



Fig. S1. RNA splicing is the most enriched of the alternative splicing (AS) events. **A:** The gene ontology (GO) enrichment analysis of Skipped exon (SE) events. **B:** The GO enrichment analysis of Alternative 3' splice site (A3SS) events. **C:** The GO enrichment analysis of Mutually exclusive exons (MXE) events. **D:** The GO enrichment analysis of Alternative 5' splice site (A5SS) events.

Table S1. Intron retention (IR) information for all genes was detected using IRFinder

[Click here to download Table S1](#)

Table S2. Significant intron retention (IR) changes in genes were filtered by p-value and IRChange

[Click here to download Table S2](#)

Table S3. Various alternative splicing (AS) events were detected using rMATS

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Table S4. Primer sequences

Primer name	Genes targeted	Application	Sequences (5'-3')
<i>Rtcb</i> -flox-F	<i>Rtcb</i>	Genotyping	5'-GTCTCTGTTGATCAGACATAGC-3'
<i>Rtcb</i> -flox-R			5'-ACAAGCTCTCCTTGAGTTCTATG-3'
<i>Rtcb</i> -RT-F		Real-time PCR	5'-TTTCTGCCAGCCATGAAGCAGA-3'
<i>Rtcb</i> -RT-R			5'-GGGTCATTCATATCAAAGGCAGCC-3'
<i>Cre-1</i>	<i>Gdf9-Cr</i>	Genotyping	5'-AAGAACCTGATGGACATGTTTCAG-3'
<i>Cre-2</i>			<i>e</i>
<i>Mbd1</i> -F	<i>Mbd1</i>	Real-time PCR	5'-TTGGCTGTCCCCAGCAAGAAGA-3'
<i>Mbd1</i> -R1		Real-time PCR (total mRNAs)	5'-ACAGGTGCATGTGAAGACGCAGAT-3'
<i>Mbd1</i> -R2		Real-time PCR (mRNAs containing intron 4)	5'-CCACCTGGTTCACTTTAAACCAATACTCAC-3'
<i>Dnmt3b</i> -F	<i>Dnmt3b</i>	Real-time PCR	5'-TCTCGGAGACGTCGAGCATCATC-3'
<i>Dnmt3b</i> -R1		Real-time PCR (total mRNAs)	5'-ACAGGTGCATGTGAAGACGCAGAT-3'
<i>Dnmt3b</i> -R2		Real-time PCR (mRNAs containing intron 6)	5'-CCACCTGGTTCACTTTAAACCAATACTCAC-3'
<i>Tdrd9</i> -intron 4-F	<i>Tdrd9</i>	Real-time PCR	5'-CACAGTACGTGCTAGACCACTACACCC A-3'
<i>Tdrd9</i> -intron 4-R1		Real-time PCR (total mRNAs)	5'-CTGATAGCCTACCAAGCCACCCAG-3'
<i>Tdrd9</i> -intron 4-R2		Real-time PCR (mRNAs containing intron 4)	5'-AGAGAAAGCTCACGTCCTGTGTCTCAC-3'
<i>Tdrd9</i> -intron 25-F		Real-time PCR	5'-GGTGAACGTGGACTTCCAGAAGCA-3'
<i>Tdrd9</i> -intron 25-R1		Real-time PCR (total mRNAs)	5'-CTCAGTGACATCGATTGTCAGGAGGA-3'
<i>Tdrd9</i> -intron 25-R2		Real-time PCR (mRNAs containing intron 4)	5'-AAGGCTCTAGGACAGAGTGGGCCA-3'

