

**Cell, Volume 187**

**Supplemental information**

**The fork protection complex promotes  
parental histone recycling and epigenetic memory**

**Sebastian Jespersen Charlton, Valentin Flury, Yutaka Kanoh, Aitana Victoria Genzor, Leonie Kollenstart, Wantong Ao, Peter Brøgger, Melanie Bianca Weisser, Marek Adamus, Nicolas Alcaraz, Charlotte M. Delvaux de Fenffe, Francesca Mattioli, Guillermo Montoya, Hisao Masai, Anja Groth, and Geneviève Thon**

**Table S1: Strains used in this study, related to STAR Methods.**

Strain	Genotype
AW16	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1-S353A-S797A ura4-D18</i>
HU43	<i>h<sup>-</sup> leu1-32 ura4-D18 ade6-DN/N</i>
HU52	<i>h<sup>90</sup> mat3-M (EcoRV)::ade6<sup>+</sup> leu1-32 ura4-D18 ade6-DN/N</i>
LJ102	<i>h<sup>90</sup> mat3-M (EcoRV)::ade6<sup>+</sup> (Blp)::LEU2 mrc1Δ::kanMX4 leu1-32 ura4-D18 ade6-DN/N</i>
KT1398	<i>h<sup>-</sup> leu1-32 ura4-D18 mrc1-S604A-T645A-T653A-5xFLAG::kan<sup>R</sup></i>
MS563	<i>h<sup>-</sup> leu1-32 ura4-D18 mrc1Δ(782-879)</i>
MS715	<i>h<sup>-</sup> nda3-KM311 leu1-32 ura4-D18 mrc1-T238E-S395E-3xFLAG::kan<sup>R</sup></i>
PAM01	<i>h<sup>+</sup> mrc1Δ::kanMX4 leu1-32 ura4-D18</i>
PAM02	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ::kanMX4 clr4Δ::kanR ura4-D18 arg12Δ::natR</i>
PAM05	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry swi1Δ::hph1 clr4Δ::kanR ura4-D18 arg12Δ::natR</i>
PAM08	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry swi3Δ::hph1 clr4Δ::kanR ura4-D18 arg12Δ::natR</i>
PAM10	<i>h<sup>+</sup> mrc1Δ::kanMX4 ura4-D18</i>
PAM11	<i>h<sup>+</sup> swi1Δ::hph1 ura4-D18</i>
PAM12	<i>h<sup>+</sup> swi3Δ::hph1 ura4-D18</i>
PAM33	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mcm2-Y80A-Y89A ura4-D18</i>
PAM59	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1-T238E-S395E-3xFLAG::kan<sup>R</sup> ura4-D18</i>
PAM73	<i>h<sup>90</sup> (EcoRV)::mCherry ura4-D18 ade6-216 arg12Δ::NatR</i>
PAM94	<i>h<sup>90</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ::kanMX4 hsk1-89:ura4<sup>+</sup> ura4-D18</i>
PAM95	<i>h<sup>90</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry hsk1-89:ura4<sup>+</sup> ura4-D18</i>
PG1247	<i>h<sup>ΔK</sup> mat3-M(RV)::ura4<sup>+</sup> leu1-32 ura4-D18 ade6-210</i>
PG1599	<i>mat1-Msmt-0 mat2-P (Xba)::ura4<sup>+</sup> leu1-32 ura4-D18 ade6-216</i>
PG1608	<i>mat1-Msmt-0 REIIΔ mat2-P (Xba)::ura4<sup>+</sup> leu1-32 ura4-D18 ade6-216</i>
PG1899	<i>h<sup>90</sup> mat3-M(RV)::ura4<sup>+</sup> leu1-32 ura4-DS/E ade6-210</i>
PG3716	<i>h<sup>+</sup> ura4-D18</i>
PG3873	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry clr4Δ::kanR ura4-D18 arg12Δ::natR</i>
PG3950	<i>h<sup>90</sup> mat3-M (EcoRV)::ade6<sup>+</sup> (Blp)::LEU2 leu1-32 ura4-D18 ade6-DN/N</i>
PG4154	<i>h<sup>90</sup> nda3-KM311 AUR1:aur1r-Adh1-TK-Adh1-scENT1 leu1-32</i>
