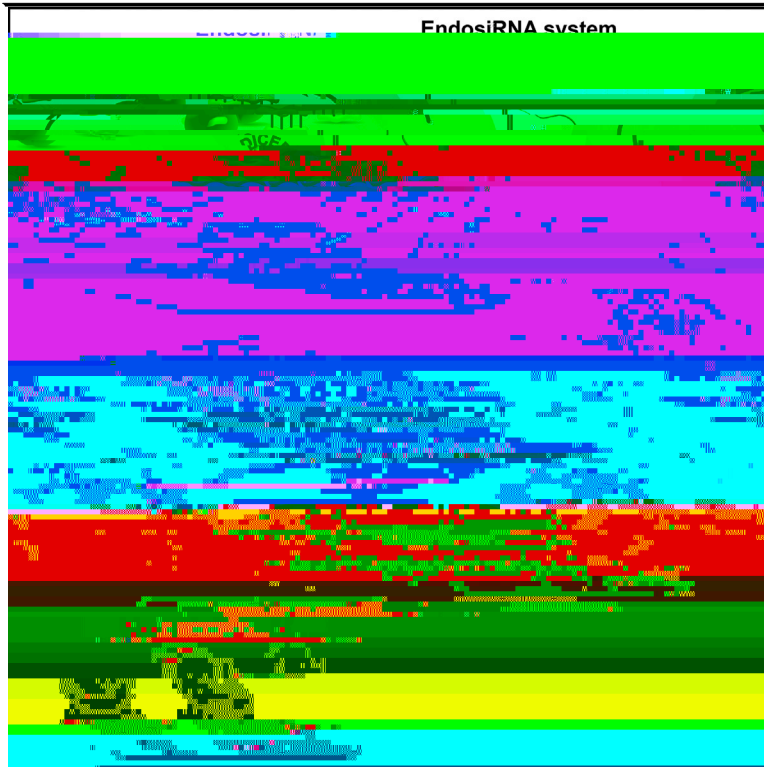


Cell Stem Cell

An endosiRNA-Based Repression Mechanism Counteracts Transposon Activation during Global DNA Demethylation in Embryonic Stem Cells

G a b c a . A b a c



A d

R b c c a V. B , S e A d ,
D e S b , ...
H a K ,
F d a d M , W . R

C d c

b c c a . b @ a . c (R.V.B.),
@ b a a . a c (F. .M.),
@ b a a . a c (W.R.)

I B

Cell Stem Cell, B
a . c a a b .
b d RNA d . b a .
DNA d a d c d
b c c . T d
c d a " d a " b
a a c c d b
d RNA d b " c c /
" c b
d c a .

H

- G . b a . DNA d a b c c . a d a a c a
- T a a c a c a a b d a c / a a c
- ARGONAUTE2-b d d RNA a c c a a a c
- L - a d d a

A

RNA-B

R

M

.2

1T.4312433.4T

2

T

GC
DNA

R

S

21
H3

2

2R

T

211

.T

TE

TE H

.

TE

~50%

DNA

A



B

C

NA
 E (C H, 2014).
 NA (NA) -
 NA (F, 1998),
 E (, 2005).
 H
 E
 . G Dicer
 Ago2 E C
 Dnmt1 (KO)
 NA-
 E " "

RESULTS

Acute Dnmt1 Deletion Leads to TE Demethylation in ESCs

O PGC

NA- NA-

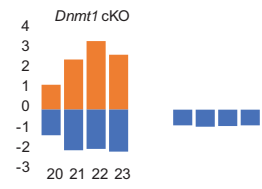
NA- NA-

NA- NA-

NA- NA-

NA- NA-

NA- NA-



E

L1M G (F 3

DICE

,

12
12
12

12
12

12

KOE C

C , C., H , J. (2014). E NA . L 3, 01581.

D , N., O -H , H., - , K., , K. (2003). - NA- . C . B . 13, 41 46.

F , A.C. (2011). G : . N . G . 12, 565 575.

