

Additional Table S1. Primer sequences of the genes used in this study

Gene		Sequence
HPV16 E5 - qPCR	Forward	CTTGATACTGCATCCACAACA
	Reverse	AAAAGCGTGCATGTGTATGT
HPV16 E6 - qPCR	Forward	ACTTTGCTTTTCGGGATTATGC
	Reverse	AGGACACAGTGGCTTTTGACAGTT
HPV16 E7 - qPCR	Forward	ATGCATGGAGATACACCTACATTGC
	Reverse	TTATGGTTTCTGAGAACAGATGGGG
GAPDH - qPCR	Forward	CTGTCGTGTGACCACACTGGTGCC
	Reverse	ATGCTTGTCAATTTTCATTACT
HPV16 E5 - cloning	Forward	GGTACCCACCATGACAAATCTTGATACTGCATCC
	Reverse	TCTAGATTATGTAATTAAGCGTGCAT
HPV16 E6 - cloning	Forward	GGTACCCACCATGCACCAAAGAGAACTGCAATG
	Reverse	TCTAGATTACAGCTGGGTTTCTCTCGTG
HPV16 E7 - cloning	Forward	GGTACCCACCATGCATGGAGATACACCTACATT
	Reverse	TCTAGATTATGGTTTCTGAGAACAGATGGG
<i>Rel</i> -qPCR	Forward	ACATGGTAATTTGACGACTGCT
	Reverse	GCTTCCCAATCGTTCAACACA
<i>Rela</i> -qPCR	Forward	ATGTGGAGATCATTGAGCAGC
	Reverse	CCTGGTCCTGTGTAGCCATT
<i>Nfkb1</i> -qPCR	Forward	GAAGCACGAATGACAGAGGC
	Reverse	GCTTGGCGGATTAGCTCTTTT
<i>Rel</i> -cloning	Forward	ATAAGAATGCGGCCGCTAAACTATatggcctccggtgcgtataa
	Reverse	TTGGCGCGCCAAAttatacttgaaaaattcatatggaaagga
<i>Rela</i> -cloning	Forward	ATAAGAATGCGGCCGCTAAACTATatggacgaactgtccccctcatc
	Reverse	TTGGCGCGCCAAAttaggagctgatctgactcagcaggg
<i>Nfkb1</i> -cloning	Forward	ATAAGAATGCGGCCGCTAAACTATatggcagaagatgatccatatttgggaagg
	Reverse	TTGGCGCGCCAAActaaatttgccttctagaggtccttctg
HPV16 E5 - shRNA	top	GATACTGCATCCACAACATTATTCAAGAGATAATGTTGTGGATGCAGTATCTTTTTTGT
	bottom	CTAGACAAAAAGATACTGCATCCACAACATTATCTCTGAATAATGTTGTGGATGCAGTATC
HPV16 E6 - shRNA	top	GGAGCGACCCAGAAAGTTACCTTCAAGAGAGGTAACCTTCTGGGTCGCTCTTTTTTGT
	bottom	CTAGACAAAAAGGAGCGACCCAGAAAGTTACCTCTCTGAAGGTAACCTTCTGGGTCGCTCC
HPV16 E7 - shRNA	top	GCATGGAGATACACCTACATTTTCAAGAGAAATGTAGGTGTATCTCCATGCTTTTTTGT
	bottom	CTAGACAAAAAGCATGGAGATACACCTACATTTCTCTGAAATGTAGGTGTATCTCCATGC
<i>Rel</i> - shRNA	top	GAGCACAGCACAGACAACAACCGAATTCAAGAGATTCGGTTGTTGTCTGTGCTGCTCTTTTTTGT
	bottom	CTAGACAAAAAGAGCACAGCACAGACAACAACCGAATCTCTGAATTCGGTTGTTGTCTGTGCTGTGCTC
<i>Rela</i> - shRNA	top	CAGATACAGACGATCGTCACCGGATTTCAGAGAATCCGGTGACGATCGTCTGTATCTGTTTTTGT
	bottom	CTAGACAAAAACAGATACAGACGATCGTCACCGGATTCTCTGAAATCCGGTGACGATCGTCTGTATCTG
<i>Nfkb1</i> - shRNA	top	GGGAAACCATATGAGCCAGAGTTTATTCAAGAGATAAATCTGGCTCATATGTTTCCCTTTTTTGT
	bottom	CTAGACAAAAAGGGAAACCATATGAGCCAGAGTTTATCTCTTGAATAAACTCTGGCTCATATGTTTCCC
miR-133a1	Forward	CCTCGAGGgatttgggctgagcgggtcttgttca
	Reverse	CGACGCGTCGctctgggtcctcctgccctctcttctgact

