

Supplementary information, Table S2 List of primers used in this study.

(A) Primer sequence used in RT-PCR and qRT-PCR analysis.

ACTIN-qF: GCTCGTCGTCGACAACGGCTC

ACTIN-qR: CAAACATGATCTGGGTCATCTTCTC

CCAT1-L+S-q1F: ACGGTGACAGGTCATTAGGC

CCAT1-L+S-q1R: TTAAGTGCCTGAGCTCCACCT

CCAT1-L+S-q2F: ACTGCAGTAGGAAGGGAGCA

CCAT1-L+S-q2R: GTAAGCACTGGCCTTTCTGC

CCAT1-L-qF: CCACGTGCACATATTTGAATTG

CCAT1-L-qR: TGCATTCCCTGCTTAATACTCA

XIST-qF: GCAGGTCCAAGAAATTTGAACAC

XIST-qR: AGAGTGCCAGGCATGTTGATC

CTCF-qF: GTGTTCCATGTGCGATTACG

CTCF-qR: TCATGTGCCTTTTCAGCTTG

MYC-qF: TTGGCAGCAGGATAGTCCTT

MYC-qR: TGGTGCTCCATGAGGAGACA

FAM84B-qF: GTGCAAATGACCCTGGAGTT

FAM84B-qR: CCGTGGGAACTTCCTTGTA

sno-lnc5AC-qF: TTAGTCAGCTCAGGCCAGT

sno-lnc5AC-qR: AAGTGCTCCACCAACTCCAG

GAPDH-F: GGTATCGTGGAAGGACTCATGAC

GAPDH-R: ATGCCAGTGAGCTTCCCGTTCAG

ANKRD52-qF1: ACTGGATAACGGTGCAGACC

ANKRD52-qR1: ATGGTGCTCTCCACATCCTC

(B) Primer used in NRO.

Run-on-Myc-1F: TTCCAGAACAGCTGCTACCC
Run-on-Myc-1R: CCTCCCTTCGCACTCAATAC
Run-on-Myc-2F: TCCACCTCCAGCTTGTACCT
Run-on-Myc-2R: GCTGTCGTTGAGAGGGTAGG
Run-on-Myc-3F: GGCTGGATACCTTTCCCATT
Run-on-Myc-3R: AAGCCCAAGGTTTCAGAGGT
Run-on-Myc-4F: AAAGGCCCCCAAGGTAGTTA
Run-on-Myc-4R: AGCTTTTGCTCCTCTGCTTG

(C) Primer sequences used in CTCF ChIP.

CTCF-CCAT1-1F: TCATAATGCGGAAAGGGAAG
CTCF-CCAT1-1R: AGTCCTTCCTGCTGACTCCA
CTCF-CCAT1-2F: TTTGGGCAGACACTGACTTG
CTCF-CCAT1-2R: AAGCAGAAACAGGACCCAGA
CTCF-SNP-3F: CAGCAGATGAAAGGCACTGA
CTCF-SNP-3R: CTCCCTCCCCACATAAAAT
CTCF-MYC-4F: GCATTTGCTTTTCGGTCAAT
CTCF-MYC-4R: CTTGCTTCGGTTCATCAAT
CTCF-MYC-5F: TGCAGCAAATCCAGCATAG
CTCF-MYC-5R: TGCACTGCACAATTCAGCTT
CTCF-MYC-6F: GGCACCTTGCCTGGAAGCTT
CTCF-MYC-6R: GCAAGGAGAGCCTTTCAGAG
CTCF-MYC-7F: GCCGATTTGATTCCTCTG
CTCF-MYC-7R: GCTATCTCGGAGACGCACTT
CTCF-Nctrl-8F:GACAAGCATTGTGCTGGAGA
CTCF-Nctrl--8R:TCTAAAGACCATCGGCTGCT

CTCF-Nctrl--9F:AAGCCTGCCTGCTGAAAGTA
CTCF-Nctrl--9R:CAGCTCACTCTGTGGGTTGA
CTCF-Pctrl-chr6F: CAGCTCTGTGTCCTGTCTTATCC
CTCF-Pctrl-chr6R: CAGCTATAATTGATGAAGAGGCG
CTCF-Nctrl-F1: CCACTGCTCAGCCTTAGAGGAA
CTCF-Nctrl-R1: GTTTGTCTGGTTTTTGC GTGTG
CTCF-Nctrl-F2: TGCCATGCGTTGAAAATATCC
CTCF-Nctrl-R2: TGCTTTCTGAAGTTGCCAAGC

(D) Primer sequences used for Northern blots.

MYC-probe-F: AGAGAAGCTGGCCTCCTACC
MYC-probe-R-sp6:
CCAAGCTATTTAGGTGACACTATAGAAAGCTTTTGCTCCTCTGCTTG
CCAT1-probe-L+S: CCAGGGAGCCCTAAAACATT
CCAT1-probe-L+S-R-T7:
TGAATTGTAATACGACTCACTATAGGGAGGCTGGTCTGTGTGTGCTTTGG
CCAT1-L-F(Chr8-3-F): ACATGCAGTTCAACCCCTTC
CCAT1-L-R(Chr8-3-R): GCTGAAaATCTGCCTGCCTA
EGFP-F: CACATGAAGCAGCACGACTT
EGFP-R: AGTTCACCTTGATGCCGTTC

(E) Primer sequences used in biotin pull-down.

