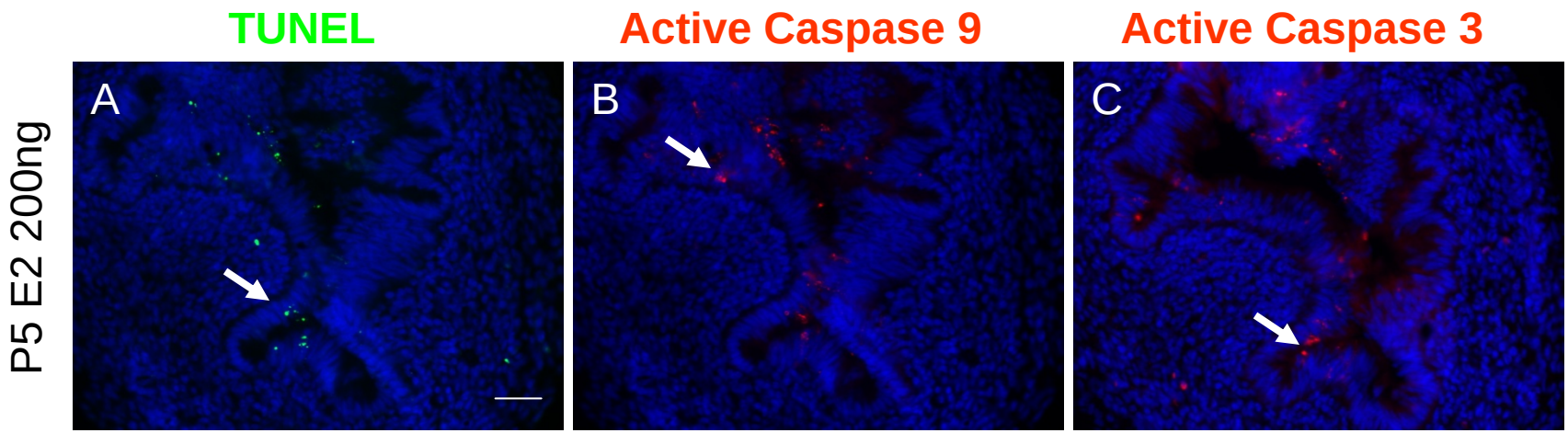
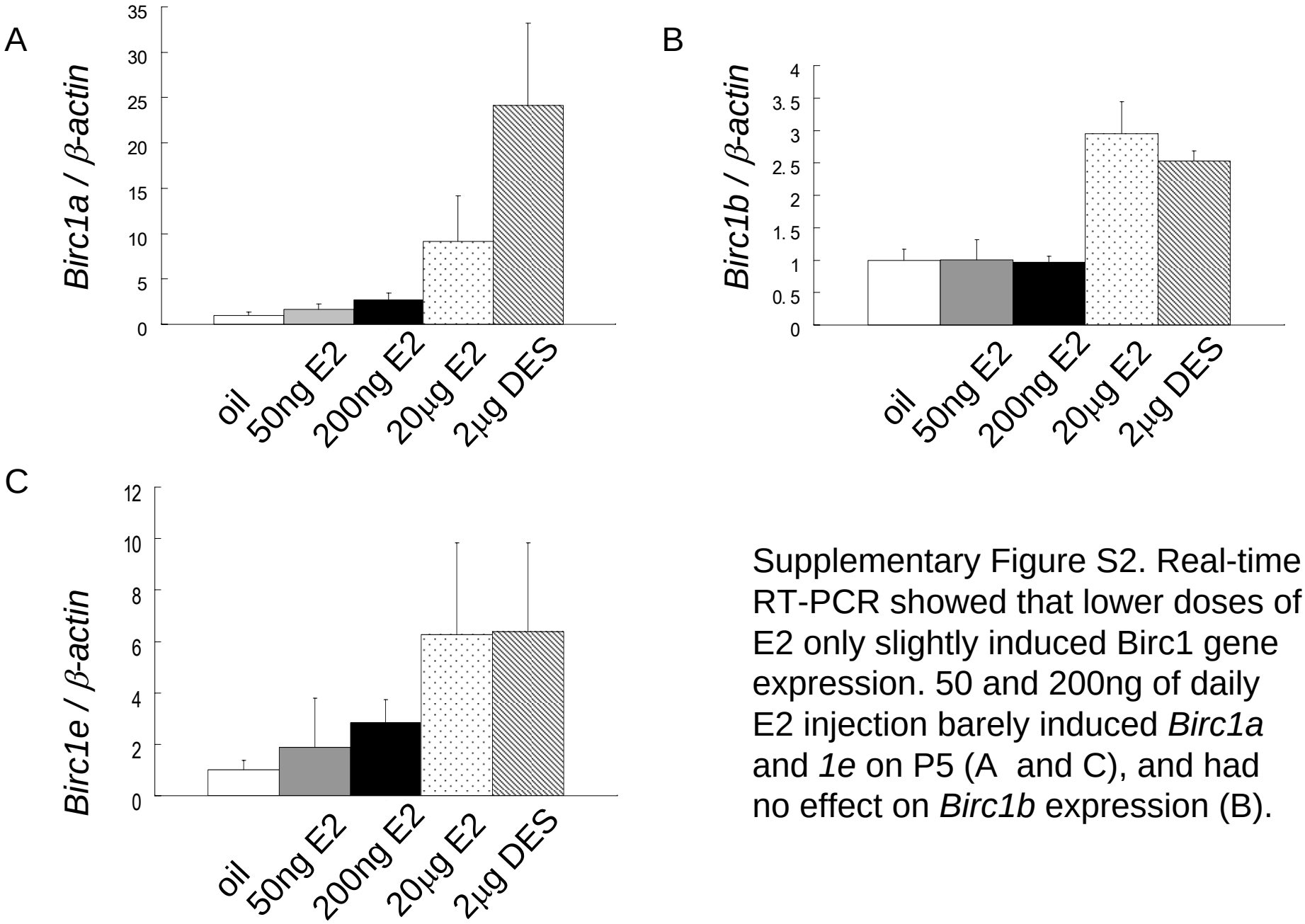
