

Table S1 Detailed information of the primary antibodies

Antibody	Brand	Cat No.
HDAC1 (10E2)	CST	#5356
HDAC2 (3F3)	CST	#5113
HDAC3 (7G6C5)	CST	#3949
HDAC4	Proteintec	17449-1-AP
HDAC5	Proteintec	16166-1-AP
HDAC6	Proteintec	12834-1-AP
HDAC7 (D4E1L)	CST	#33418
HDAC7	Proteintec	26207-1-AP
Phospho-HDAC4 (Ser246)/HDAC5 (S259)/HDAC7 (S155) (D27B5)	CST	#3443
HDAC8	Elabscience	E-AB-14127
HDAC9	Proteintec	67364-1-Ig
HDAC10	Proteintec	24913-1-AP
c-Myc (D84C12)	CST	#5605
p21	Proteintec	10355-1-AP
p27	Proteintec	25614-1-AP
Cyclin A2	Proteintec	66391-1-Ig
Cyclin B1	Proteintec	55004-1-AP
Cyclin D1	Proteintec	60186-1-AP
Cyclin E1	CST	#4129
CDK1	Proteintec	19532-1-AP
CDK2	Proteintec	10122-1-AP
CDK4	Proteintec	11026-1-AP
CDK6	Proteintec	14052-1-AP
Flag tag	Proteintec	66008-3-Ig
HA tag	Proteintec	51064-2-AP
GFP-tag	Proteintec	66002-1-IG
GST-tag	CST	#2624
β -catenin	Proteintec	66379-1-Ig
β -catenin (D10A8)	CST	#8480
Acetyl- β -catenin (Lys49) (D7C2)	CST	#9030
Phospho- β -catenin (Ser675) (D2F1)	CST	#4176
TCF4	Proteintec	22337-1-AP
USP10 (D7A5)	CST	#8501
USP10	Bioss	bs-9267R
14-3-3	Proteintec	66061-1-IG
Ubiquitin	Proteintec	10201-2-AP
LaminB1	Bioworld	BS3574
GAPDH	CST	#5174
β -actin	CST	#3700
Vinculin	Proteintec	66305-1-Ig
Flag agarose gel	Sigma	A-2220
GST beads	GE Healthcare	17-0756-05
Ni-NTA Agarose	QIAGEN	30210

