## Supplementary Table 7 - Neochromosome configurations

SHRs are differently annotated than in Kuijpers *et al.* 6. SHRs are annotated in subscript between the genetic fragments that they join together.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Size | Notes | Stocked name | Neochromosome configuration |
| NeoChr1 | 100 kb | Circular | IMF6 | AO' 7A BJ 7B BK 7C BL 7D AP 8A BM 8B BN 8C BO 8D AC *pCCW12-mRuby2-tENO1* AD *CEN6/ARS4*AE 1A AT 1B AS 1C AU 1D AF 2A AV 2B AW2C AX 2D AG 3A AY 3B AZ 3C BA 3D AH *pTEF2-mTurquoise2-tSSA 1*AI ARS417 BU *pHIS3*-*HIS3-tHIS3*AJ 4A BC 4B BD 4C BE4D AK 9A BF9B BS9C BT9D AQ5A BG 5B BH 5C BI 5D AL *pTEF1-Venus-tTDH1*AM ARS1 AN 6A BP 6B BQ 6C BR 6D AO` Telomerator AO` |
| NeoChr2 | 50 kb | Circular | IMF2 | AO' 7A BJ 7B BK 7C BL 7D AC *pCCW12-mRuby2-tENO1* AD *CEN6/ARS4* AE 1A AT 1B AS 1C  AU 1Ds  AH *pTEF2 - mTurquoise2 - tSSA1*AI *pHIS3-HIS3-tHIS3**AJ* 4A BC 4B BD 4C BE 4D AL *pTEF1 - Venus - tTDH1* AM *ARS1* AN 6A BP 6B BQ 6C BR 6D AO' Telomerator AO' |
| NeoChr10 | 100kb | Linear | IMF22 | Telomere AO 7A BJ 7B BK 7C BL 7D AP 8A BM 8B BN 8C BO 8D AC *pCCW12-mRuby2-tENO1* AD *ARS1* AN 18A BP 18B BQ 19C BR 19D DE 15A DF 15B DH 15C DI 15D DJ *CEN6/ARS4* AE 16A DK 16B DL 16C DM 16D DN 17A DO 17B DP 19A DQ 17D DR *ARS417* BU *pHIS3-HIS3-tHIS3* AJ 4A BC 4B BD 4C BE 4D AK 9A BF 9B BS 9C BT 9D AQ 5A BG 5B BH 5C BI 5D AL *tSSA1-mTurquoise2- pTEF2* DS Telomere |
| NeoChr11 | 100 kb | Linear. Few bases changed in right telomere to prevent recirculari-sation | - | Telomere AO 7A BJ 7B BK 7C BL 7D AP 8A BM 8B BN 8C BO 8D AC *pCCW12-mRuby2-tENO1* AD *ARS1* AN 18A BP 18B BQ 19C BR 19D DE 15A DF 15B DH 15C DI 15D DJ *CEN6/ARS4* AE 16A DK 16B DL 16C DM 16D DN 17A DO 17B DP 19A DQ 17D DR *ARS417* BU *pHIS3-HIS3-tHIS3* AJ 4A BC 4B BD 4C BE 4D AK 9A BF 9B BS 9C BT 9D AQ 5A BG 5B BH 5C BI 5D AL *tSSA1-mTurquoise2- pTEF2* DS Telomere |