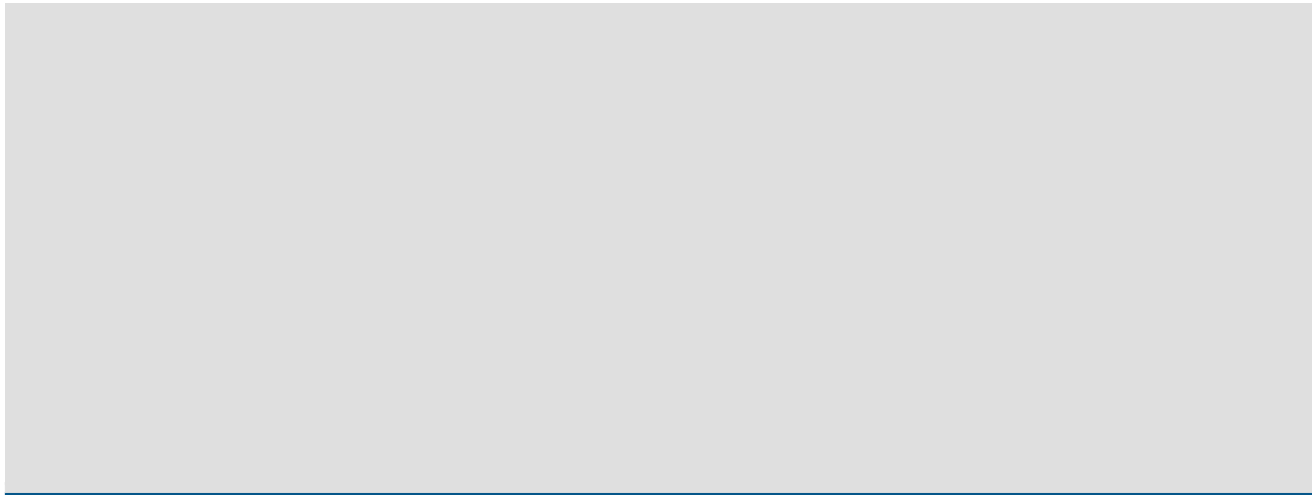
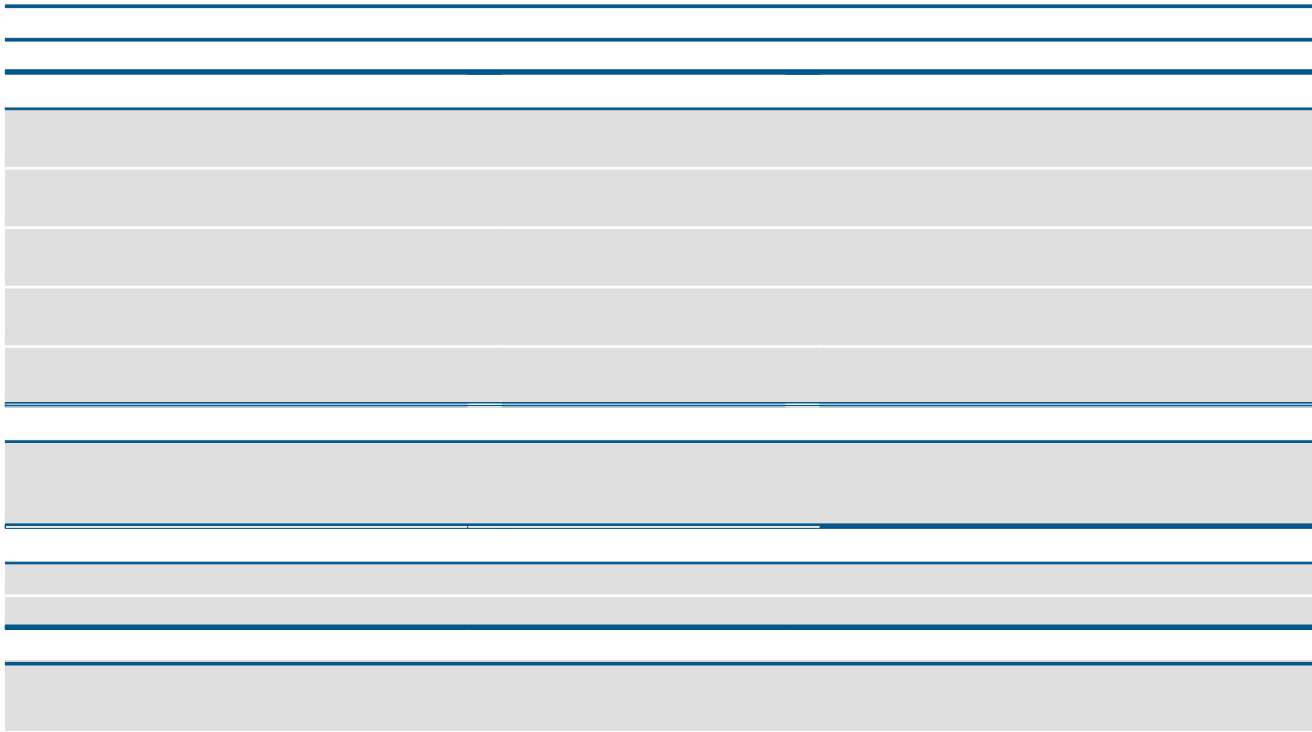
F , A., , M , M.K., K , A., D , .E., M , C.C. (1998). P . NA C . N 391, 806 811.

F , M., M , F , N , J., , K., , P. (2013). A - NA . C 155, 807 816.

G , M., P.D. (2009). NA : . N . G . 70, 94 108.

G , J.L., K , H.H., J. (2008). : . C 135, 23 35.

H , D. (2016). : - . B E



CONTACT FOR REAGENT AND RESOURCE SHARING

F B (). AGO2 EMBL, L C ,
P . D O'C E M A

EXPERIMENTAL MODEL AND SUBJECT DETAILS

Cell lines

M (E C) . Dnmt1 P/ P E C (C57BL/6) H
K , IKEN C I M C , J (, 2016). Dicer/Dnmt1 DKO, Ago2/Dnmt1
DKO, Dicer KO Ago2 KO E C Dnmt1 P/ P E C C I P /C 9
3.

Mice

A *in vivo* PGC



C57B/6J



C57BL/6J



O 4-GFP

0.3 MN C DNA H B 4°C. DNA E OH
K L 50 E M E PE I H 2500 . H -

Total RNA-seq libraries

N ' I N