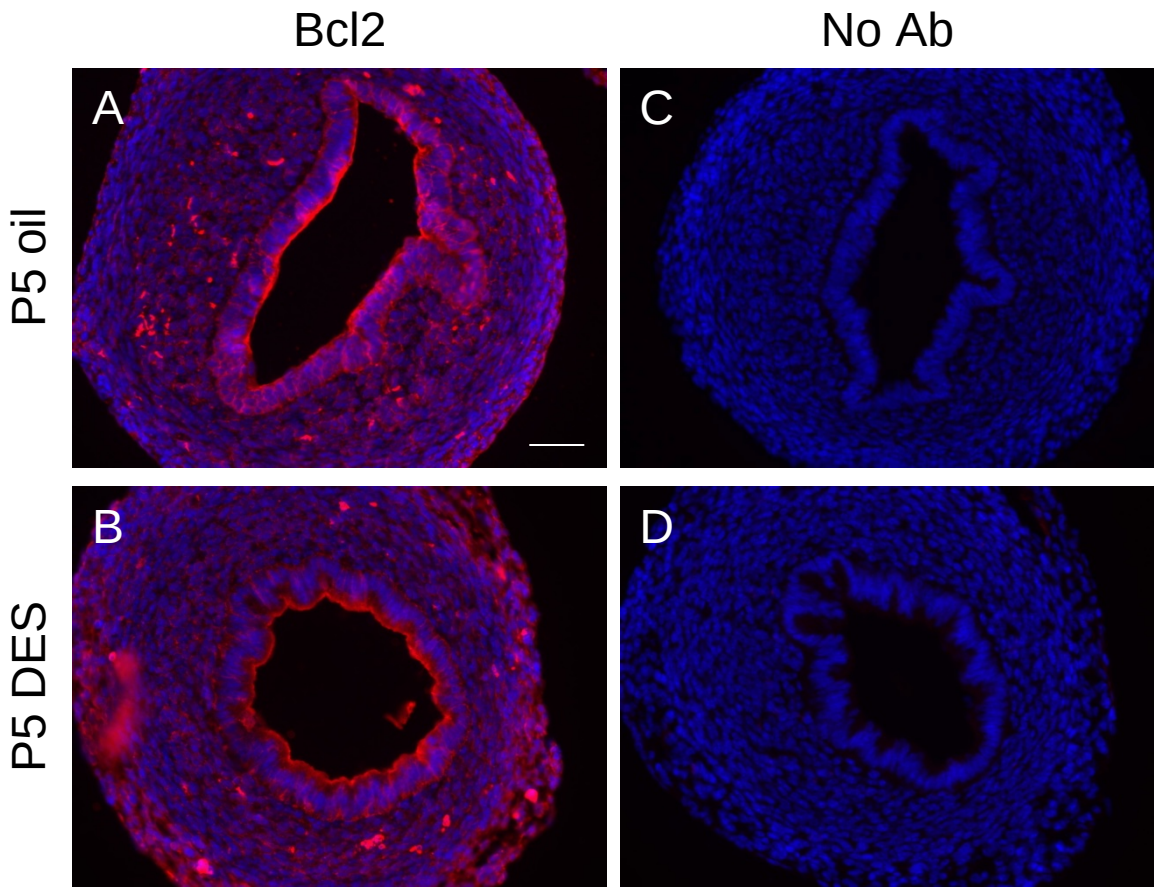


