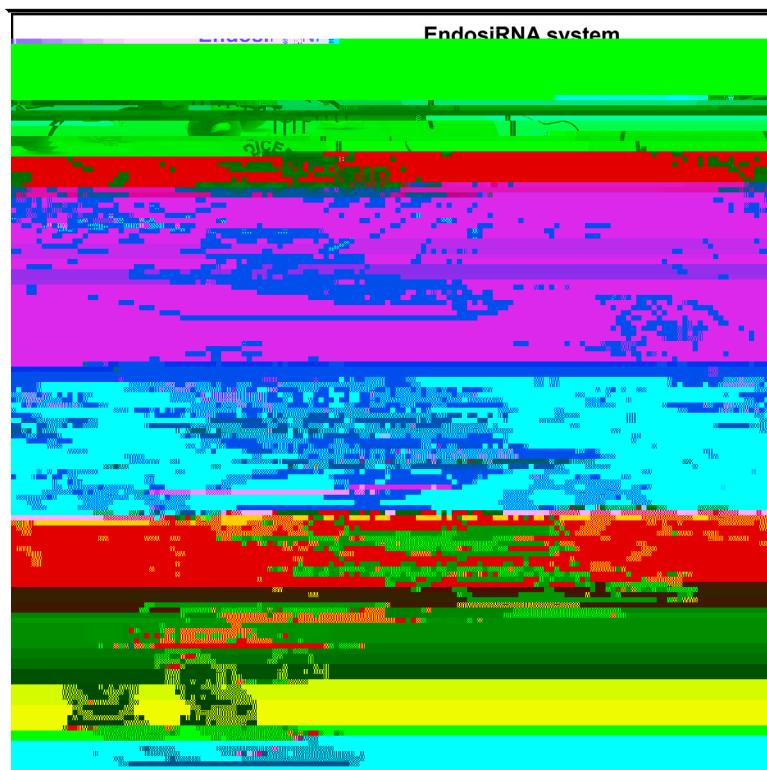


An endosiRNA-Based Repression Mechanism Counteracts Transposon Activation during Global DNA Demethylation in Embryonic Stem Cells

G a ca Ab ac



A

R b cca V. B , S , A d ,
 D , S , b , ... ,
 Ha , K ,
 F d a d M , W , R

C p d c

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

I B

I Cell Stem Cell, B
 a. p c a ab.
 b d RNA d ba.
 DNA d a d c d .
 b c c T d
 c da " da " p
 a acc b d b
 d RNA d b "c c/
 " c b p
 d ca .

H

- G ba DNA d a a b c c ad
 a p ac a
- T a p ac a c a ab da c /
 a a c p
- ARGONAUTE2-b d d RNA acc a a
 ac
- L - a p a p d d p
 a



A

RNA-B

R

M .2

1T4312433.4T 2

T

GC
DNA

R

S

21

H3

2R

T

211

.T

TE H

TE

TE

~50%

■

■

■

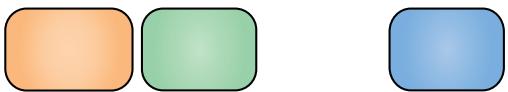
■

■

■

DNA

A



B

C

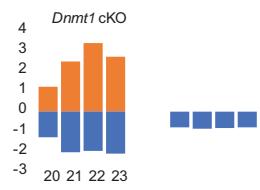
NA
E (C H , 2014). NA (NA)
NA (F , 1998), E (, 2005).
H E
E Ago2 Dicer
Dnmt1 (KO)
E

RESULTS

Acute Dnmt1 Deletion Leads to TE Demethylation in ESCs

O PGC

NA-
S S S S S S S S



E ⚡ ⚡ ⚡ ⚡ ⚡ DICE ⚡ ⚡ ,
L1M G (F ⚡ 3

✓ ✓ ✓ ✓ ✓

KOE C

● **AN IFICA ION AND A I ICAL ANAL I**
 B C IP-
 B NA-
 B NA-
● DA A AND OF A E A AILABILI
SUPPLEMENTAL INFORMATION
 ● **DOI:** <https://doi.org/10.1016/j.molcel.2017.10.004>.
AUTHOR CONTRIBUTIONS
 ● **CON AC FO EAGEN AND E O CE HA ING**
 B C
 B M
● ME HOD DE AIL
 B DNA/ NAE
 B NA
 B AGO2 IP
 B NA
 B C I P
 B F
 B CD4
 B In vivo PGC
 B C
 B GB