SC140	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ(391-535) ura4-D18 ade6-216 arg12Δ::Nat<sup>R</sup></i>
SC160	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ(391-535) ura4-D18</i>
SC185	<i>h<sup>90</sup> mat3-M(RV)::mCherry mrc1Δ(782-879)-GFP-3HA::kanMX6 leu1-32</i>
SC191	<i>h<sup>90</sup> mat3-M(RV)::mCherry mrc1Δ(782-879)-GFP-3HA::kanMX6 leu1:pob3-GBP</i>
SC206	<i>h<sup>90</sup> mat3-M(RV)::mCherry mrc1Δ(782-879) leu1:pob3-GBP</i>
SC238	<i>h<sup>90</sup> mrc1Δ(782-879) nda3-KM311 AUR1:aur1r-Adh1-TK-Adh1-scENT1 leu1-32</i>
SC239	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1-S604A-T645A-T653A-5xFLAG::kan<sup>R</sup> ura4-D18</i>
SC240	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ::kanMX4 ura4-D18</i>
SC241	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1-SUMO::kan<sup>R</sup> ura4-D18</i>
SC242	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ(782-879) ura4-D18</i>
SC243	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ(160-284) ura4-D18</i>
SC279	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry swi3Δ::hph1 ura4-D18</i>
SC281	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry swi1Δ::hph1 ura4-D18</i>
SC285	<i>h<sup>90</sup> mat3-M (EcoRV)::ade6<sup>+</sup> mrc1-DSE/A-GFP-3HA::kanMX6 leu1-32 ura4-D18 ade6-DN/N</i>
SC287	<i>h<sup>90</sup> mat3-M (EcoRV)::ade6<sup>+</sup> mrc1-KAF/A-GFP-3HA::kanMX6 leu1-32 ura4-D18 ade6-DN/N</i>
SC291	<i>h<sup>90</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ(782-879) hsk1-89:ura4<sup>+</sup> ura4-D18</i>
SC292	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1-DSE/A-GFP-3HA::kanMX6 ura4-D18</i>
SC293	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1-KAF/A-GFP-3HA::kanMX6 ura4-D18</i>
SC294	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1-DSE/A hsk1-89:ura4<sup>+</sup> ura4-D18</i>
SC295	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1-KAF/A hsk1-89:ura4<sup>+</sup> ura4-D18</i>
SC298	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ(782-879) mcm2-Y80A-Y89A</i>
SC302	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry nda3-KM311 AUR1:aur1r-Adh1-TK-Adh1-scENT1 ura4-D18</i>
SC303	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ(782-879) nda3-KM311 AUR1:aur1r-Adh1-TK-Adh1-scENT1 ura4-D18</i>
SC304	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mcm2-Y80A-Y89A nda3-KM311 AUR1:aur1r-Adh1-TK-Adh1-scENT1 ura4-D18</i>
SC305	<i>h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ(782-879) mcm2-Y80A-Y89A nda3-KM311 AUR1:aur1r-Adh1-TK-Adh1-scENT1 ura4-D18</i>
SC322	<i>mat1-Msmt-0 REIIΔ mat2-P (Xba)::ura4<sup>+</sup> mrc1Δ::kanMX4 leu1-32 ura4-D18 ade6-216</i>
SC324	<i>mat1-Msmt-0 REIIΔ mat2-P (Xba)::ura4<sup>+</sup> mrc1Δ(782-879) leu1-32 ura4-D18 ade6-216</i>
SC328	<i>h<sup>ΔK</sup> mat3-M(RV)::ura4<sup>+</sup> leu1-32 ura4-D18 ade6-210</i>

