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Transcription-induced formation of extrachromosomal DNA during yeast ageing

5\DQ 0 +16X 0P00 LFKHOOH* .LDJLD 3^E))DIOL[.U 6HJ,DE LHU 9 16U^J DUD



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Data Availability StatementAll relevant data are within the paper and its Supporting Information files. All sequencing files are available from the GEO database (accession number GSE135542).

Abstract

([WUDFKURPRVRPDO FLUFXODU '1\$ HFF'1\$ IDFLOLWDWHV D DQG H[WHQVLYH JHQH FRS\ QXPEHU YDULDWLRQ DQG LV LPSO DJHLQJ +HUH ZH GHPRQVWUDWH WKDW \HDVW DJHG XQGHU KLJK OHYHOV RI HFF'1\$ FRQWDLQLQJ WKH FBSQWUHSWLVVODFWDQGHPO\ &HSHBWHGD&83HFF'1\$ DFFXPXODWLRQ ZKLFK RDEVHQFH RISKHQRW\SLFVHOHFWLRQ :HKDYHGHYHORSHG I VHTXHQFLQJ SLSHO&QHWKFDW\$DHFYHDDQDWLRQRQFRSSHUH FpXK%LWR0PpTWIB/SCHWLEFVZD Wp%QR REWFOXU 6M@HGBD'EAC DEXQGDQW Z&H8GFWK\$Q/RHV QRW UHSOLFDFWH HIILFLHQWO LQDJHG FHOOV DULVH WKURXJK IUHTXHQW IRUPDWLRQ HYHG UHJDWLRQ 7KH WUDQVVFU&\$3VLRQD\$DVRWEDXQLRQLRQZV WKD JHQHWLF FKDQJH YDULHV ZLWK WUDQVFULSWLRQ SDWWHUORUHG E\ HQYLURQPHQW

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MPDVYBOT@VFS SPVOETPGUSFBUNFOU TBNQMFTBSFSFVOJUFE GSBHNFOUFE BOEB
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BMMFMF XFSF OPU EJGJFSF50FUSJBMMSZ F BDD%/" BDDVNVMB
CUP1 MPDVT QSPNPUFE CZ USBOTDSJQUJPO JT SFNBSLBCMZ
3&\$ TFR JT NPSF TFOTJUJWF UIBO 4PVUIESPO CUP1UBIMMFMFH %"HBJO
BDDVNVMBUJPO JOB TUSBJO XJUCUP1OMPZ VTB O EJTNSDFRCSJFTF
HFOFSBM DBTF CFDBVTF MPDJ DPOUBJOJOH TNBMM OVNCF
PUJD HFOPNFFD%/" CUP1UBIMMFMFH %"HBJO CZ TDBUUF S QMPU
UIFEJGGFSFODF BQQSPYJNBUMZ GPME XBT TNBMMFS
OPU VOFYQFDUFE CUP1UBIMMFMFH %"HBJO CZ TDBUUF S QMPU
HFOPNF XJEF QSPGJMF PG FDD%/" XBT NPSF BGGFDUFE CZ
EVF UP HSFBUFS DPQQFS TUSFTT BOENBOZ' BDD%/" BDDVNVMBUJPO
FWFS FEHF3 BOBMZTJT PG EJGGFSFOUJBM BDDVNVMBUJPO
TJHOJGJDBOU SFHJPOT NPTU PWFS SFQSFTFOUFE JO UIF
CUP1 MPDVH CMVF E-PUT CZ &EHF3 "EEJUJPOBMMZ FDD%/"
NFOU MPDJ XBT TJHOJGJDBOUMZ VOEFS BDDVNVMBUFE JO
TPNF TVCUFMPNFSJD TJUFT XBT TJHOJGJDBOUMZ PWFSBD
BWFSBHFOJNFTH
5IFSGPSF FDD%/" BDDVNVMBUJPO DBVTTFE CZ USBOTDS
PCTFSWBCMF FWFO JO MPX DPQZ UBOEFN SFQFBUT

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DFMTH8F PCTFSWFE BT JN6IMBOEF7IGNVUBCOU TUIBUSFEF
&3\$BTZNNFUSJD TFHSFHBUJPO EVF UP CVE OFDL GPSNBU
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TNBMM BQQSPYJNBUEFMZ GPME SFMBUJWFURUP1FEJGGI
FDD%/" JO UIF QSFTFODF PS BCTFODF PG DPQQFS BQQSPY
5PHFUIFS UIFTF FYQFSUPNFDD%/"IPTXTUMGKFDU UP BTZNNF
CVU UIJT JT JOTVGGJDJFOUBTPSDNB%/"OUTFOPODFGGDBBFOEM
CUP1 FDD%/" NVTU UIFSFGPSF CF GPSNFE BU B IJHI FOPVHI S
UISPVHITFHSFHBUJPO UP EBVHIUFS DFM MT

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CZ 1BVM TFO BOE DP 5MMEBMMJNFJU<UIF FDD%/" GPSNBUJPO NF
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%4# EPVCMFTUSBOE CSFBL FDD%/" FYUSBDISPNTPNBMDJSDVMS %/
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<https://doi.org/10.1371/journal.pbio.3000471.g006>

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BCTFODF PG SFJOUFHSBUJPO BO FDD%/" XJUI BO BDUJWF
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IFUFSPHFOPVTMZ EJTUSJCVUFE FDD%/" NFBOT UIBU BMM
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KWWSV GRL RUJ 30,LHQFH

3UDGR) \$JXLOHUD\$,PSDLUPHQWRIUHSOLFQDWLRQIRUN SURJUHVV
DWHG UHFRPELQDWLRQ (0%2- KWWSV GRL RUJ 30,HPERM
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3XE0HG & HQWUDO 30&,' 30&
)UHQN 6 3LJJD* :DONHU 59 +RXVHOH\ - \$JLQJ\HDVW JDLQ DFRPSHW
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