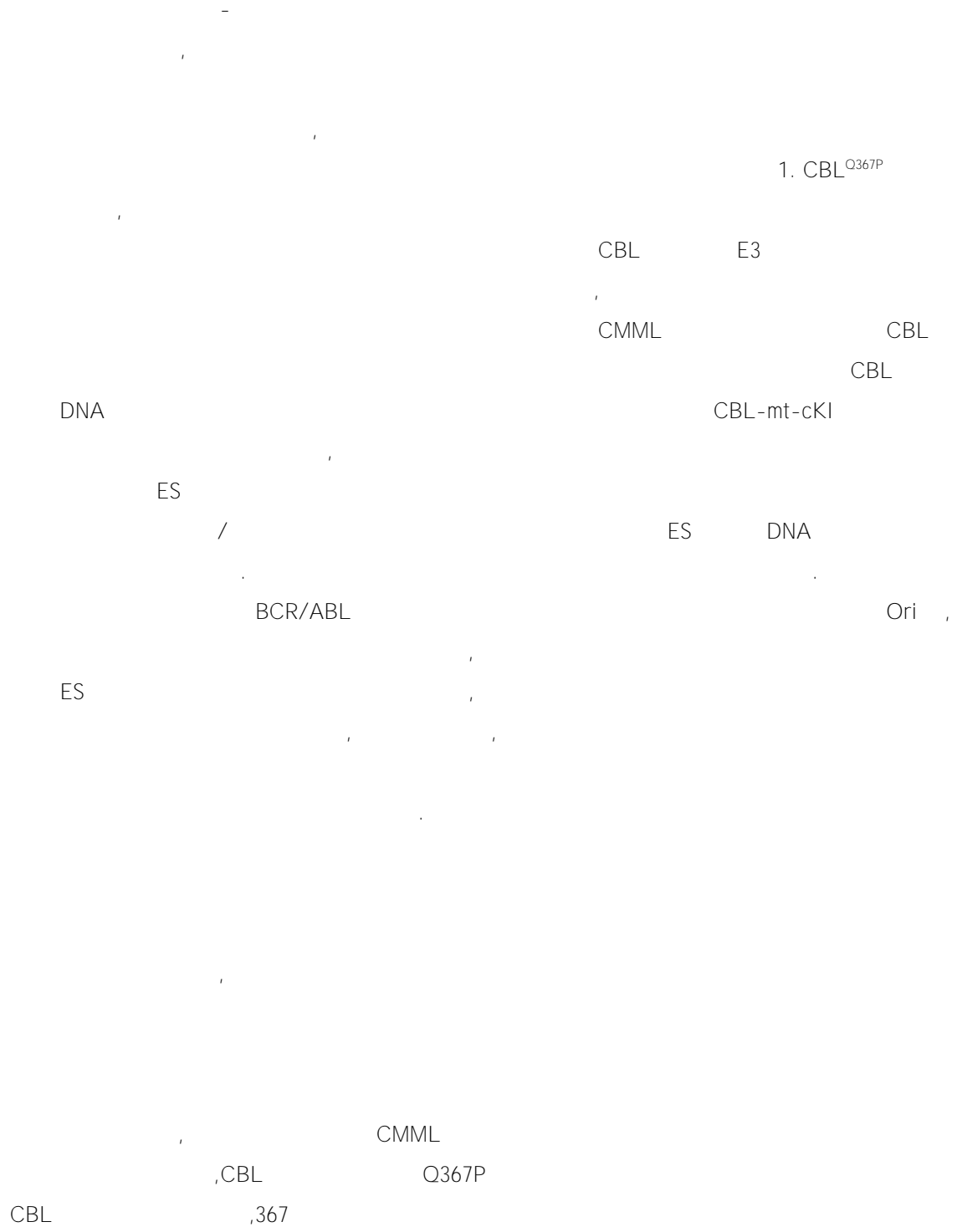
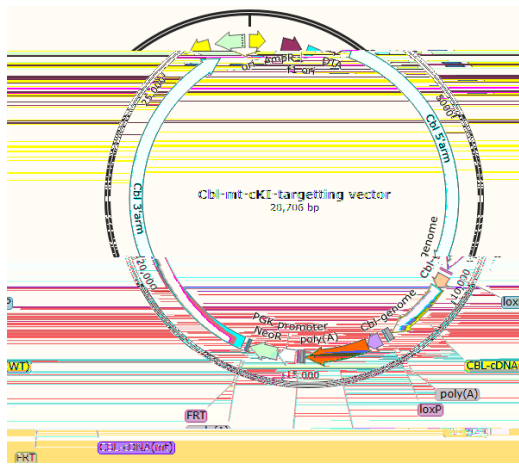
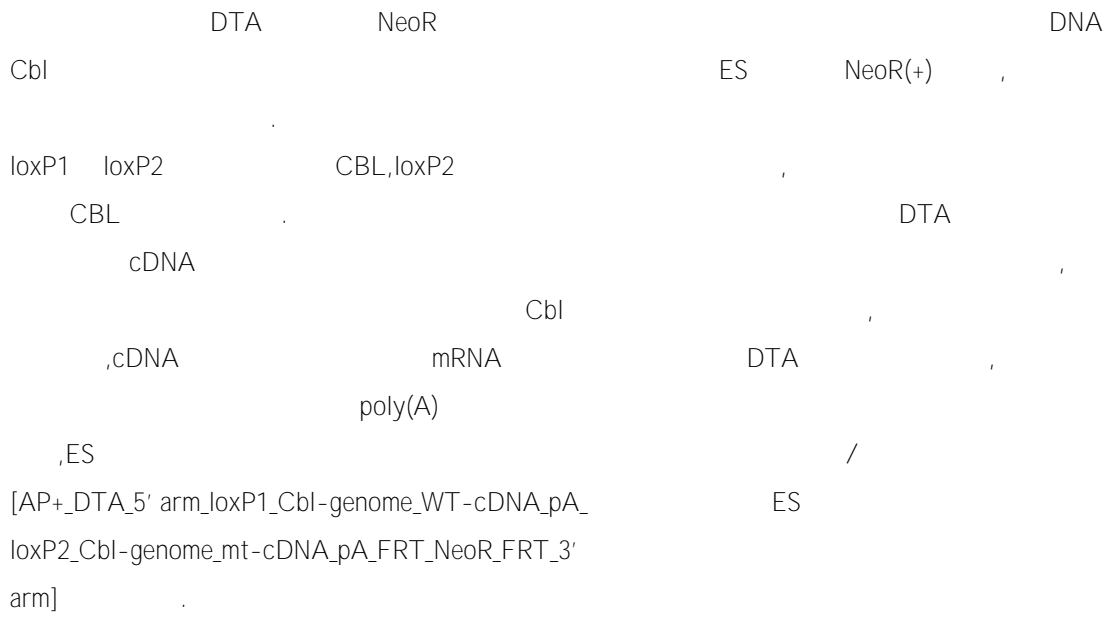