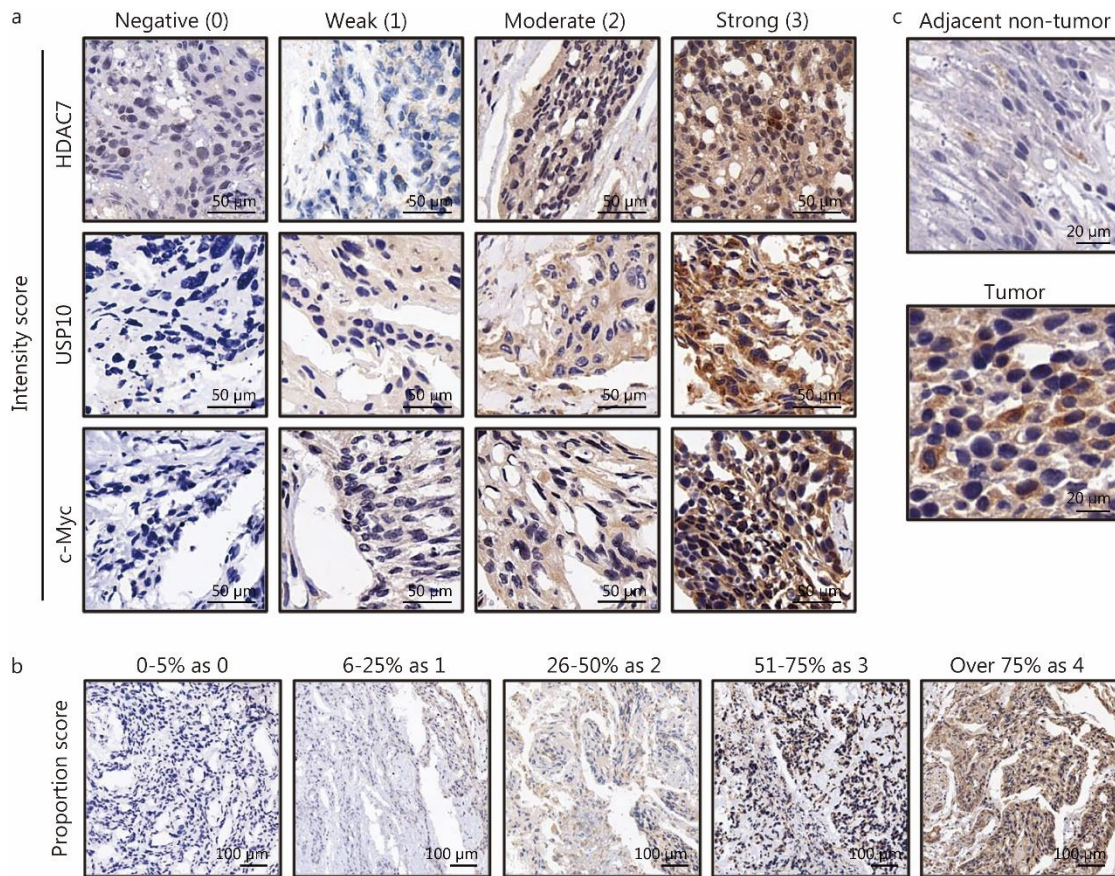


Fig. S1 Criteria of the IHC staining scores. **a** and **b** Representative HDAC7, USP10 and c-Myc IHC staining images with different intensity score and proportion score in ESCC tissues. Scale bar, 50 μm and 100 μm , respectively. **c** Representative IHC images of the ESCC adjacent non-tumor tissues and tumor tissues. Scale bar, 20 μm . HDAC7 histone deacetylase 7, IHC immunohistochemistry, USP10 ubiquitin-specific peptidase 10

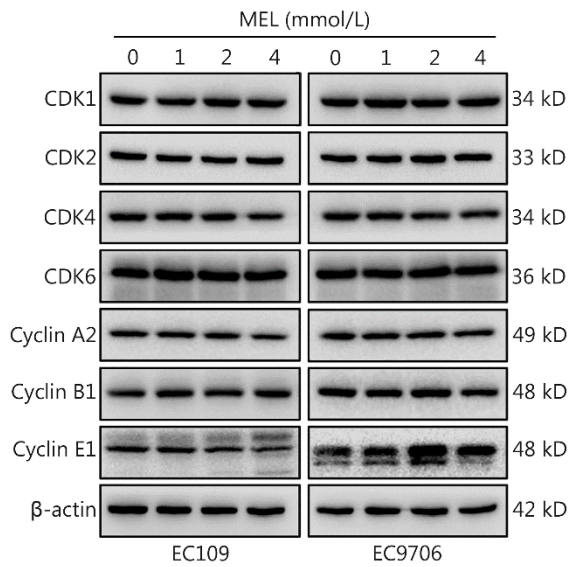


Fig. S2 Melatonin treatment for 48 h did not affect the expression of the listed cell cycle-related proteins in the EC109 and EC9706 cells. Representative Western blotting results of CDK1, CDK2, CDK4, CDK6, Cyclin A2, Cyclin B1 and Cyclin E1 were shown. CDK cyclin-dependent kinase