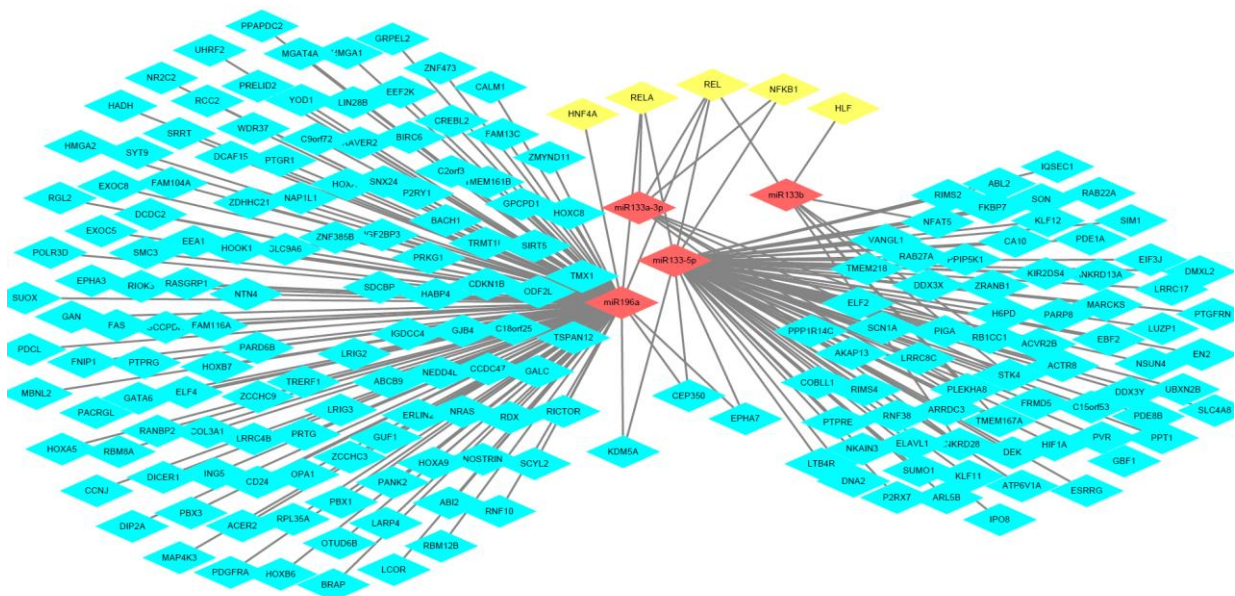
miR-133a2	Forward	CCTCGAGGacctgtttaattgtttggttcataaagtgcac
	Reverse	CGACGCGTCGccatcagcccacactctgcaaa
miR-133a3	Forward	CCTCGAGGggccagggaggggtggactctgggagccttga
	Reverse	CGACGCGTCGagatccgaggaacagcgacgtcggtagaaga
miR-133a1 mt	Forward	aacaagccgttttgggtgACTggGGGcctcttgccctttaattagggg
	Reverse	cccctaattaaaaggcaagaggCCcccAGTcacccaaaacggcttggtt
miR-133a2 mt	Forward	aggggcaggaggaccagagGTTgtGGGccggagaatccacatcccaggc
	Reverse	gcctgggatgtggattctccggCCcAcAACctctgggtcctctgcccct
miR-133a3 mt	Forward	gccgcagtggcctccccgtTtTgtGGGgcagcctgccccagtgcctgc
	Reverse	gcagagcactggggcaggctgcCCcAcAAAacggggaggccactgcggc