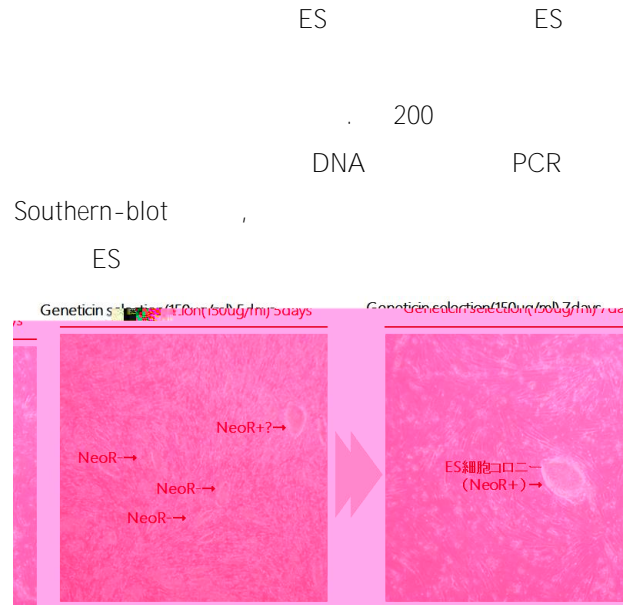
(Ogawa S. et al.

Nature. 2009).