STAR+METHODS

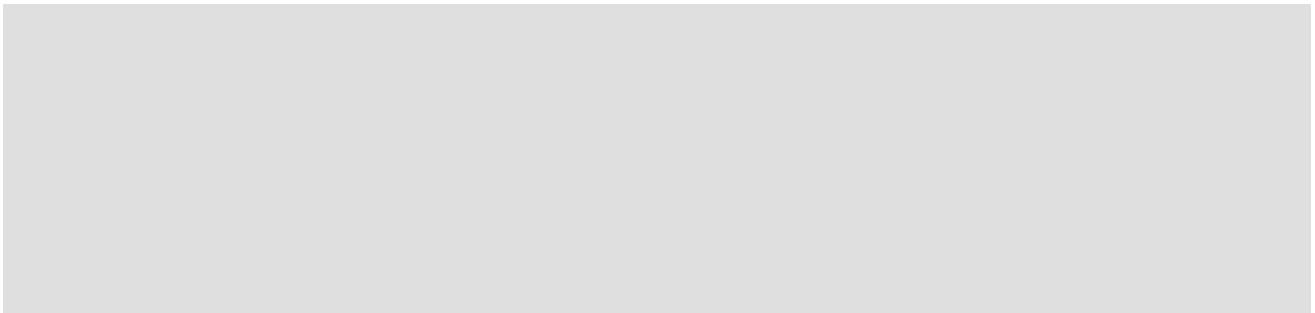
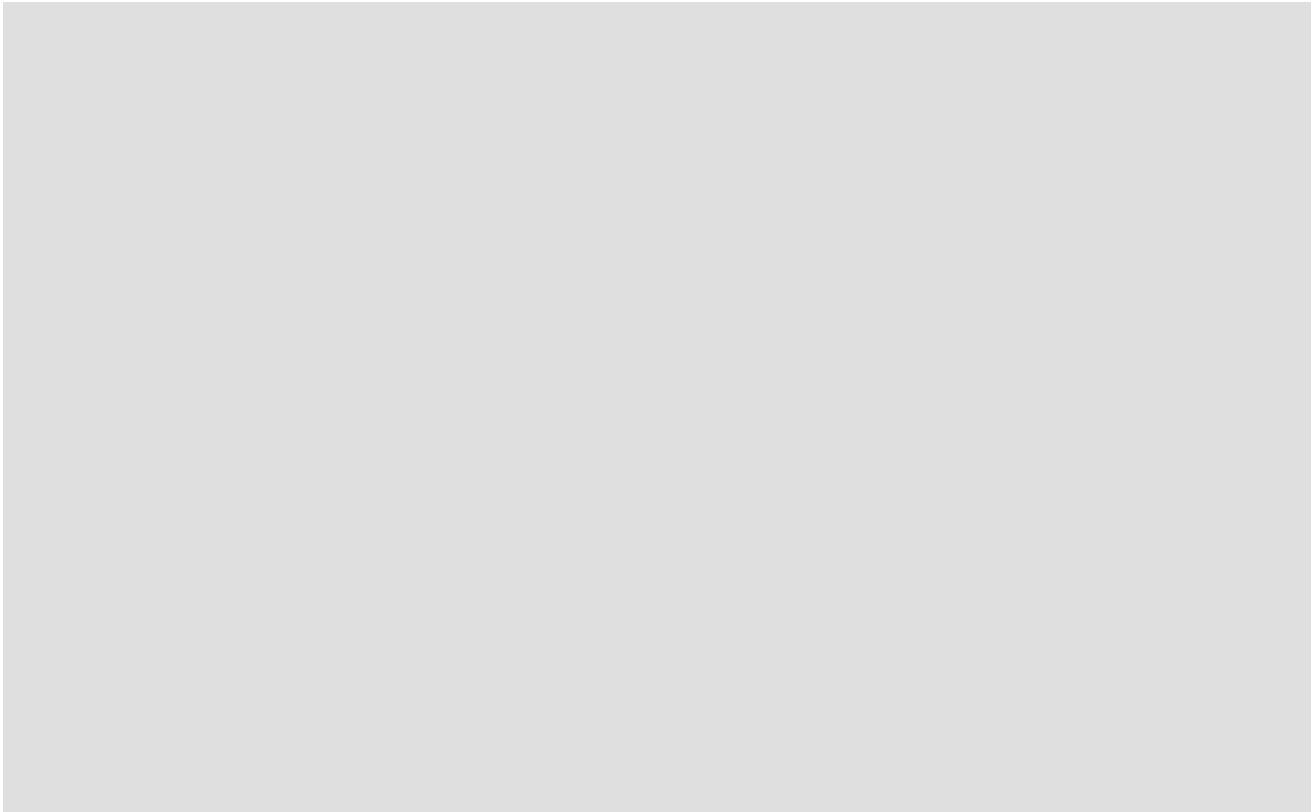
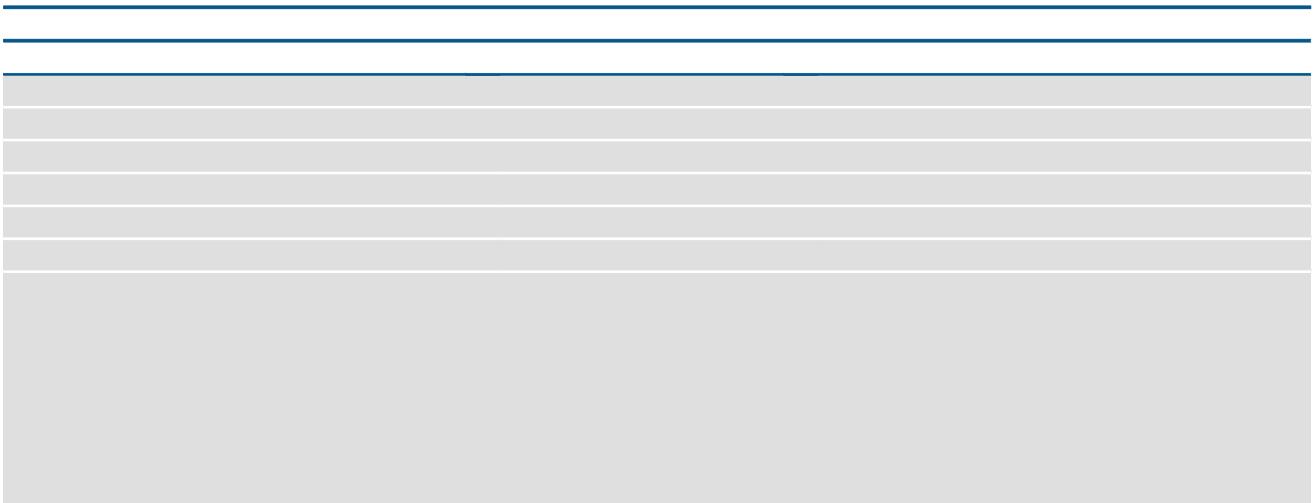
● **KE E O CE ABLE**
 ● **CON AC FO EAGEN AND E O CE HA ING**
 ● **E PE IMEN AL MODEL AND BJEC DE AIL**
 B C
 B M
● ME HOD DE AIL
 B DNA/ NAE
 B NA
 B AGO2 IP
 B NA
 B C I P
 B F
 B CD4
 B In vivo PGC
 B C
 B GB