SC329 *mat1-Msmt-0 mat2-P (XbaI)::ura4<sup>+</sup> mrc1Δ::kanMX4 leu1-32 ura4-D18 ade6-216*  
SC332 *mat1-Msmt-0 mat2-P (XbaI)::ura4<sup>+</sup> mrc1Δ(782-879) leu1-32 ura4-D18 ade6-216*  
SC341 *h<sup>+</sup> ura4-D18 mrc1-K833A-F835A nda3-KM311 AUR1:aur1r-Adh1-TK-Adh1-scENT1*  
SC378 *h<sup>90</sup> mat3-M(RV)::ura4<sup>+</sup> mrc1Δ(782-879) leu1-32 ura4-D18 ade6-210*  
SC384 *h<sup>90</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1-M755A-F758A-L774A AUR1:aur1r-Adh1-TK-Adh1-scENT1 ura4-D18*  
SC392 *h<sup>+</sup> mrc1-M755A-F758A-L774A nda3-KM311 AUR1:aur1r-Adh1-TK-Adh1-scENT1*  
SC395 *h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1-R784A-K785A-R786A-N787A nda3-KM311 AUR1:aur1r-Adh1-TK-Adh1-scENT1 ura4-D18*  
SC396 *h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry AUR1:aur1r-Adh1-TK-Adh1-scENT1 ura4-D18 mrc1-R784A-K785A-R786A-N787A-K833A-F835A nda3-KM311*  
SC397 *h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry AUR1:aur1r-Adh1-TK-Adh1-scENT1 ura4-D18 mrc1-R784A-K785A-R786A-N787A-3FLAG:kanMX6 nda3-KM311*  
SC398 *h<sup>+</sup> mrc1-M755A-F758A-L774A-3FLAG:kanMX6 nda3-KM311 AUR1:aur1r-Adh1-TK-Adh1-scENT1*  
SC399 *h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mrc1<sup>+</sup>-3FLAG:kanMX6 mat3-M(RV)::mCherry ura4-D18*  
SC400 *h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry mrc1Δ(782-879)-3FLAG:kanMX6 ura4-D18*  
SC401 *h<sup>+</sup> ura4-D18 mrc1-K833A-F835A-3FLAG:kanMX6 nda3-KM311 AUR1:aur1r-Adh1-TK-Adh1-scENT1*  
SOM81 *h<sup>90</sup> (Xmnl)::ura4<sup>+</sup> mat2-P kint2::YFP mat3-M(RV)::mCherry ura4-D18*  
SP837 *h<sup>90</sup> leu1-32 ura4-D18 ade6-216*