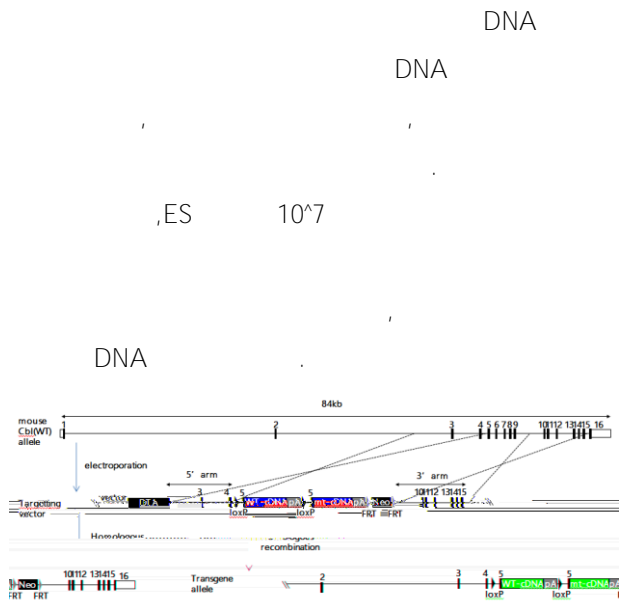




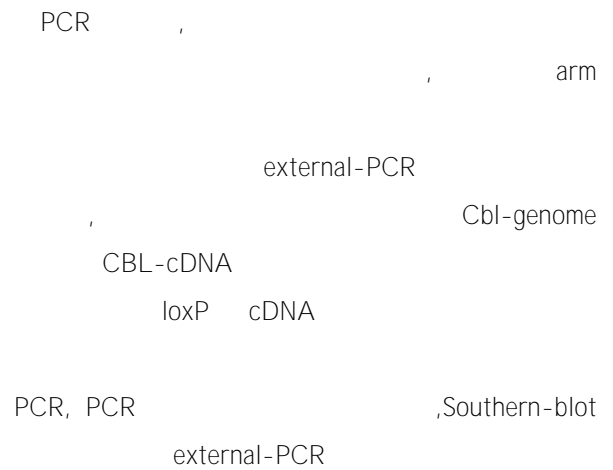
3. CBL-cKI



5. ES



4. Cbl



6. PCR/Southern-blot

PCR/Southern-blot

ES

‘
‘

7. ES

ES 129 ()
C57BL/6

ES

,CBL-mt-cKI/Mx-Cre

Mx1

GTP

CBL-mt-cKI/Mx-Cre

CBL

plpC

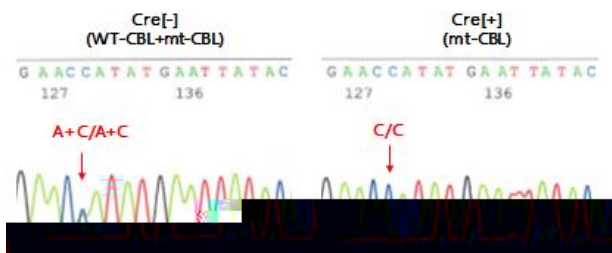
Mx-1

Cre

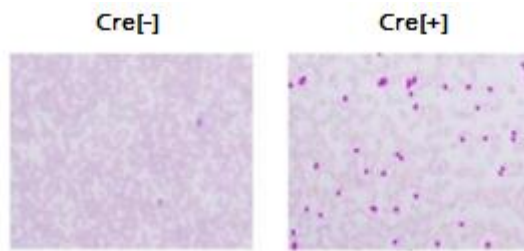
,loxP

CBL

WT-CBL-cDNA



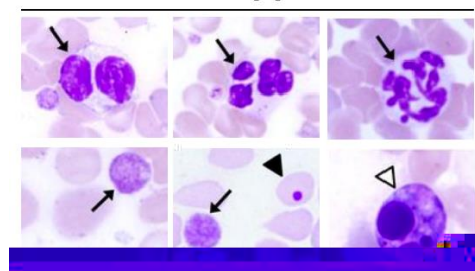
11. WT-CBL



13.

=

Cre[+]



14.

WT-CBL-cDNA

Cbl

intron4

5'

CBL

3'

Cbl-exon4

CBL-exon5

supplemental data

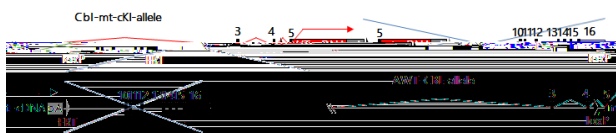
CBL polyA

,CBL-mt-cKI/Mx-Cre

CBL

,plpC

CBL



12.

/

CBL

CRISPER/Cas9

ES

ES

ES

CBL

CBL

2

CBL

CMML

CBL

CMML

CMML

(Nakata Y. et. al

Nakata Y, Ueda T, Nagamachi A, Yamasaki N, Ikeda KI, Sera Y, Takubo K, Kanai A, Oda H, Sanada M, Tsuji K, Ebihara Y, Wolff L, Honda ZI, Suda T, Inaba T, Honda H.:Blood,129(15):2148-2160,2017.

Blood. 2017).