| NeoChr12 | 100 kb | Circular | IMF23 | AO 7A BJ 7B BK 7C BL 7D AP 8A BM 8B BN 8C BO 8D AC *pCCW12-mRuby2-tENO1* AD *ARS1*AN 18A BP 18B BQ 19C BR 19D DE 15A DF 15B DH 15C DI 15D DJ *CEN6/ARS4*AE 16A DK 16B DL 16C DM 16D DN 17A DO 17B DP 19A DQ 17D DR *ARS417* BU *pHIS3-HIS3-tHIS3*AJ 4A BC 4B BD 4C BE 4D AK 9A BF 9B BS 9C BT 9D AQ 5A BG 5B BH 5C BI 5D AL *tSSA1-mTurquoise2- pTEF2* DS Telomerator AO |
| NeoChr25 | 100 kb | Linear | IMF27, IMF31, IMF33, IMF34 | telomere BJ 7BC BL *ARS1* AN *pZWF1-ZWF1-tZWF1* BP *pTKL1-TKL1-tTKL1* DE *pGND1-GND1-tGND1* BQ *tRKI1-RKI1-pRKI1* BR *tTAL1-TAL1-pTAL1* AL *tSSA1-mTurquoise2*-*pTEF2* DS *tRPE1-RPE1-pRPE1* DF *tSOL3-SOL3-pSOL3* DI *ARS417* BE *pHHF1-coEcaroG(P150L)-tTEF1* DK *pHHF2-coEcaroB-tTEF2* AC *pCCW12-mRuby2-tENO1* AD *pRPL25-coEcaroD-tGPH1* DM *pRPP0-coEcaroE-tCYC1* DN *pHTB2-coEcaroL-tPGM2* DO *pRPL3-coEcaroA-tSOL4* DP *tGPD2-coEcaroC-pRPL8A* DQ *tGDB1-coEctyrA*(*M53I,A354V)-pRPL10* DR *tGSY2-coEcpheA(T326P) -pRPL18B* AJ *tGLC3-coEctyrB-pCWP2* DH 15CD DJ *CEN6/ARS4* AE 16AB DL *pFBA1-FBA1-tFBA1* H *pTPI1-TPI1-tTPI1* P *pPGK1-PGK1-tPGK1* Q *pADH1-ADH1-tADH1* N *pPYK1-PYK1-tPYK1* O *pTDH3-TDH3-tTDH3* A *pENO2-ENO2-tENO2* B *tHXK2-HXK2-pHXK2* C *tPGI1-PGI1-pPGI1* D *tPFK1-PFK1-pPFK1* J *tPFK2-PFK2-pPFK2* BU *tHIS3-HIS3-pHIS3* L *tGPM1-GPM1-pGPM1* M *tPDC1-PDC1-pPDC1* AR *ARS1211* BS 9CD AQ telomere |
| NeoChr26 | 100 kb | Circular | IMF29, IMF32, IMF35, IMF36, IMF40 | BJ 7BC BL *ARS1* AN *pZWF1-ZWF1-tZWF1* BP *pTKL1-TKL1-tTKL1* DE *pGND1-GND1-tGND1* BQ *tRKI1-RKI1-pRKI1* BR *tTAL1-TAL1-pTAL1* AL *tSSA1-mTurquoise2*-*pTEF2* DS *tRPE1-RPE1-pRPE1* DF *tSOL3-SOL3-pSOL3* DI *ARS417* BE *pHHF1-coEcaroG(P150L)-tTEF1* DK *pHHF2-coEcaroB-tTEF2* AC *pCCW12-mRuby2-tENO1* AD *pRPL25-coEcaroD-tGPH1* DM *pRPP0-coEcaroE-tCYC1* DN *pHTB2-coEcaroL-tPGM2* DO *pRPL3-coEcaroA-tSOL4* DP *tGPD2-coEcaroC-pRPL8A* DQ *tGDB1-coEctyrA*(*M53I,A354V)-pRPL10* DR *tGSY2-coEcpheA(T326P) -pRPL18B* AJ *tGLC3-coEctyrB-pCWP2* DH 15CD DJ *CEN6/ARS4* AE 16AB