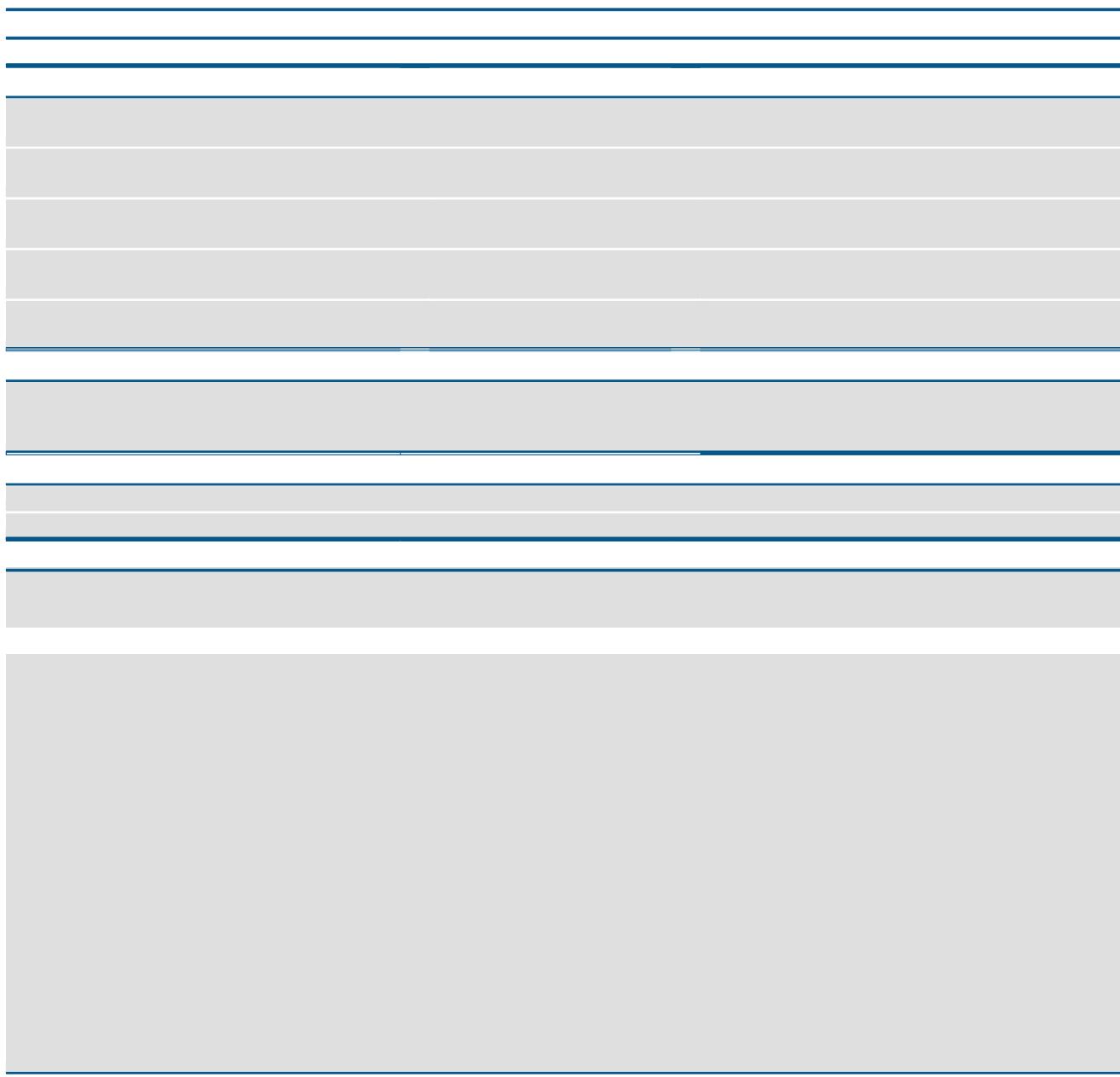
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STAR+METHODS