		intron 25)	
<i>Tdrd9</i> -intron 27-F		Real-time PCR	5'-GTAGACTATGGGAATAGGTCTCATGTAG ACCTAG-3'
<i>Tdrd9</i> -intron 27-R1		Real-time PCR (total mRNAs)	5'-CTGAAATGGAAGCTCCAAAACTGACA -3'
<i>Tdrd9</i> -intron 27-R2		Real-time PCR (mRNAs containg intron 27)	5'-CGTCCCCAGCCTCTTCTCAGTCTTA-3'
<i>Rad50</i> -F	<i>Rad50</i>	Real-time PCR	5'-GCAATTATGAAATTTACAGTATGAAAA TGG-3'
<i>Rad50</i> -R1		Real-time PCR (total mRNAs)	5'-CTTGCCCACGATAGGTACTCCGC-3'
<i>Rad50</i> -R2		Real-time PCR (mRNAs containg intron22)	5'-GAACAAGCATTGAGACACACCATGTT AG-3'
<i>MuERV-L</i> -F	<i>MuERV-</i>	Real-time PCR	5'-ATCGAAAGGCTCCAGACACAA-3'
<i>MuERV-L</i> -R	<i>L</i>		5'-TTCAGCCAACCTTACAATGAGAG-3'
<i>Npl</i> -F	<i>Npl</i>	Real-time PCR	5'-GAACAGAAGGACTTGGCTTCAGC-3'
<i>Npl</i> -R			5'-CCTCAGCCTTAGCAGTAAACTCCTG-3'
<i>Eif1a</i> -F	<i>Eif1a</i>	Real-time PCR	5'-AACAGGCGCAGAGGTAAAAA-3'
<i>Eif1a</i> -R			5'-GCACAGCCTCCTTACACCAT-3'
<i>Gucal1a</i> -F	<i>Gucal1a</i>	Real-time PCR	5'-ACCGAGTGCCATCAGTGGTAT-3'
<i>Gucal1a</i> -R			5'-CTGCCACGTACTCCATGAAGT-3'
<i>Zscan4b</i> -F	<i>Zscan4b</i>	Real-time PCR	5'-CAACAAGGCCAATACCAGATAATGCA-3 ,
<i>Zscan4b</i> -R			5'-ATGCTCATGGTTTTGTTCTTTCTGGG-3'
<i>Zscan4c</i> -F	<i>Zscan4c</i>	Real-time PCR	5'-GCCTTATGTCTGTTCCCTATGT-3'
<i>Zscan4c</i> -R			5'-CAGTCTCTGCTGAGGATGTTAG-3'
<i>Gapdh</i> -F	<i>Gapdh</i>	Real-time PCR	5'-ACACTGAGGACCAGGTTGTCTC-3'
<i>Gapdh</i> -R			5'-TACTCCTTGGAGGCCATGTAG-3'

Table S5. Antibody information

Protein name	Manufacturer (catalogue number)	Applications (working dilution)	Website Link*
RTCB	Abcam (ab98231)	WB (1:1000)	https://www.abcam.com/c22orf28-antibody-ab98231.html
H3K4me3	Abcam (ab8580)	IF (1:400)	http://www.abcam.com/histone-h3-tri-methyl-k4-antibody-chip-grade-ab8580.html
H3K9me3	Abcam (ab8898)	IF (1:400)	http://www.abcam.com/Histone-H3-tri-methyl-K9-antibody-ChIP-Grade-ab8898.html
FITC-α-Tubulin	Sigma-Aldrich (F2168)	IF (1:500)	http://www.sigmaaldrich.com/catalog/product/sigma/f2168?lang=zh&region=CN
5mC	Calbiochem (NA81)	IF (1:500)	http://www.emdmillipore.com/US/en/product/Anti-5-Methylcytosine-Mouse-mAb-(162-33-D3),EMD_BIO-NA81
5hmC	Active motif (39769)	IF (1:400)	https://www.activemotif.com/catalog/details/39769/5-hydroxymethylcytidine-5-hmc-antibody
FLAG	Sigma-Aldrich (F3165)	WB (1:2000)	http://www.sigmaaldrich.com/catalog/product/sigma/f3165?lang=zh&region=CN
p-H2AX	Cell Signaling (9718S)	IF(1:200); WB(1:1000)	http://www.cellsignal.com/products/primary-antibodies/phospho-histone-h2a-x-ser139-20e3-rabbit-mab/9718
DDB1	Epitomics (3821-1)	WB (1:2500)	http://www.epitomics.com/products/search/DDB1
MVH	Abcam (ab13840)	IHC(1:500)	http://www.abcam.com/ddx4-mvh-antibody-primordial-germ-cell-marker-ab13840.html
Cyclin B1	Cell Signaling (4138)	WB (1:1000)	https://www.cst-c.com.cn/products/primary-antibodies/cyclin-b1-antibody/4138
CDC20	Abcam (ab26483)	WB (1:1000)	https://www.abcam.cn/cdc20-antibody-ab26483.html
p-CDK1 (T161)	Abcam (ab201008)	WB (1:1000)	https://www.abcam.com/cdk1-phospho-t161-antibody-epr19546-ab201008.html#lb
p-CDK1 (T14/Y15)	Thermo Fisher (17H29L7)	IF (1:200)	https://www.thermofisher.cn/cn/zh/antibody/product/Phospho-CDK1-Thr14-Tyr15-Antibody-

			clone-17H29L7-Recombinant-Monoclonal/701808
p-lamin A/C (S22)	Cell Signaling (2026)	IF (1:200)	https://www.cellsignal.com/products/primary-antibodies/phospho-lamin-a-c-ser22-antibody/2026
RAD50	Abcam (ab124682)	WB (1:1000)	https://www.abcam.com/rad50-antibody-epr34662-ab124682.html#lb
DNMT1	Cell Signaling (5032S)	WB (1:1000)	https://www.cellsignal.cn/products/primary-antibodies/dnmt1-d63a6-xp-rabbit-mab/5032
DNMT3A	Proteintech (19366-1-AP)	WB (1:1000)	https://www.ptgen.com/products/DNMT3A-Antibody-19366-1-AP.htm
DNMT3B	Abcam (ab122932)	WB (1:3000)	https://www.abcam.com/dnmt3b-antibody-ab122932.html