DL *pFBA1-FBA1-tFBA1* H *pTPI1-TPI1-tTPI1* P *pPGK1-PGK1-tPGK1* Q *pADH1-ADH1-tADH1* N *pPYK1-PYK1-tPYK1* O *pTDH3-TDH3-tTDH3* A *pENO2-ENO2-tENO2* B *tHXK2-HXK2-pHXK2* C *tPGI1-PGI1-pPGI1* D *tPFK1-PFK1-pPFK1* J *tPFK2-PFK2-pPFK2* BU *tHIS3-HIS3-pHIS3* L *tGPM1-GPM1-pGPM1* M *tPDC1-PDC1-pPDC1* AR *ARS1211* BS 9CD AQ telomerator |
| NeoChr30 | 128 kb | Circular. Insertion of anthocyanin pathway in NeoChr26 of strain IMF40 | IMF41 | BJ 7BC BL *ARS1* AN *pZWF1-ZWF1-tZWF1* BP *pTKL1-TKL1-tTKL1* DE *pGND1-GND1-tGND1* BQ *tRKI1-RKI1-pRKI1* BR *tTAL1-TAL1-pTAL1* AL *tSSA1-mTurquoise2*-*pTEF2* DS *tRPE1-RPE1-pRPE1* DF *tSOL3-SOL3-pSOL3* DI *ARS417* BE *pHHF1-coEcaroG(P150L)-tTEF1* DK *pHHF2-coEcaroB-tTEF2* AC *pCCW12-mRuby2-tENO1* AD *pRPL25-coEcaroD-tGPH1* DM *pRPP0-coEcaroE-tCYC1* DN *pHTB2-coEcaroL-tPGM2* DO *pRPL3-coEcaroA-tSOL4* DP *tGPD2-coEcaroC-pRPL8A* DQ *tGDB1-coEctyrA*(*M53I,A354V)-pRPL10* DR *tGSY2-coEcpheA(T326P) -pRPL18B* AJ *tGLC3-coEctyrB-pCWP2* DH 15CD DJ *CEN6/ARS4* AE 16AB *pRPS3-coAtCPR1-tIDH2* F *pSePDC1-AtPAL1-tLAT1* DW *pSeGPM1-coRcTAL1-tCIT1* DX *pSeTPI1-At4CL3-tSDH2* DY *pTEF1-coAtCHS3-tMDH1* AM *tSDH4-AtCHI1-pSkADH1* AB *tADH3-coAtC4H-pSeFBA1* DC *tSDH3-coAtF3H-pSkTDH3* EA *tACO1-coGhDFR-pSePGK1* EB *tFUM1-coAtANS-pSeENO2* EC *tDIC1-coAt3GT-pSePYK1* CJ *ARS106*  DL *pFBA1-FBA1-tFBA1* H *pTPI1-TPI1-tTPI1* P *pPGK1-PGK1-tPGK1* Q *pADH1-ADH1-tADH1* N *pPYK1-PYK1-tPYK1* O *pTDH3-TDH3-tTDH3* A *pENO2-ENO2-tENO2* B *tHXK2-HXK2-pHXK2* C *tPGI1-PGI1-pPGI1* D *tPFK1-PFK1-pPFK1* J *tPFK2-PFK2-pPFK2* BU *tHIS3-HIS3-pHIS3* L *tGPM1-GPM1-pGPM1* M *tPDC1-PDC1-pPDC1* AR *ARS1211* BS 9CD AQ Telomerator |
| NeoChr31 | 128 kb | Linear. Insertion of anthocyanin pathway in NeoChr25 of strain IMF34 | IMF42,  IMF44 | Telomere BJ 7BC BL *ARS1* AN *pZWF1-ZWF1-tZWF1* BP *pTKL1-TKL1-tTKL1* DE *pGND1-GND1-tGND1* BQ *tRKI1-RKI1-pRKI1* BR *tTAL1-TAL1-pTAL1* AL *tSSA1-mTurquoise2*-*pTEF2* DS *tRPE1-RPE1-pRPE1* DF *tSOL3-SOL3-pSOL3* DI *ARS417* BE *pHHF1-coEcaroG(P150L)-tTEF1* DK *pHHF2-coEcaroB-tTEF2* AC *pCCW12-mRuby2-tENO1* AD *pRPL25-coEcaroD-tGPH1* DM *pRPP0-coEcaroE-tCYC1* DN *pHTB2-coEcaroL-tPGM2* DO *pRPL3-coEcaroA-tSOL4* DP *tGPD2-coEcaroC-pRPL8A* DQ *tGDB1-coEctyrA*(*M53I,A354V)-pRPL10* DR *tGSY2-coEcpheA(T326P) -pRPL18B* AJ *tGLC3-coEctyrB-pCWP2* DH 15CD DJ *CEN6/ARS4* AE 16AB *pRPS3-coAtCPR1-tIDH2* F *pSePDC1-AtPAL1-tLAT1* DW *pSeGPM1-coRcTAL1-tCIT1* DX *pSeTPI1-At4CL3-tSDH2* DY *pTEF1-coAtCHS3-tMDH1* AM *tSDH4-AtCHI1-pSkADH1* AB *tADH3-coAtC4H-pSeFBA1* DC *tSDH3-coAtF3H-pSkTDH3* EA *tACO1-coGhDFR-pSePGK1* EB *tFUM1-coAtANS-pSeENO2* EC *tDIC1-coAt3GT-pSePYK1* CJ *ARS106*  DL *pFBA1-FBA1-tFBA1* H *pTPI1-TPI1-tTPI1* P *pPGK1-PGK1-tPGK1* Q *pADH1-ADH1-tADH1* N *pPYK1-PYK1-tPYK1* O *pTDH3-TDH3-tTDH3* A *pENO2-ENO2-tENO2* B *tHXK2-HXK2-pHXK2* C *tPGI1-PGI1-pPGI1* D *tPFK1-PFK1-pPFK1* J *tPFK2-PFK2-pPFK2* BU *tHIS3-HIS3-pHIS3* L *tGPM1-GPM1-pGPM1* M *tPDC1-PDC1-pPDC1* AR *ARS1211* BS 9CD AQ Telomere |
| NeoChr33 | 137 kb | Insertion of *AtCHS* at Chunk 7BC, chunk 15CD, SHR N and chunk 9CD in NeoChr31 of strain IMF42 and IMF44. | IMF47 (from IMF44) | Telomere BJ 7BC *tMDH1-coAtCHS3-pTEF1* 7BC BL *ARS1* AN *pZWF1-ZWF1-tZWF1* BP *pTKL1-TKL1-tTKL1* DE *pGND1-GND1-tGND1* BQ *tRKI1-RKI1-pRKI1* BR *tTAL1-TAL1-pTAL1* AL *tSSA1-mTurquoise2*-*pTEF2* DS *tRPE1-RPE1-pRPE1* DF *tSOL3-SOL3-pSOL3* DI *ARS417* BE *pHHF1-coEcaroG(P150L)-tTEF1* DK *pHHF2-coEcaroB-tTEF2* AC *pCCW12-mRuby2-tENO1* AD *pRPL25-coEcaroD-tGPH1* DM *pRPP0-coEcaroE-tCYC1* DN *pHTB2-coEcaroL-tPGM2* DO *pRPL3-coEcaroA-tSOL4* DP *tGPD2-coEcaroC-pRPL8A* DQ *tGDB1-coEctyrA*(*M53I,A354V)-pRPL10* DR *tGSY2-coEcpheA(T326P) -pRPL18B* AJ *tGLC3-coEctyrB-pCWP2* DH 15CD *tMDH1-coAtCHS3-pTEF1 15 CD* DJ *CEN6/ARS4* AE 16AB *pRPS3-coAtCPR1-tIDH2* F *pSePDC1-AtPAL1-tLAT1* DW *pSeGPM1-coRcTAL1-tCIT1* DX *pSeTPI1-At4CL3-tSDH2* DY *pTEF1-coAtCHS3-tMDH1* AM *tSDH4-AtCHI1-pSkADH1* AB *tADH3-coAtC4H-pSeFBA1* DC *tSDH3-coAtF3H-pSkTDH3* EA *tACO1-coGhDFR-pSePGK1* EB *tFUM1-coAtANS-pSeENO2* EC *tDIC1-coAt3GT-pSePYK1* CJ *ARS106*  DL *pFBA1-FBA1-tFBA1* H *pTPI1-TPI1-tTPI1* P *pPGK1-PGK1-tPGK1* Q *pADH1-ADH1-tADH1* N *pTEF1-coAtCHS3-tMDH1* *pPYK1-PYK1-tPYK1* O *pTDH3-TDH3-tTDH3* A *pENO2-ENO2-tENO2* B *tHXK2-HXK2-pHXK2* C *tPGI1-PGI1-pPGI1* D *tPFK1-PFK1-pPFK1* J *tPFK2-PFK2-pPFK2* BU *tHIS3-HIS3-pHIS3* L *tGPM1-GPM1-pGPM1* M *tPDC1-PDC1-pPDC1* AR *ARS1211* BS 9CD *pTEF1-coAtCHS3-tMDH1 9CD* AQ Telomere |
| NeoChr34 | 137 kb | Insertion of *CoAtANS* in *mTurquoise* | IMF48 (from IMF47) | Telomere BJ 7BC *tMDH1-coAtCHS3-pTEF1* 7BC BL *ARS1* AN *pZWF1-ZWF1-tZWF1* BP *pTKL1-TKL1-tTKL1* DE *pGND1-GND1-tGND1* BQ *tRKI1-RKI1-pRKI1* BR *tTAL1-TAL1-pTAL1* AL *tSSA1-mTurquoise2*-*pTEF2∆::tFUM1-CoAtANS-pSeENO2* DS *tRPE1-RPE1-pRPE1* DF *tSOL3-SOL3-pSOL3* DI *ARS417* BE *pHHF1-coEcaroG(P150L)-tTEF1* DK *pHHF2-coEcaroB-tTEF2* AC *pCCW12-mRuby2-tENO1* AD *pRPL25-coEcaroD-tGPH1* DM *pRPP0-coEcaroE-tCYC1* DN *pHTB2-coEcaroL-tPGM2* DO *pRPL3-coEcaroA-tSOL4* DP *tGPD2-coEcaroC-pRPL8A* DQ *tGDB1-coEctyrA*(*M53I,A354V)-pRPL10* DR *tGSY2-coEcpheA(T326P) -pRPL18B* AJ *tGLC3-coEctyrB-pCWP2* DH 15CD *tMDH1-coAtCHS3-pTEF1 15 CD* DJ *CEN6/ARS4* AE 16AB *pRPS3-coAtCPR1-tIDH2* F *pSePDC1-AtPAL1-tLAT1* DW *pSeGPM1-coRcTAL1-tCIT1* DX *pSeTPI1-At4CL3-tSDH2* DY *pTEF1-coAtCHS3-tMDH1* AM *tSDH4-AtCHI1-pSkADH1* AB *tADH3-coAtC4H-pSeFBA1* DC *tSDH3-coAtF3H-pSkTDH3* EA *tACO1-coGhDFR-pSePGK1* EB *tFUM1-coAtANS-pSeENO2* EC *tDIC1-coAt3GT-pSePYK1* CJ *ARS106*  DL *pFBA1-FBA1-tFBA1* H *pTPI1-TPI1-tTPI1* P *pPGK1-PGK1-tPGK1* Q *pADH1-ADH1-tADH1* N *pTEF1-coAtCHS3-tMDH1* *pPYK1-PYK1-tPYK1* O *pTDH3-TDH3-tTDH3* A *pENO2-ENO2-tENO2* B *tHXK2-HXK2-pHXK2* C *tPGI1-PGI1-pPGI1* D *tPFK1-PFK1-pPFK1* J *tPFK2-PFK2-pPFK2* BU *tHIS3-HIS3-pHIS3* L *tGPM1-GPM1-pGPM1* M *tPDC1-PDC1-pPDC1* AR *ARS1211* BS 9CD *pTEF1-coAtCHS3-tMDH1 9CD* AQ Telomere |