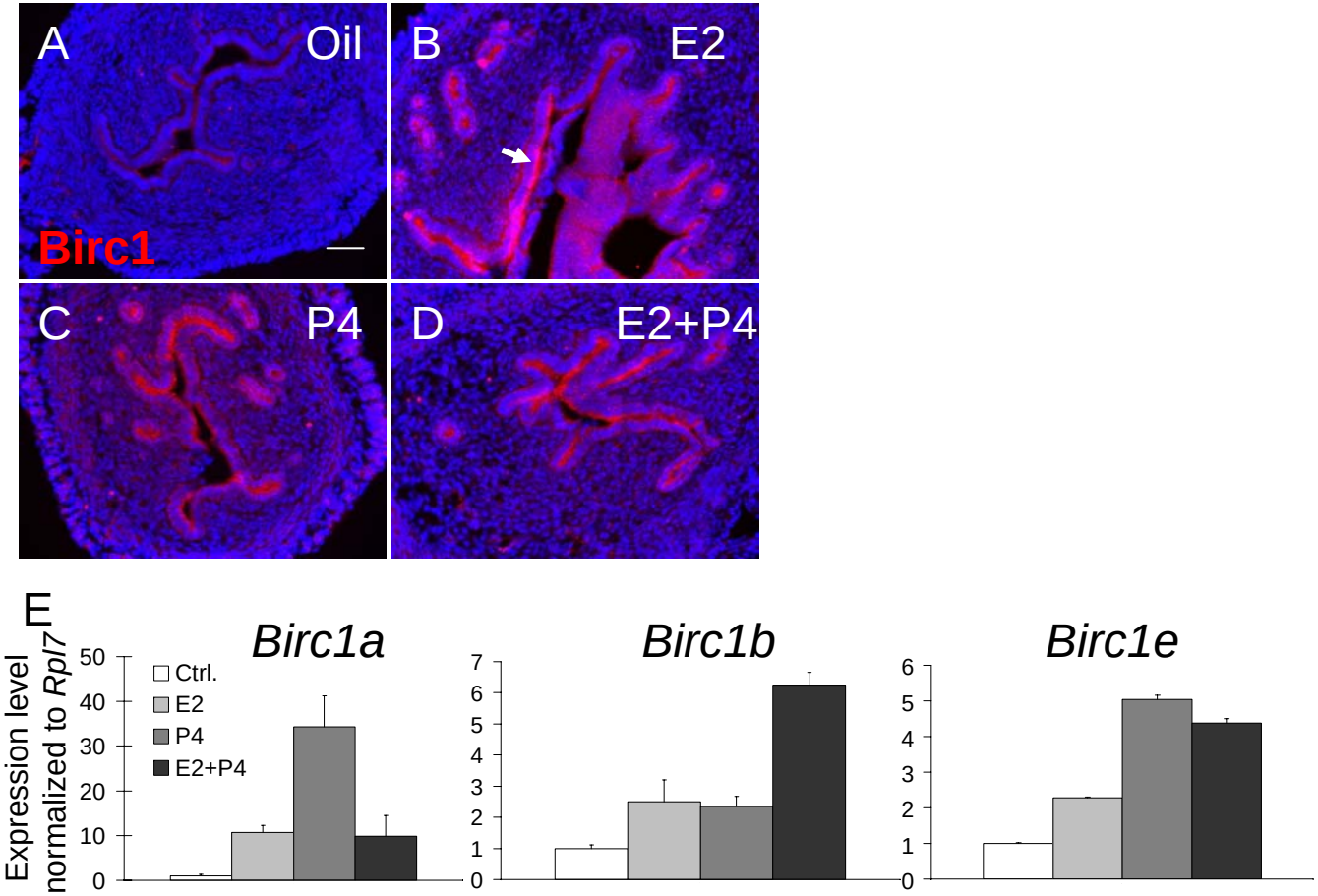
Supplementary Figure S1. Low dose of E2 failed to completely inhibit uterine epithelial apoptosis. After daily injection of 200ng E2 from P1 to P5, apoptotic cells was still detected in the uterine epithelium by TUNEL assay on P5 (A). Immunofluorence of active caspase-9 and -3 revealed that both proteins were present on P5 (B, C). Bars: 50μm in A-C.



