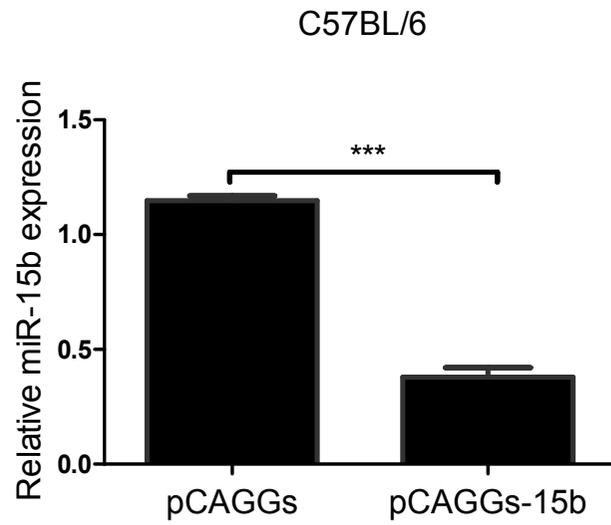
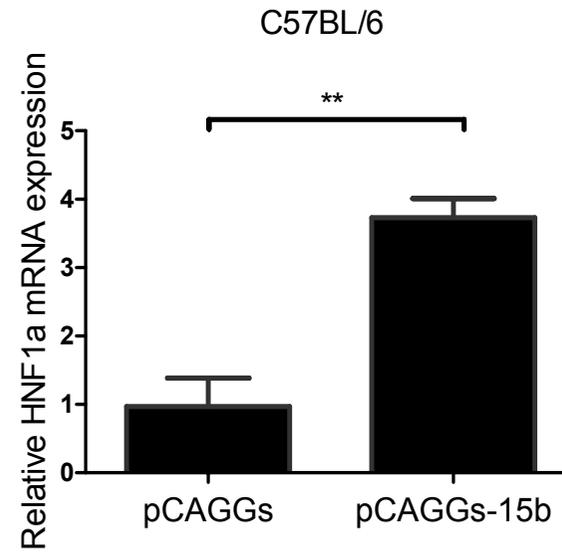


Supplementary Fig. 1 (Fig. S1)

A

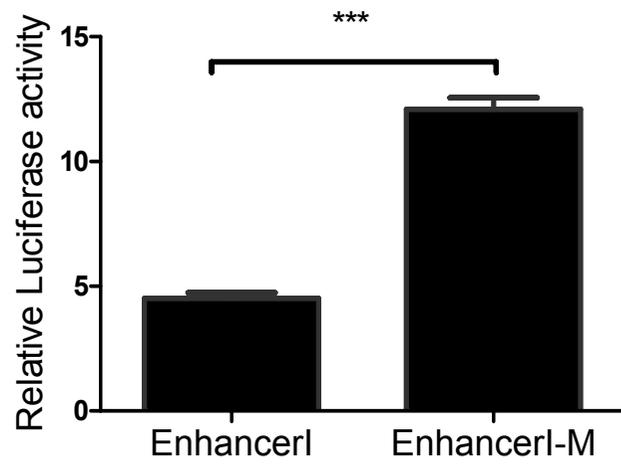


B

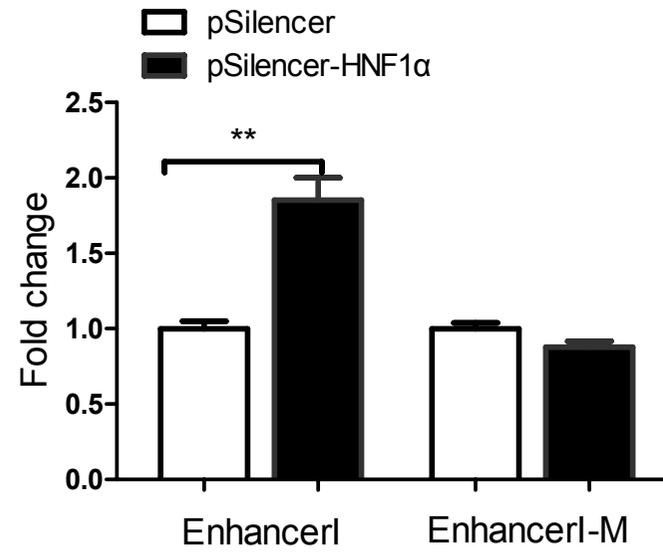


Supplementary Fig. 2 (Fig. S2)

