTATCTTGTCTGCTTGGAACGTTAAGGACTTGAAATTGATGGCTTTGCCACCATGTCATACTTTGG

CTCAATTTGCTGTTAGAAACGGTGAATTGTCCTGCCAATTATACCAAAGATCTGGTGATATGGGTTTGGGTGTTCCATT

CAATTTGGCTTCATATGGTTTGTTGACCCATATGATTGCTCATGTCTGTGGTTTGAAAACCGGTCATTTGTGTCATGTT

TTAGGTGATGCTCACGTTTACATGAATCATGTTGATGCCTTGCAAGAACAATTGAAGAGACAACCTAGACAATTCCCAA

CCGTTAGATTCATTGGTAACATCAAGACCATTGACGACTTCACCTATGAATCCATCGTTTTGGAAAACTACCAACCTAT

GCCAGCTATTAAGATGGCTATGGCTGTTTGATGACTGCAG

## Synthetic *BmDYS1*

GGATCCATGGACAACGGTAACTGTAAA

TTCGATGTTCATATCGCCGAAATGTCCGTCTTGAAGAAATCTTCTACTATGCCAGCTGATTCCACCATTATTAAGGGTT

ACGATTTCAACGAAGGTATCAACTACGATGCCTTGTTGGACCAATATATGTCTACTGGTTTTCAAGCCTCTCATTTCGC

TCAAGCTGTTCAACAAATCAACACCATGTTGACCATCAGAGAAGAACAATTCGAAGGTGATCATACTTTGCCATACCCA

GAAGGTAAACAAAAAAGAGCTTGCACCATTTTCTTGGGTTACACCTCTAATTTGGTTACCTCTGGTGTTAGAGAAAACA

TCAGATACTTGGTTGAACACGATTTGGTTGATTGCATCGTTACATCTGCTGGTGGTGTTGAAGAAGATTTGATTAAGTG

TTTGGCCCCATCTTACTTGGGTGCTTTTGATTTGGATGGTAAGACCTTGAGACATAACGGTTTGAATAGAGCCGGTAAC

ATTATCATCCCAAACAACAACTACTGCCAATTTGAAGATTGGTTGATGCCAATCTTGGACTCTTGTGAATTGGAACAAA

AGAACAACGATTTCTCTTGGACCCCATCCAAGTTGATTGATAGATTGGGTGCTGAAATCAACGACAAGAGATCTATTTG

TTACTGGGCCCATAGAAACAGAATCCCAGTTTTTTCACCAGCTTTGACCGATGGTTCTATTGGTGATATGTTGTACTTC

CACTCTTTCAGAAACGGTGGTATCAAGTTGGATATCGTCGAAGATTTGAGACACATTAACACTATGGCTGTCAGATCTA

ACAGAACCGGTGTTATTTTGTTGGGTGGTGGTGTAATGAAGCACCATATTAACAATGCTAACTTGATGAGAAACGGTTC

CGATTACGCTGTTTACGTTAATACCGGTCAAGAATTTGATGGTTCTGATTCTGGTGCTAGACCTGATGAAGCTGTTTCT

TGGGGTAAAGTTAGATCAGATTGCAGACCAGTTAAGATCTATGCTGATGCTACTTTGGTTTTCCCTTTGTTGGTTGCTA

AGACTTTCGCTAGACATGTCCAACAAAAACACTCCGAATTGCAAGAAGCCTGATAACTGCAG

## Synthetic *HsRKI1*

GGATCCATGCAAAGACCAGGTCCATTT

TCTACATTATACGGTAGAGTTTTGGCTCCATTGCCAGGTAGAGCTGGTGGTGCTGCTTCAGGTGGTGGTGGTAATTCTT

GGGATTTGCCAGGTTCTCATGTTAGATTACCTGGTAGAGCACAATCTGGTACTAGAGGTGGTGCAGGTAATACTTCTAC

TTCTTGTGGTGATTCCAACTCTATTTGTCCAGCTCCATCTACTATGTCTAAAGCTGAAGAAGCTAAAAAGTTGGCCGGT

AGAGCAGCTGTTGAAAACCATGTTAGAAACAATCAAGTCTTGGGTATCGGTTCTGGTTCTACTATAGTTCATGCCGTTC

AAAGAATTGCCGAAAGAGTTAAGCAAGAAAACTTGAACTTGGTCTGCATTCCAACATCTTTCCAAGCTAGACAATTGAT

CTTGCAATACGGTTTGACCTTGTCCGATTTGGATAGACATCCAGAAATTGATTTGGCTATTGATGGTGCCGATGAAGTT

GATGCTGATTTGAATTTGATTAAGGGCGGTGGTGGTTGTTTGACTCAAGAAAAAATCGTTGCTGGTTACGCCTCTAGAT

TCATCGTTATTGCTGATTTCAGAAAGGACTCCAAGAACTTGGGTGATCAATGGCATAAGGGTATTCCAATTGAAGTTAT

TCCAATGGCCTACGTTCCAGTTTCTAGAGCTGTTTCTCAAAAGTTTGGTGGTGTTGTCGAATTGAGAATGGCTGTTAAC

AAAGCTGGTCCAGTTGTTACTGATAACGGTAACTTTATCTTGGACTGGAAGTTCGATAGAGTTCACAAATGGTCTGAAG

TTAACACCGCCATTAAGATGATTCCAGGTGTTGTTGATACTGGTTTGTTCATTAACATGGCTGAAAGAGTCTACTTCGG

TATGCAAGATGGTTCCGTTAATATGAGAGAAAAGCCATTCTGCTAATGACTGCAG

## Synthetic *BmRKI1*

GGATCCATGAAGACTCATTCTACTTTG

GATTTGGCTAAAAGAGCTGCTGCTTTTGCTGCTGGTGAACAACATGTTAAGTCTGGTTGTAGAATTGGTGTTGGTTCTG

GTACTACTGCTAAGTTCTTGGTTGAATTTTTGGCCGAAAAGGTTAACGATGGTACTGTTAAGGATATTATCTGCGTCCC

ATCTTCATTCTCTACTAGACAATGGTTGATCGACTACGGTTTACAAGTTATCGACTTGGAAAAGATCTTGGACTTGGAT

TTGTGTATTGATGGTGCTGATGAAGTCGACATTAACTTGAACTGTATTAAGGGTTCTGGTGGTGGTTGTTTGACTCAAG

AAAAAATCGTTCAAACCTGCGCCAAGAAGTTCTACATTATTGCTGATGCTTCCAAGCAATCCGAAAAGTTGGGTGATAG

AAATTTCCCAATCCCAATCGAAGTTGTTCCATTTGGTTATGCCCCAGTTTTGAATTGGATCAAGAGACAAGAAGGTGGT

GAAGTCGAATTGAGAACTAACTCCAAAGAAAAATTGGACCCATTCATCACCGACAACAACAACTTTATTTTGGACTGGA