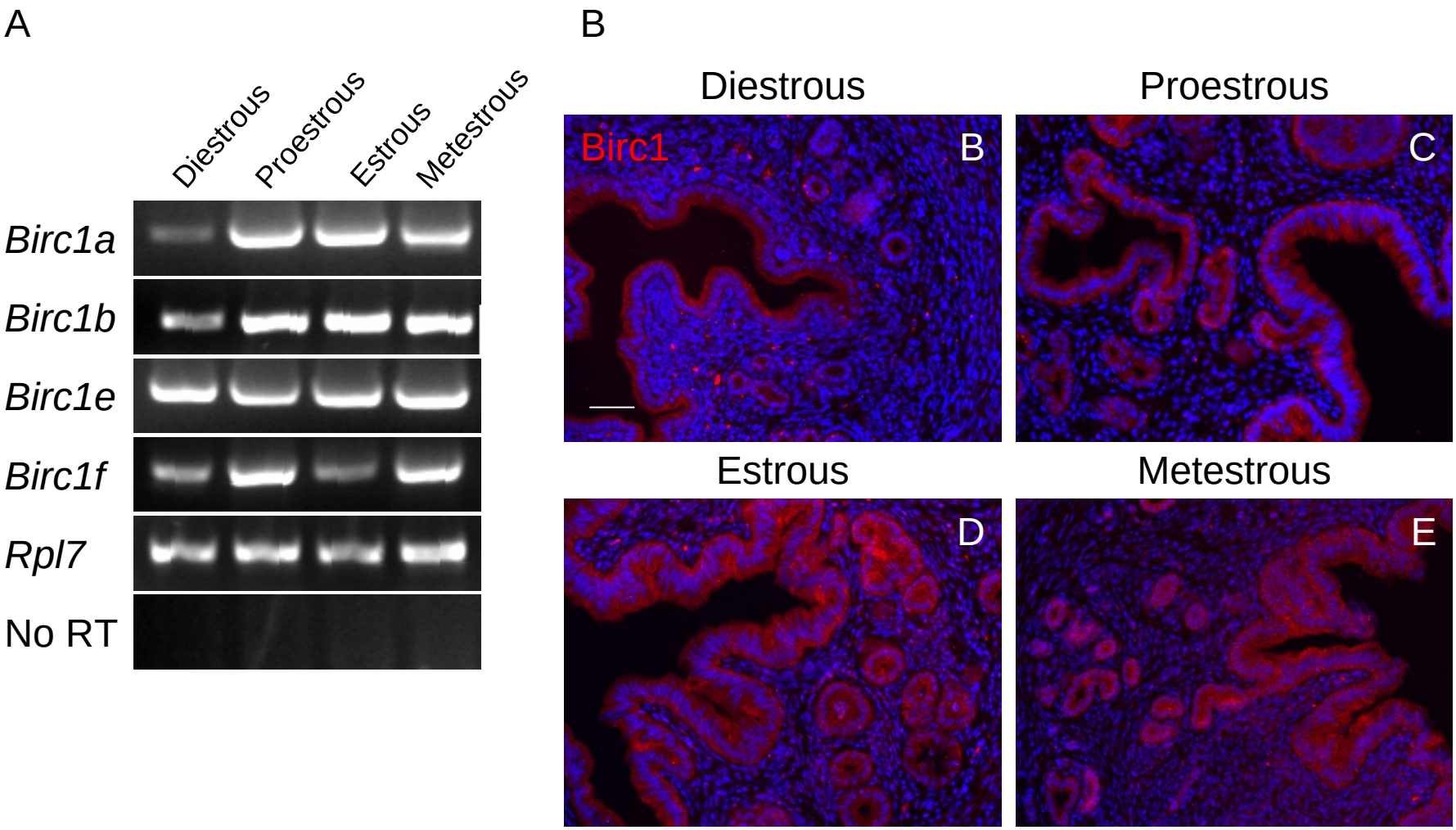
Supplementary Figure S2. Real-time RT-PCR showed that lower doses of E2 only slightly induced Birc1 gene expression. 50 and 200ng of daily E2 injection barely induced *Birc1a* and *1e* on P5 (A and C), and had no effect on *Birc1b* expression (B).