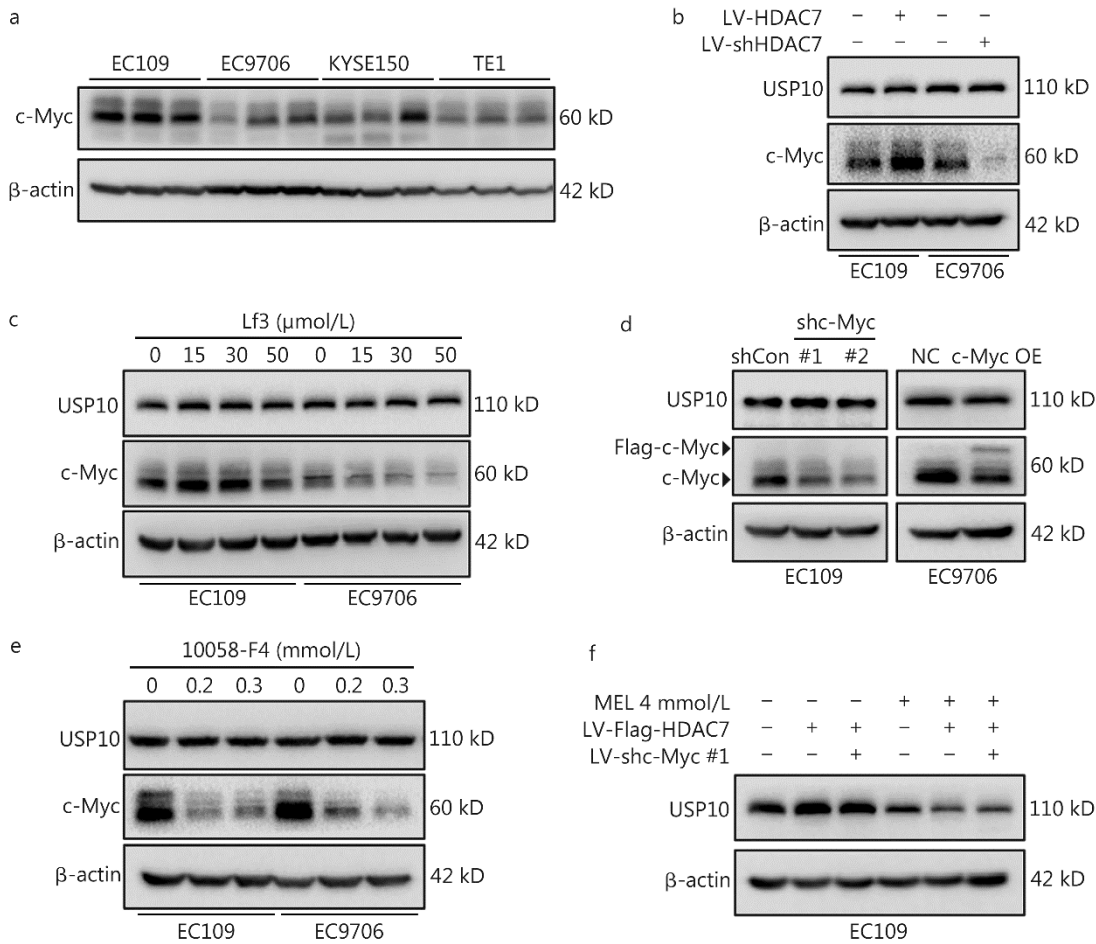


Fig. S3 USP10 expression is not regulated by the HDAC7/ β -catenin/c-Myc pathway. **a** Representative Western blotting result of c-Myc expression in the different ESCC cells lines. **b** and **c** HDAC7 overexpression, knockdown or Lf3 treatment for 48 h did not affect the USP10 protein level in the ESCC cells. **d** and **e** c-Myc overexpression, knockdown or 10058-F4 treatment for 48 h did not affect the USP10 protein level in the ESCC cells. **f** Co-treatment of melatonin, LV-Flag-HDAC7 and LV-shc-Myc #1 was applied to EC109 cells. Representative Western blotting results of USP10 were shown. HDAC7 histone deacetylase 7, USP10 ubiquitin-specific peptidase 10, LV lentivirus