Additional Table S2. The synthetic sequences used in this study

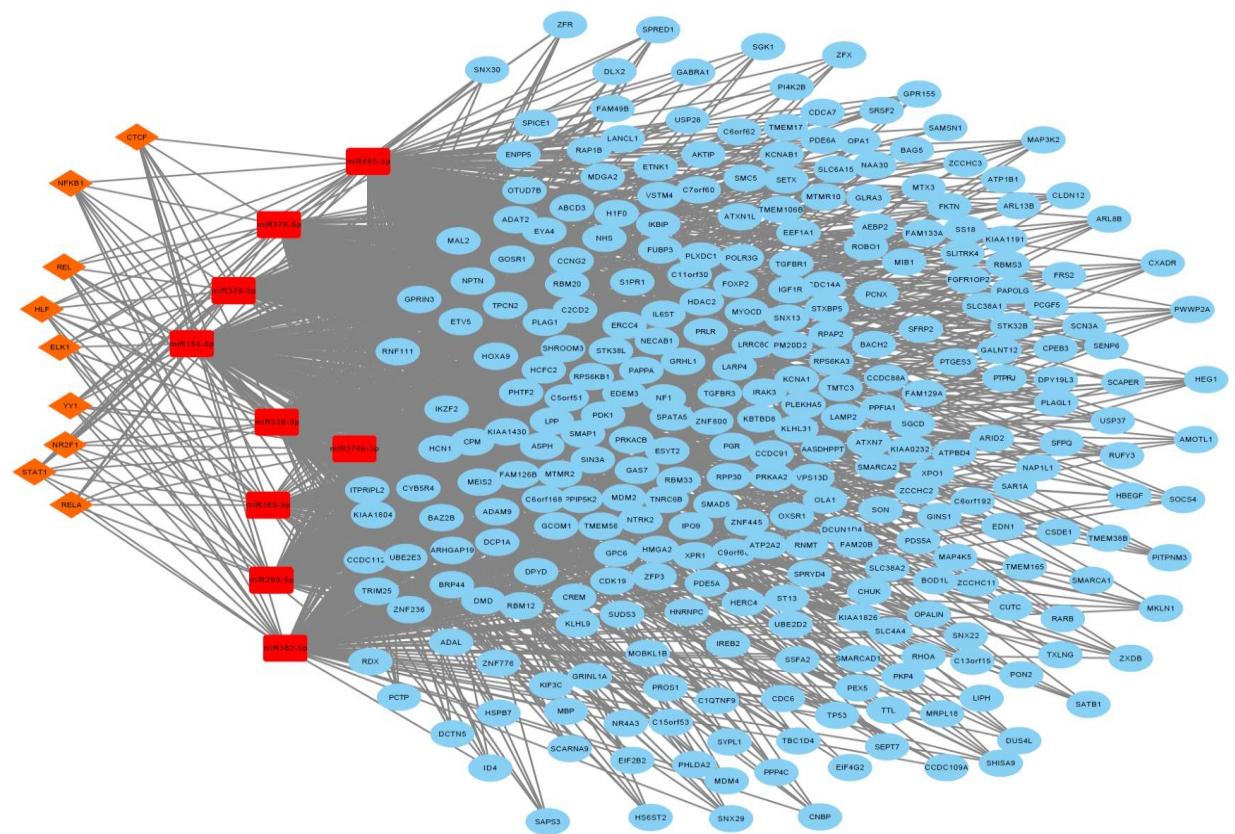
<i>Akt3</i> 3'UTR wild binding site sequence	CCGCTCGAGCGGagctgactgttcttgaggggccacttgcttctctagagtacaaaagta agggccttcttactaactgcagggtctcttattacacctaacaatacacactttgctgctactgtt tgtactgtctacagtagaatttcttatcttgctcctgtagtcattacaggcaagcatgaaatgt aaagtattttattaaataaaaaagaaacctctaaattggtaattgaattacctccctgtagctttat agtttgtgacatttcttgacctgtagttctttcattagatctgcgaagatctagtcattctggttaa ggattttaagcagatgcaactataaacccaagaaactgtattactattactgttggtcactactaaa cctgtctatttctgaagtatatgacATTGCGGCCGCTTTA
<i>Akt3</i> 3'UTR mutant binding sequence	CCGCTCGAGCGGagctgactgttcttgaggggccacttgcttctctagagtacaaaagta agggccttcttactaactgcagggtctcttattacacctaacaatacacactttgctgctactgtt tgtactgtctacagtagaatttcttatcttgctcctgtagtcattacaggcaagcatgaaatgt aaagtattttattaaataaaaaagcccaagctaaattggtaattgaattacctccctgtagctttat agtttgtgacatttcttgacctgtagttctttcattagatctgcgaagatctagtcattctggttaa ggattttaagcagatgcaactataaacccaagaaactgtattactattactgttggtcactactaaa cctgtctatttctgaagtatatgacATTGCGGCCGCTTTA