ACTTCCCAAAGAACAAGTACGTTACTACCGAAGATTTGTCTGCCTTGCATACCAGATTGAAATCTTTGCCAGGTGTTGT

TGAAACTGGTTTGTTTATCGGTGTTGCTGAAAAGGCTTATTTCGCTACTGCTGATGGTAATGTCACCGAAAGATTAAGA

CCAGATCCATCCTTGCACTTTTCTTTGAATCAAAAATCCTCCTTGCATTGATAACTGCAG

# 3. Plasmid used in this study



**Fig A**

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**Fig B**



**Fig C**



**Fig D**



**Fig E**



**Fig F**



**Fig G**



**Fig H**



**Fig I**



**Fig J**



**Fig K**



**Fig L**



**Fig M**



**Fig N**



**Fig O**



**Fig P**



**Fig Q**



**Fig R**



**Fig S**



**Fig T**



**Fig U**



**Fig V**



**Fig W**



**Fig X**



**Fig Y**



**Fig Z**



**Fig AA**



**Fig AB**



**Fig AC**



**Fig AD**



**Fig AE**



**Fig AF**

# 3. Strains used in this Study

|  |  |  |  |
| --- | --- | --- | --- |
| **Strain name** | **Plasmid**  | **Genotype** | **Source** |
| BY4743 | - | *MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| BY4741 | - | *MAT****a*** *his3∆1 leu2∆0 met15∆0 LYS2 ura3∆0* | EUROSCARF |
| BY4742 | - | *MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | EUROSCARF |
| *nmt1∆/NMT1* | - | *nmt1::KanMX/NMT1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *pgk1∆/PGK1* | - | *pgk1::KanMX/PGK1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *tpi1∆/TPI1* | - | *tpi1::KanMX/TPI1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *sah1∆/SAH1* |  | *sah1::KanMX/SAH1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *ipp1∆/IPP1* |  | *ipp1::KanMX/IPP1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *sec53∆/SEC53* | - | *sec53::KanMX/SEC53 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *cdc21∆/CDC21* | - | *cdc21::KanMX/CDC21 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *krs1∆/KRS1* | - | *krs1::KanMX/KRS1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *ade13∆/ADE13* |  | *ade13::KanMX/ADE13 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *mvd1∆/MVD1* |  | *mvd1::KanMX/MVD1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *rki1∆/RKI1* |  | *rki1::KanMX/RKI1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *cdc8∆/CDC8* |  | *cdc8::KanMX/CDC8 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *dys1∆/DYS1* |  | *dys1::KanMX/DYS1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *phs1∆/PHS1* |  | *phs1::KanMX/PHS1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *pis1∆/PIS1* |  | *pis1::KanMX/PIS1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | EUROSCARF |
| *nmt1∆/NMT1\_p* | - | *pdr5::HISMX/PDR5 nmt1::KanMX/NMT1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | [9] |
| *pgk1∆/PGK1\_p* | - | *pdr5::HISMX/PDR5 pgk1::KanMX/PGK1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | [9] |
| *tpi1∆/TPI1\_p* | - | *pdr5::HISMX/PDR5 tpi1::KanMX/TPI1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| *sah1∆/SAH1\_p* | - | *pdr5::HISMX/PDR5 sah1::KanMX/SAH1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| *ipp1∆/IPP1\_p* | - | *pdr5::HISMX/PDR5 ipp1::KanMX/IPP1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| *sec53∆/SEC53\_p* | - | *pdr5::HISMX/PDR5 sec53::KanMX/SEC53 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* This work | This work |