KEY RESOURCES TABLE

EAGEN	E	O	CE	O	CE	IDEN	IFIE
A							
-CD4				M	B	C #: 130-045-101	
A F 647,	-	-	I G		F	C #: A-21236;	ID: AB 141725
A F 568	-	-	I G		F	C #: A10042;	ID: AB 2534017
A -N P A ,				A		C #: 80892;	ID: AB 2150114
AGO2				D . O'C		N/A	
H H3K9 -3				A M		C #: 61013;	ID: AB 2687870
H3K27 -3-				A M		C #: 39155;	ID: AB 2561020
H H3K9 -2				A		C #: 1220;	ID: AB 449854
B							
E. : O	OP10				F	C #: K450001	
C , P ,			P				
				-A		C #: 5648-1G	
LIF				C I C		N/A	
N /D				-A		C #: D6750-10G	
N-				-A		C #: 61739-5G	
				N E B		C #: 1402	
L 2000				F		C #: 11668027	
P G- D				F		C #: 10003D	
HF + M				KAPAB		C #: KK2801	
4 NAL -2,				N E B		C #: M0242	
				-A		C #: 9424-200ML	
P / / (25:24:1)				L		C #: 15593031	
-100					-A	C #: E 9690	
D -(DM O)				F		C #: -20684	
A				-A		C #: A9518-5G	
P /				F		C #: 15140122	
L-				F		C #: 25030081	
N -				F		C #: 11140050	
2-M - (50 M)				L		C #: 31350-010	
N A				F		C #: EN0531	
O P I C				-A		C #: 00000001169 7498001	
P K				F		C #: EO0491	
P - 16%				A		C #: AG 1026	
G					-A	C #: G9391	
D					-A	C #: D0632-1G	
F B (FB)				C I C		N/A	
DMEM (H G) /L-G ;							
N P							





CONTACT FOR REAGENT AND RESOURCE SHARING

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

EXPERIMENTAL MODEL AND SUBJECT DETAILS

Cell lines

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

Mice

A *in vivo* PGC C57B /6J C57BL/6J O 4-GFP



0.3 MN C μ DNA H B . . 4°C. μ DNA E OH .
K L . . 50 E M E PE I H 2500 H .
Total RNA-seq libraries N N .



DATA AND SOFTWARE AVAILABILITY

D 1. GEO: G E89698.