

Dietary phytochemical PEITC restricts tumor development via modulation of epigenetic writers and erasers

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Supplementary Information

Supplementary Figure 1. Effects of PEITC on cell viability of colon cancer cells.

Supplementary Figure 2. Reduced growth of PEITC-treated tumors in a mouse xenograft model.

Supplementary Table 1. List of chromatin-associated proteins identified by ProteomeDiscoverer v1.4 search from 6-plex TMT experiment of 2.5 μ M PEITC- or DMSO-treated SW620 cells (excel file).

Supplementary Table 2. List of differentially regulated chromatinome after PEITC treatment for 6 weeks (excel file).

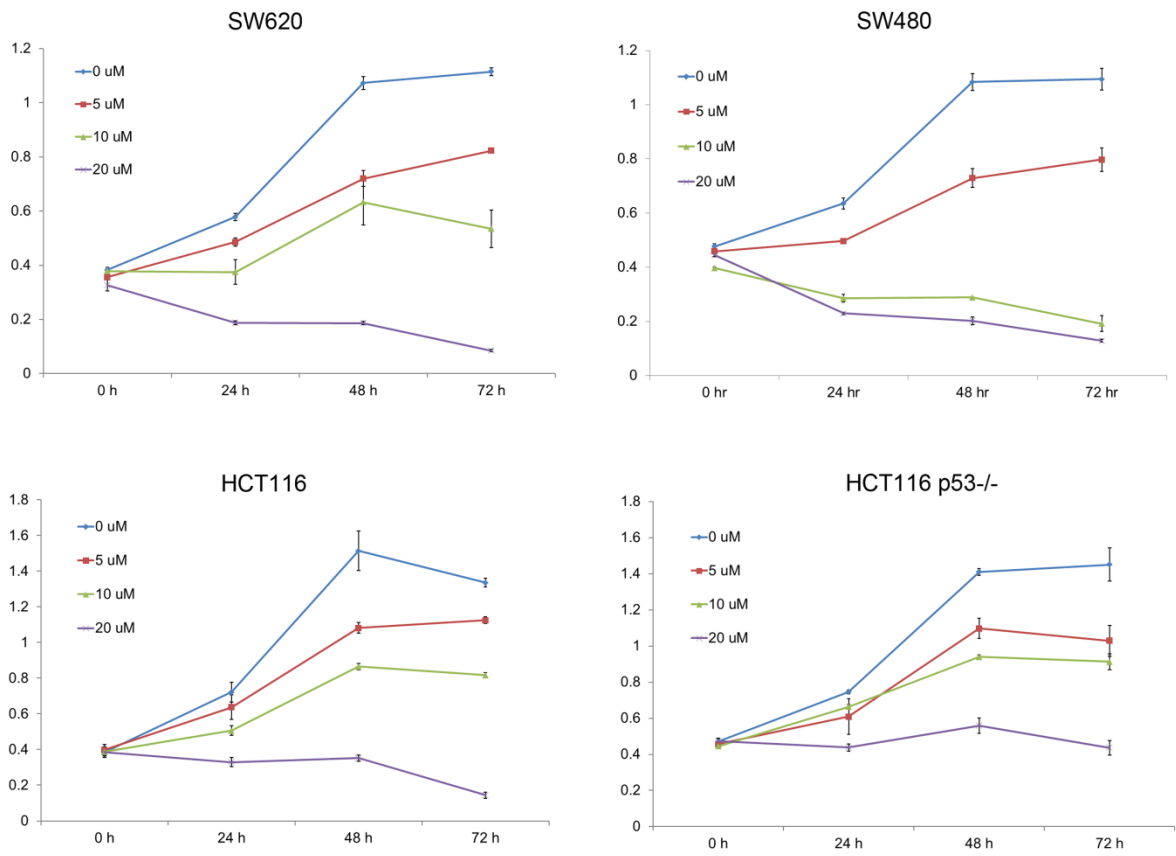
Supplementary Table 3. PEITC-induced differentially methylated genes in SW620 cells (excel file).

Supplementary Table 4. Lists of PEITC-, PRC1-, or PRC2 target genes and frequently methylated genes in cancer (excel file).

Supplementary Table 5. Common PEITC target genes which are overlapped with PRC1, PRC2, or frequently methylated cancer specific genes.

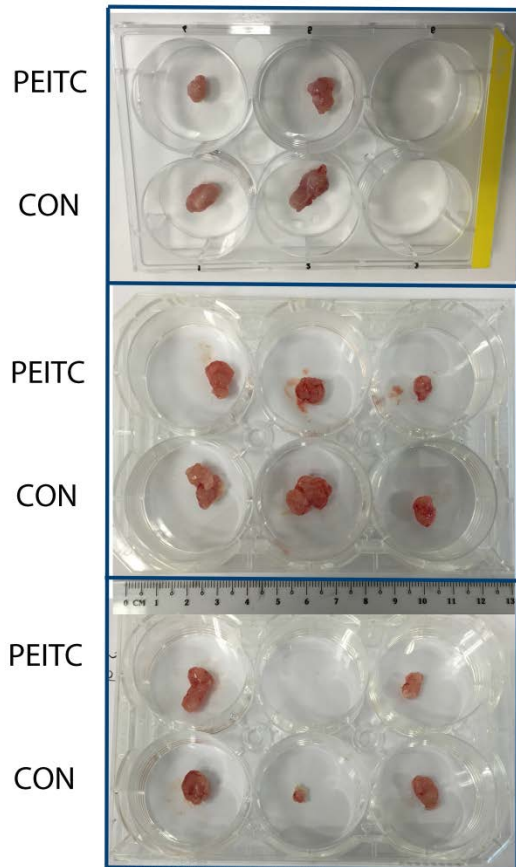
Supplementary Table 6. MeDIP primers.