<i>Rel</i> 3'UTR wild binding site sequence	CCGCTCGAGCGGaatgtattcttaaatccaagcaaatgaataaaacttgtaattggctatg ccattgaaaaactaattttttattttgaggcccatgggccaaggtaacccctaaggggttttctta ggcttcttgagcttagatttgatgtatatcaaaatgtctttaaatgtaagtgggcagaaggca gttgaagtgaagcttcaaggtaggggaggttttctacattttatactattcaatctatgcctttaaag tgcttatgattttagctgtacactcatttttaaggggaagaagtttccttgaccattcgctttctta gatgtcctcactccctgtgatctcataaaactgcctatttgacatctctatctagaaatctaattaaag ctcacactcagcatatccaaaactgATTGCGGCCGCTTTA
<i>Rel</i> 3'UTR mutant binding site sequence	CCGCTCGAGCGGaatgtattcttaaatccaagcaaatgaataaaacttgtaattggctatg ccattgaaaaactaattttttattttgaggcccatgggccaaggtaacccctaaggggttttctta ggcttcttgagcttagatttgatgtatatcaaaatgtctttaaatgtaagtgggcagaaggca gttgaagtgaagcttcaaggtagggcttgggctacattttatactattcaatctatgcctttaaag ttgcttatgattttagctgtacactcatttttaaggggaagaagtttccttgaccattcgctttctta gatgtcctcactccctgtgatctcataaaactgcctatttgacatctctatctagaaatctaattaaag ctcacactcagcatatccaaaactgATTGCGGCCGCTTTA