Supplementary Figure S3. Bcl2 level is not changed upon DES exposure at P5. A,B) Immunohistochemistry shows that Bcl2 is universally expressed in the uterus and DES treatment causes no noticeable change in Bcl2 leve. C,D) Corresponding slides stained without primary Antibody as negative controls. Bars: 50μm in A-D.



Supplementary Figure S4. Ovarian hormone treatment in ovariectomized mouse up-regulates Birc1 gene expression in uterine epithelium. A-D) Immunohistochemistry staining of Birc1s in the uterus shows that Birc1 proteins are induced in both luminal and glandular epithelium by E2, P4 or the combination of two after eight hours. E) Real-time RT-PCR of Birc1a, 1b and 1e after hormone treatment. Birc1a is reduced 10 times by E2, 25 times by P4, but only 9 times by the combination of both. Birc1b expression is doubled by either E2 or P4, but up-regulated over 6 times by the combination of both. Birc1e expression is induced two-fold by E2, five-fold by P4 and around 4-fold by combination treatment. Bars: 50mm in A-D



Supplementary Figure S5. Birc1 expression during estrous cycle. A) RT-PCR analysis of Birc1 genes showed that expression Birc1a and 1b is lower at Diestrous phase, but higher at the rest of the cycle. Birc1e expression is consistent throughout the cycle. Birc1f expression is lower at diestrous and estrous phase, but higher at proestrous and metestrous cycle. B) Immunofluorescence with Birc1 antibody revealed lower overall Birc1 protein level at diestrous phase, but higher at the other phases. The expression is more prominent in the luminal and glandular epithelia. Bars: 50μm in B-E.

Table S1. Primers used for RT-PCR and real-time RT-PCR

Gene Name	Accession Number	Primers	Product Size (bp)
Birc1a	NM_008670	5'TGCCTTGGCAGTCCTTATTT3' 5'TGCTGCTGTGAGTGACAATG3'	400
Birc1b	NM_010872	5'GGAAAGACACCCTCAGTCCA3' 5'GAGGGCATCAGATCCCATTA3'	319
Birc1e	NM_010870	5'AAAGTATGTTGGGCCCTCCT3' 5'GTCAGCTGCAGCCATGATAA3'	403
Birc1f	NM_010871	5'CCTGGAGTAAAAGATGCTCCTG3' 5'TGCTTGCATGAGTGTGTGTG3'	407
β-actin	NM_007393	5'AGCCATGTACGTAGCCATCC3' 5'CTCTCAGCTGTGGTGGTGAA3'	228
Caspase-3	NM_009810	5'GTGGGACTGATGAGGAGATG3' 5'ACCTGATGTCGAAGTTGAGG3'	482
Caspase-9	NM_015733	5'TCCCCACAGATCAAGTCTCC3' 5'CTCTTGGCCCTGAGAGTCAC3'	651
Birc1a real-time	NM_008670	5'CGCAGTCTCCTGGTTAGCAC3' 5'AGTGAGAAGGCAGCAAGCAG3'	106
Birc1b real-time	NM_010872	5'GCAGGGGGATCAAGAGTTTG3' 5'ACCACCATGTGGTTGCTGAG3'	107
Birc1e real-time	NM_010870	5'ATCATGGCTGCAGCTGACTC3' 5'CCCATTGGCAATAGATGCAC3'	104
β-actin real-time	NM_007393	5'CTAAGGCCAACCGTGAAAAG3' 5'CCATCACAATGCCTGTGGTA3'	126

Table S2. Restriction Enzymes and RNA polymerases used to generate sense or anti-sense probes for in situ hybridization

Probe Name	Restriction Enzyme	RNA polymerase	Probe Size (nt)
Birc1a	anti-sense: NotI sense: PstI	anti-sense: T3 sense: T7	~400
Birc1b	anti-sense: ApaI sense: PstI	anti-sense: Sp6 sense: T7	~320
Birc1e	anti-sense: NcoI sense: SpeI	anti-sense: Sp6 sense: T7	~400