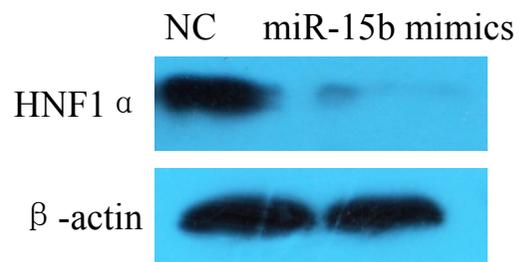
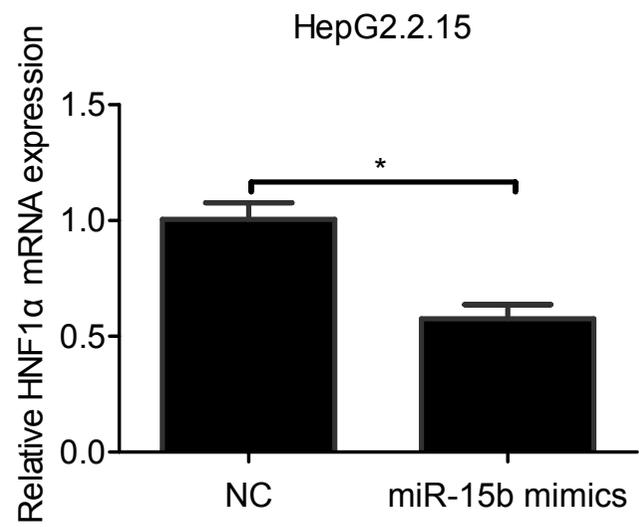
A



B



Supplementary Fig. 3 (Fig. S3)



Supplementary Fig. 4 (Fig. S4)

**Table S1** Oligonucleotide sequences for miRNAs/siRNAs and primers used for real-time PCR and vector cloning.

<b>Gene name</b>	<b>Application</b>	<b>Type</b>	<b>Sequence 5' -3'</b>
U6	Reverse transcription	stem-loop RT	GTCGTATCCAGTGCAGGGTCCGAGGTATTTCGCACTGGTACGACAA AAATATG
	real time PCR	forward	CGCAAATTCGTGAAGCGTTC
		Universal reverse	GTGCAGGGTCCGAGGTATTC
miR-15b	Reverse transcription	stem-loop RT	CTCAACTGGTGTCTGGAGTCGGCAATTCAGTTGAGTGTAACC
	real time PCR	forward	ACACTCCAGCTGGGTAGCAGCACATCATGG
		reverse	Universalreverse primer as above
miR-15b	mimics	sense	UAGCAGCACAUCAUGGUUUACA
		Anti-sence	UAAACCAUGAUGUGCUGCUAAU
Negative control	mimics	sense	UUCUCCGAACGUGUCACGUTT
		Anti-sence	ACGUGACACGUUCGGAGAATT
HBVRNA	real time PCR	forward	CCGTCTGTGCCTTCTCATCT
		reverse	TAATCTCCTCCCCCAACTCC
miR-15b sponge	pCAGGs-15b sponges cloning	sense	GCCGGATCCTGTAAACCATCATGCTGCTACTTCTGTAAACCATCA TTGCTGCTAC
		Anti-sence	GCCAAGCTTAGATCTTAGCAGCAATGATGGTTTACAGAAGTAGCA GCAATGATGG
miR-15b Gsensor	miR-15b Gsensor	sense	AATTCTGTAAACCATGATGTGCTGCTAC
		Anti-sence	TCGAGTAGCAGCACATCATGGTTTACAG
Enhancer I	pGL3- Enhancer I	forward	GGTACCGGGAACGTTGCCACAGGATC