Additional Table S3. The candidate transcription factors of each HPV16 related miRNA

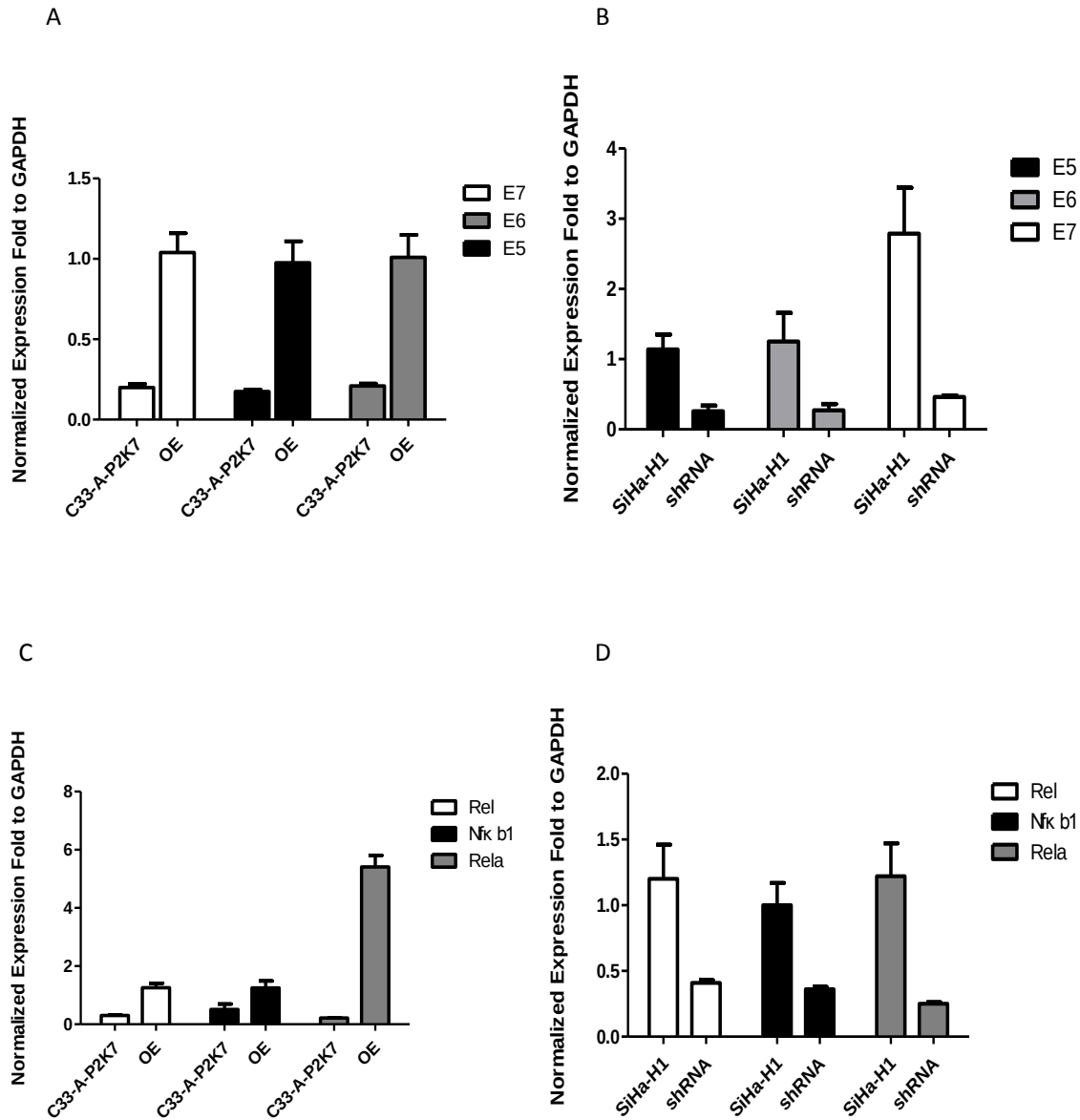
miRNA	Transcription Factors
miR-133a-3p/5p	c-Rel、NF-KB p50、NF-KB p65
miR-133b	c-Rel、HLF
miR-196a-5p	c-Rel、HNF4A、NF-KB p65
miR-154-5p	c-Rel、STAT1、CTCF
miR-299-5p	c-Rel、STAT1、HLF、ELK1
miR-329-3p/5p	c-Rel、NF-KB p50、STAT1、HLF
miR-369-5p	c-Rel、NF-KB p50、NF-KB p65、STAT1、CTCF、YY1
miR-376b-3p	c-Rel、NF-KB p50、NF-KB p65
miR-379-5p	c-Rel、STAT1、YY1、ELK1
miR-382-5p	c-Rel、NF-KB p50、ELK1
miR-495-3p	c-Rel、NF-KB p50、NF-KB p65、STAT1、ELK1、NR2F1



Additional Figure S1



Additional Figure S2



Additional Figure S3: A: Normalized expression of HPV16 E5,E6 and E7 after transfected overexpression vector of E5,E6 and E7 or empty vector P2K7 in C33-A cells respectively. B: Normalized expression of HPV16 E5,E6 and E7 after transfected shRNA of E5,E6 and E7 or empty vector H1 in SiHa cells respectively. C: Normalized expression of transcription factors *Rel*, *Nfkb1* and *Rela* after transfected overexpression vector of *Rel*, *Nfkb1* and *Rela* or empty vector P2K7 in C33-A cells respectively. D: Normalized expression of transcription factors *Rel*, *Nfkb1* and *Rela* after transfected shRNA of c- *Rel*, *Nfkb1* and *Rela* or empty vector P2K7 H1 in SiHa cells respectively.

*: $P < 0.05$.