Supplementary Table 7. Pro-apoptotic gene primers.



Supplementary Figure 1. Effects of PEITC on cell viability of colon cancer cells.

MTT assay showed cell viability of colon cancer cells after treatment with PEITC for the various time points. Error bars represent the mean \pm s.d. from three independent experiments.



Supplementary Figure 2. Reduction of tumor formation in mouse xenograft model. Mouse xenograft model showed a reduction of tumor formation in SW620-PEITC cells compared to control cells. SW620 cells after treatment with DMSO (CON) or 2.5 μ M PEITC (PEITC) for 6 weeks were s.c. injected into left or right flank region of NCr nude mice.

Supplementary Table 5. Common PEITC target genes which are overlapped with PRC1, PRC2, or frequently methylated cancer specific genes

Gene name	PEITC target	PRC2 target	PRC1 target	Frequently methylated gene
CDH8	0	0		
DLC1	0	0		
FEZ1	0	0		
ITGA2	0	0		
MGLL	0	0		
PAX7	0	0		
RASSF5	0	0		
TFPI2	0	0		
TRIM15	0	0		
TRPM3	0	0		
oSNL1	0	0		
WNT5A	0	0		
MORF4	0	0		
HECW2	0	0	0	
PAPPA	0	0	0	
PRKCH	0	0	0	
PTHLH	0	0	0	
CFTR	0	0		0
FBN1	0	0		0
SFRP1	0	0		0
ALCAM	0		0	
ALOX15	0		0	
B4GALNT2	0		0	
BAMBI	0		0	
CACNA1A	0		0	
CDH6	0		0	
CR2	0		0	
DLGAP2	0		0	
DPP10	0		0	
DSP	0		0	
EBF2	0		0	
ELAO4	0		0	
EPHA3	0		0	
ESRP1	0		0	
EoX2	0		0	
FAM46C	0		0	
FLI1	0		0	
GAD1	0		0	
GALNT3	0		0	
GRM8	0		0	
HEPACAM2	0		0	
HPSE2	0		0	

HSPB3	0	0	
KCNA3	0	0	
KCTD16	0	0	
KLHL29	0	0	
LHX5	0	0	
LRRCC1	0	0	
MAML3	0	0	
MECOM	0	0	
MSX1	0	0	
PAK7	0	0	
PAX3	0	0	
PCDH10	0	0	
PCDH17	0	0	
PCDH18	0	0	
PDE1A	0	0	
PEG3	0	0	
PTH2R	0	0	
RALYL	0	0	
RIMKLB	0	0	
RUNX1T1	0	0	
RUNX2	0	0	
SCGB3A2	0	0	
WNT8B	0	0	
ZIC4	0	0	
ADCYAP1	0	0	0
EBF3	0	0	0
GDNF	0	0	0
GFI1	0	0	0
HOXA11	0	0	0
TMEFF2	0	0	0
AFF3			0
ASCL2			0
COL1A2			0
CSMD1			0
DDIT3			0
FGFR2			0
FLRT2			0
GABRB3			0
HLA-DPB1			0
HS3ST2			0
MAGEA1			0
MGMT			0
MYLK			0
PPP2R2B			0
SFRP2			0
SNRPN			0

Supplementary Table 6. MeDIP primers

Gene	Forward (5'-3')	Reverse (5'-3')
<i>VWC2</i>	TACATCAGAAACACGCCGGCCG	CCTGCGGAGAGAACAGCAGCAC
<i>PCDH10</i>	TTCTTTGCGTCTGTCCCAGGCA	ATTCACACTGTGTGGGCGCTCG
<i>SPG20</i>	ACTCCTTAGAGCTAGCACAAAGTTGA	TGTTTGAAACAGGAAGCCTTTCTGT
<i>PAK7</i>	GTACGCAGCTGCTCCGGGTTTT	TCCTCCCCACCTCTGCTAGCCT
<i>CDH6</i>	ACCTTCGCATCCCAAGAGCTGC	AGAGCATCCCTCCCAACTCCGG
<i>SOX3</i>	GGGCTCTAGCTGGGCCCTTAT	CGTGGACTCCCGCCTCCTAAGT
<i>HNF4A</i>	GAAGGCAGAGAGGGCACTGGGA	CTGGCACACCTGGGCACATCTG
<i>RASSF-5</i>	TTA ATT ATT TCG ATT GAT TC	CGA TAA CTC AAA TTC CAC G
<i>MeDIP_H19</i>	CGA GTG TGC GTG AGT GTG AG	GGC GTA ATG GAA TGC TTG AA
<i>MeDIP_CTRL</i>	GAG AGC ATT AGG GCA GAC AAA	GTT CCT CAG ACA GCC ACA TTT

Supplementary Table 7. Pro-apoptotic gene primers

Gene	Forward (5'-3')	Reverse (5'-3')
<i>BAK</i>	ACA CTT GCT CCC AAC CCA TTC A	AAC CAA GTC CTA AGC CCT GT
<i>BLK</i>	ATC TTG ATG GAG ACC CTC CTG T	TCA CTG CCC TCC ATG CAT T
<i>BMF</i>	ACC AGC CAG GAA GAC AAA GCT	CGA TAG CCA GCA TTG CCA TAA
<i>BAD</i>	AGT GAC GAG TTT GTG GAC TCC T	AGC TTT GCC GCA TCT GCG TT
<i>BIM</i>	GTT GCT TTG CCA TTT GGT CT	CCA CCA CTT GAT TCT TGC AG