CCAT1-L-#1-F-HindIII: CCCAAGCTTCCAGGGAGCCCTAAAACATT
CCAT1-L-#1-R-EcoRI: CCGGAATTCAGTGCAGTAGGAAGGGAGCA
CCAT1-L-# 2-F-HindIII: CCCAAGCTTGTAAGCACTGGCCTTTCTGC
CCAT1-L-# 2-R-XhoI: CCGCTCGAGGGGAGGAATGGGAGAGAGAG

CCAT1-L-# 3-F-HindIII: CCCAAGCTTGGCATGCTTGCTCAGTCTCT
CCAT1-L-# 3-R-XhoI: CCGCTCGAGTGTTTGTGTATGCGTGTGTTTC
CCAT1-L-# 4-F-HindIII: CCCAAGCTTTATACACCCTCCCTCCCACA
CCAT1-L-# 4-R-EcoRI: CCGGAATTCAACAACCTCTGCTGATGGCTGT

(F) ASO sequences used to knockdown *CCAT1-L*.

CCAT1-ASO: mAmGmCmCmAGATCTGCAA mGmGmAmAmA

(G) Primers used in plasmids construction and validation of *in-cis* over-expression of *CCAT1-L* with modified TALEN A.

CCAT1-HF(HindIII): CCCAAGCTTTGGCCAGGTACATACCTGGC
CCAT1-HR2(KpnI): GCCGGTACCTGCTTAACACGGCAGCTGGTA
CCAT1-HL2(BamHI): GCGGATCCTTGCGAAAACGCTCACGATTC
CCAT1-HR(XhoI): CGGCCTCGAGGTATATGTGTTAAAGTGTTAACAG
CMV-F(KpnI): GCCGGTACCGCGTTGACATTGATTATTG
CMV-R(bridge): GTGGGCTTGTA CTGCGTCATGGTGGCCGTACGCCC
Puro-F(bridge): GGGCGTACGGCCACCATGACCGAGTACAAGCCCAC
Puro-R(bridge): CTCTGCCCTCTCCACTGCCGGCACCGGGCTTGCGGGTC
T2A-F(bridge): GACCCGCAAGCCCGGTGCCGGCAGTGGAGAGGGCAGAG
BGH-R(BamHI): GCGGATCCTGTGATGCAATTTCTCAT
CCAT1-ValidF: CTTCAGGCCATAGTCACTGGTG
CCAT1-ValidR: GCAGGGCTGGCCAGGTCAGTGC
CCAT1-ValidR2: AATAACTGTAAAGAGTAAGGGTCC
BGH-F(EcoRI): CGGAATTCCGACTGTGCCTTCTAGTTG
BGH-R(BglII): GGAAGATCTCCATAGAGCCCACCGCATC
SV40-F(BglII): GGAAGATCTTGATCATAATCAGCCATAC

SV40-R(BamHI): CGGGATCCTAAGATACATTGATGAGTT

(H) Primer sequences used in 3C assay.

Bait 1: CTATTAATTGAGAGGTTATTGTGTGTTAGG

Bait2: ATGAAAGCATATCTATCTAGAGTGTTGAAG

Bait3: GAATTTGTATTATATGAACTGAGAATGAGG

1: CTAGGGTTCATATTTAGCTTAATTCTAT

2: TCTAGATTTCCCTTTAAAGTCCTTGTTTTAG

3: AGTCATCTATAATGTCTCTCACACATCTTT

4: GTATGTATGTATACAGGAATGAACAAACAA

5: TAAAAACAGAACAAAGTTGAAGGACTAATA

6: CTCTCTATATACGATTAAAACTGGGTTAGG

7: TTTTCTTTTTACCTATGACAAAACACTTTA

8: GTTAGAAGAATAATTAGAAGTTGGATGGAA

9: AGCTATACTTATTGAAACAAACCCTTTAGT

10: GTAAAAGGTAGCCTTTCTTCTCTCATAGT

11: CTATGTCCTATAATTCTAGCCAACAAAGTA

12: GTTAGAAGAATAATTAGAAGTTGGATGGAA

13: TTTTCTTTTTACCTATGACAAAACACTTTA

14: CTATTAATTGAGAGGTTATTGTGTGTTAGG

15: CTAGGGTTCATATTTAGCTTAATTCTAT

16: AACAGTATATGATATGATTTGGATGTTTGT

17: GAAGTAGAACAAGTTGGTAGAATATGAGAA

18: GTATGTATGTATACAGGAATGAACAAACAA

19: GTATTAAATAGGAACAATGCCTAATTCTG

21: AAATCTACCCAGAAAGTCTAATTAATCC

22: AGCTATACTTATTGAAACAAACCCTTTAGT
23: GTTAGAAGAATAATTAGAAGTTGGATGGAA
24: TTTTCTTTTTACCTATGACAAAACACTTTA
25: CTACTTTCCCAGTTTAGACTACTAGTTTCC
26: CTATTAATTGAGAGGTTATTGTGTGTTAGG
27: CTTTAGATAAAATTCTTTCTTATTGGGTGT
28: GAAGTAGAACAAGTTGGTAGAATATGAGAA
29: GTATGTATGTATACAGGAATGAACAAACAA
30: TAAAAACAGAACAAAGTTGAAGGACTAATA
beta-globin-1: ATTCTGTGAATGTAGGTATGTGTTAAAAGT
beta-globin-2: AGAGGTTCTTGTTGTCTTTTGTTTGTCT

(I) Primer sequences used in 3C-Seq assay.

p5-Scr-3C-seq-CCAT1-F:

AATGATACGGCGACCACCGAACACTCTTTCCCTACACGACGCTCTTCCGATCTGCCAA
TCTTCTACTGATTGGCCCTAAAC

p5-ASO-3C-seq-CCAT1-F:

AATGATACGGCGACCACCGAACACTCTTTCCCTACACGACGCTCTTCCGATCTATGTC
ACTTCTACTGATTGGCCCTAAAC

p7-3C-seq-CCAT1-R:

CAAGCAGAAGACGGCATAACGACAGTAGTGGGTCTTAATGCTTG