	construction	reverse	AAGCTTGACCGGCTGCGAGCAAAC
S1p promoter	pGL3- S1p	forward	GGTACCCTTGCCCTACTTTTGGGAAG
		reverse	AAGCTTAAGAATATGGTGACCCGC
S2 p promoter	pGL3- S2p	forward	GGTACCCAAACAATCCAGATTGGGAC
		reverse	AAGCTTACTGCCGATTGGTGGAGG
Cp promoter	pGL3-Cp	forward	GGTACCGCCCATCAGATCCTGCCCAAG
		reverse	AAGCTTGAAAAAGTTGCATGGTG
HBx	HBx labeled for southern blot	forward	ATGGCTGCTAGGCTGTGCTGCCAAC
		reverse	GGCAGAGGTGAAAAAGTTGCATGGTG
HNF1 $\alpha$	HNF1 $\alpha$ -3'UTR cloning	forward	GAATTCTAACCCACGGCACCTGGGCCCTG
		reverse	CTCGAGAAACGTGCCACTCGCCCCGGCTG
HNF1 $\alpha$	real time PCR	forward	GGAGGAGCGAGAGACGCTAGT
		reverse	CACCCCTCTCTGGATGCATT
$\beta$ -actin	real time PCR	forward	CGTGGACATCCGCAAAGAC
		reverse	CTCAGGAGGAGCAATGATCTTGAT
HNF1 $\alpha$	pcDNA3.1- HNF1 $\alpha$ cloning	forward	GCCACCATGGTTTCTAAACTGAGCCAGC
		reverse	TTACTGGGAGGAAGAGGCCATCTG
si HNF1 $\alpha$	pSilencer- HNF1 $\alpha$ construction	sense	GATCCGAAGAAGCCTTCCGGCACATTCAAGAGATGTGCCGGAAG GCTTCTTCTTTTTTGGAAA
		Anti-sence	AGCTTTTCCAAAAAAGAAGAAGCCTTCCGGCACATCTCTTGAATG TGCCGGAAGGCTTCTTCG
Mutation in HNF1 $\alpha$ binding sites	pGL3- Enhancer I-M	forward	ACAGCAAAGCCCGAGCGACCTTCGGTACCGGGAACGTTGCCAC AGGATC
		reverse	GTTTTGCTCGCAGCCGGTCAAGCTTCGGCTAAGGCACGCGCCACT TTT

Mutation miR-15b binding sites	in HNF1 $\alpha$ -3'UTR -Mutant	mutant	GTTT TAGAAA ACTTCCTACCGGCAGGCCTATTGATTGG
		forward	ACAGCAAAGCCCGAGCGACCTTCGAATTCTAACCACGGCACCTG GGCCCTG
		reverse	CAGCCGGGGCGAGTGGCACGTTCTCGAGCGGCTAAGGCACGCGC CACTTTT
		mutant	CACATCCCTGGGCCTCCACCTGAGAACCTGGCCTTC

## **Supplementary figure legends**

### **Figure S1. Ectopic miR-15b expression promotes HBV replication and expression.**

Intracellular HBV DNA replication intermediates were detected by Southern blot and qRT-PCR in HepG2.2.15 cells (A) transfected with 40 nM miR-15b mimics/NC, or Huh-7 cells (C) transfected with pHBV1.2 plus 20 nM miR-15b mimics/NC. The positions of relaxed circular (RC), double-stranded linear (DL), and single-stranded (SS) DNAs were indicated in the southern blot. (B) Proliferation of Huh-7 cells transfected with miR-15b mimics/NC. Cell proliferation was evaluated by MTT assay.

### **Figure S2. Evaluation of pCAGGs-15b transduction efficiency**

Three days after injected with pCAGGS-15b or pCAGGs, the relative expression of miR-15b (A) and its target (HNF1 $\alpha$ ) (B) in C57BL/6 mice liver were detected by qRT-PCR.

### **Figure S3. The effect of HNF1 $\alpha$ on HBV Enhancer I**

(A) Luciferase reporter assay was performed 48 h after cotransfection with the wild-type or the mutant HBV Enhancer I and pSilencer-HNF1 $\alpha$  or pSilencer. (B) The relative activity of wild-type or mutant Enhancer I in Huh-7 cells.

**Figure S4. Ectopic miR-15b expression decreases HNF1 $\alpha$  mRNA and protein expression in HepG2.2.15 cells.**

The expression of HNF1 $\alpha$  mRNA (upper) and HNF1 $\alpha$  protein (lower) was analyzed in HepG2.2.15 cells transfected with 40 nM miR-15b mimics/NC.