| *cdc21∆/CDC21\_p* | - | *pdr5::HISMX/PDR5 cdc21::KanMX/CDC21 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| *krs1∆/KRS1\_p* | - | *pdr5::HISMX/PDR5 krs1::KanMX/KRS1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| *ade13∆/ADE13\_p* | - | *pdr5::HISMX/PDR5 ade13::KanMX/ADE13 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| *mvd1∆/MVD1\_p* | - | *pdr5::HISMX/PDR5 mvd1::KanMX/MVD1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| *rki1∆/RKI1\_p* | - | *pdr5::HISMX/PDR5 rki1::KanMX/RKI1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| *cdc8∆/CDC8\_p* | - | *pdr5::HISMX/PDR5 cdc8::KanMX/CDC8 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| *dys1∆/DYS1\_p* | - | *pdr5::HISMX/PDR5 dys1::KanMX/DYS1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| *phs1∆/PHS1\_p* | - | *pdr5::HISMX/PDR5 phs1::KanMX/PHS1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| *pis1∆/PIS1\_p* | - | *pdr5::HISMX/PDR5 pis1::KanMX/PIS1 MAT****a****/MATα his3∆1/his3∆1 leu2∆0/leu2∆0 met15∆0/MET15 LYS2/lys2∆0 ura3∆0/ura3∆0* | This work |
| yBmNMT\_p | pCM*Bm*NMT | *pdr5::HISMX nmt1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| ySmmNMT\_p | pCM*Sm*NMT | *pdr5::HISMX nmt1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | [9] |
| yHsNMT\_p | pCM*Hs*NMT | *pdr5::HISMX nmt1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | [9] |
| yBmPGK\_p | pCM*Bm*PGK | *pdr5::HISMX pgk1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| ySmPGK\_p | pCM*Sm*PGK | *pdr5::HISMX pgk1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | [9] |
| yHsPGK\_p | pCM*Hs*PGK | *pdr5::HISMX pgk1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | [9] |
| yBmTPI\_p | pCM*Bm*TPI | *pdr5::HISMX tpi1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| yHsTPI\_p | pCM*Hs*TPI | *pdr5::HISMX tpi1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| yBmSAH\_p | pCM*Bm*SAH | *pdr5::HISMX sah1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| yHsSAHa\_p | pCM*Hs*SAHa | *pdr5::HISMX pgk1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| yHsSAHb\_p | pCM*Hs*SAHb | *pdr5::HISMX pgk1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| yHsIPPa\_p | pCM*Hs*IPPa | *pdr5::HISMX ipp1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| yBmCDC21\_p | pCM*Bm*CDC21 | *pdr5::HISMX cdc21::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| yHsCDC21\_p | pCM*Hs*CDC21 | *pdr5::HISMX cdc21::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| yHsMVD\_p | pCM*Hs*MVD | *pdr5::HISMX mvd1::KanMX MAT****a*** *his3∆1 leu2∆0 met15∆0 LYS2 ura3∆0* | This work |
| yBmRKI\_p | pCM*Bm*RKI | *pdr5::HISMX rki1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| yHsRKI\_p | pCM*Hs*RKI | *pdr5::HISMX rki1::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| yHsCDC8\_p | pCM*Hs*CDC8 | *pdr5::HISMX cdc8::KanMX MATα his3∆1 leu2∆0 MET15 lys2∆0 ura3∆0* | This work |
| yBmDYS\_p | pCM*Bm*DYS | *pdr5::HISMX dys1::KanMX MAT****a*** *his3∆1 leu2∆0 met15∆0 LYS2 ura3∆0* | This work |
| yBmPIS\_p | pCM*Bm*PIS | *pdr5::HISMX pis1::KanMX MAT****a*** *his3∆1 leu2∆0 met15∆0 LYS2 ura3∆0* | This work |
| yHsPIS\_p | pCM*Hs*PIS | *pdr5::HISMX pis1::KanMX MAT****a*** *his3∆1 leu2∆0 met15∆0 LYS2 ura3∆0* | This work |

**Table A**

# 4. Scoring growth



**Fig AG**