**Table S2: Oligonucleotides used in this study, related to STAR Methods.**

<b>Oligonucleotide</b>	<b>Sequence</b>
GTO-760	5'-CCAGCCATATGGCATCTTTAGACGAGAACGCTG-3'
GTO-761	5'-CGTCGCGAATTCTTAGTCAAAGTCCGAGTAATTATTCAAAGAAGC-3'
GTO-1650	5'-TCAGCGTTCTCGTCTAAAGATGCCATCTGCAGCCAAGCTTGTGATATTGAC -3'
GTO-1651	5'-CGGATCCCCGGGAATTCGTAATCATG-3'
GTO-1652	5'-CATGATTACGAATTCCTGGGGATCCGTTAGTCAAAGTCCGAGTAATTATTC-3'
GTO-1653	5'-ATGGCATCTTTAGACGAGAACGCTGA-3'
GTO-1654	5'-GCTGAGCTTGATTTTCAGCAAGTTGC-3'
GTO-1655	5'- CTGGAGATTCGCATGGTTCTTCGAATATGA-3'
GTO-1660	5'-GCTTGGTTGACTGTTTTGAACATAAAGAG-3'
GTO-1661	5'-GGAAGAGGAAGCTAACTCAACTGAGCC-3'
GTO-1670	5'-GCGGCCGCTTATTCTGAGGCAAATCCTAAACGATCC-3'
GTO-1671	5'-GCGGCCGCTGTTGATACGGTCGATGATGCTCTTGTC-3'
GTO-1672	5'-CATGAAGAAGAAGAGCAAATGGAAGAGG-3'
GTO-1673	5'-ACCAGTAGTAACGTCTTTTCATTAGCTG-3'
GTO-1674	5'-ATGGCCGATGTGCAGCTGGTGGAGTC -3'
GTO-1675	5'-CTCTAGAGTCGATCGACCTGCAGGCATGC-3'
GTO-1676	5'-AGATCTCGACTCTAGAGGATCCGGCGC-3'
GTO-1677	5'-TCATGAGGAGACGGTGACCTGGGTCCCCTGGC-3'
	5'-
GTO-1682	GCATGCCTGCAGGTCGATCGACTCTAGAGAAATAAAATTTGGTATACAAAATTCACG-3'
GTO-1683	5'-GACTCCACCAGCTGCACATCGGCCATCTCCGAACCCTCAGCACCAGAAGC-3'
GTO-1704	5'-CATTTTTTATAACTGGTGAAGTATTAAG-3'
GTO-1705	5'-AAGTCACCTAGCTTAGCAGAAC-3'
GTO-1706	5'-TTGACTTACAACCTCAAAGCAGG-3'
GTO-1707	5'-GCGAATGAAGGCCAATTATATTGC-3'
GTO-1781	5'-GAATGAGGATGACATTGATGCTGAGCTGGAAATTG-5'
GTO-1782	5'-CAATTTCCAGCTCAGCATCAATGTCATCCTCATT-3'
GTO-1783	5'-GCAGCTTTGGACGATGCTGACGATGAAGATTACAG-3'
GTO-1784	5'-CTGTAATCTTCATCGTCAGCATCGTCCAAAGCTGC-3'
GTO-1686	5'-ATAGATGAAATGTGTATACATG-3'
GTO-1687	5'-TGTGGACAGGTAATGGTTGTC-3'
GTO-1894	5'-AGCTGCAGCCAAAGCTGCAAATCCATTCC-3'
GTO-1895	5'-GCTGCTGCAGCTTACAGTAATTTGCGGCGC-3'
GTO-1896	5'-GGCCCTTTTATCACCTTCTAAGAC-3'
GTO-1897	5'-GCAGCTTTAGCTACTGTTGAAGACAG-3'
GTO-2018	5'- CGCTGCTAGAGCACCAGTAGTAACG-3'
GTO-2019	5'-GCGGCTAGGAATGGATTTGCAGC-3'
GTO-2035	5'-CCATTTCTTGATCTTTAGCGGCTTGTGCCGCTGAAGCTACCTCGCC-3'
GTO-2036	5'-ATCGTGATGAAAAGTTAGTAAAACAGGCAATGAAAGACGTTACTACTGG-3'
mcm2-HBD F	5'-GGACATCATTATTGTTCTAGATATG-3'
mcm2-HBD R	5'-GTGCGACTAGTTACGACACCAGATA-3'
mcm2-HBD_mut F	5'-GAGCTAGATCGTGCTGACATTGAAG-3'
mcm2-HBD_mut R	5'-CAAATTTTGTGAGCATCACTATAACAG-3'
Claspin_sgRNA#1	5'-GAGGTGTCAGGCAGTGACGT-3'
Claspin primer F	5'-TTCTCCCAATCCTGACAGCTG-3'
Claspin primer R	5'-TAGGCAAGCATCTCTCTCCAGC-3'
Mrc1(Bam) fwd primer	5'-CATCACCACCATGGATCCATGGCATCTTTAGACGAGAACGCT-3'
Mrc1(Bam) rev primer	5'-ctgcagctcgaggatccGTCAAAGTCCGAGTAATTATTCAA-3'