

**Table 1: siRNA used in study**

---

Nurr1 si	5' - GCUAUGACCAGCCUGGACU - 3'
Sp1 si	5' - CAUACCAGGUGCAAACCAA - 3'

---

**Table 2: RT-PCR primers used in this study**

---

Nurr1	Forward: 5' - TCCAACGAGGGGCTGTGCG - 3' Reverse: 5' - CACTGTGCGCTTAAAGAAGC - 3'
CDK4	Forward: 5' - TTTGTGGCCCTCAAGAGTGT - 3' Reverse: 5' - TCCTTGATCGTTTCGGCTGG - 3'
Sp1	Forward: 5' - GGCGAGAGGCCATTTATGTGT-3' Reverse: 5' - TGCATGACGTTGATGCCACT - 3'
E2F1	Forward: 5' - GATCGGGCCTTGTTTGCTCTT - 3' Reverse: 5' - GATCGGGCCTTGTTTGCTCTT - 3'
CCND2	Forward: 5' - TACCTCGACCGTTTCTTGGC - 3' Reverse: 5' - AGGCTTGATGGAGTTGTCCG - 3'
P15	Forward: 5' - TCGCGAGGAGAACAAGG - 3' Reverse: 5' - CCATCATCATGACCTGGATCG - 3'
VEGF	Forward: 5' - TTTGGAGTCGCCACAAACA - 3' Reverse: 5' - TGTTACGGTTTGGGGCCTT - 3'
Actin	Forward: 5' - AGTTGCGTTACACCCTTCTTG - 3' Reverse: 5' - CACCTTCACCGTTCCAGTTTT - 3'
$\beta$ 2-M	Forward: 5' - GAATTGCTATGTGTCTGGGT - 3' Reverse: 5' - CATCTTCAAACCTCCATGATG - 3'

---

**Table 3: Primers used in CHIP**

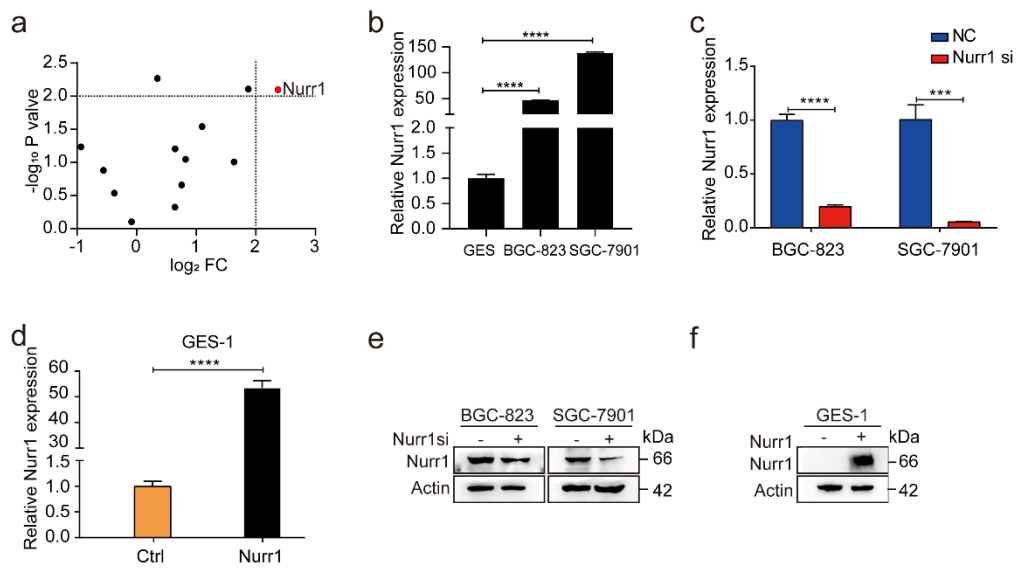
---

CDK4 P	Forward: 5' - TGTGCAATCCTGTATCCGTCT - 3'
	Reverse: 5' - GGCCATCTGGCAGAGAAGTT - 3'
Nurr1 P1	Forward: 5' - GGGCTGCAGATTAGGGTTGA - 3'
	Reverse: 5' - CCGCTTTTCTACTCGCGCA - 3'
Nurr1 P2	Forward: 5' - CTGCGCGAGTAGAAAAGCG - 3'
	Reverse: 5' - TTCTAGCAAAGGAAACGCCG - 3'
Nurr1 P3	Forward: 5' - ATATACCAAAGCGAGCGCGG - 3'
	Reverse: 5' - GCCAACATGCACCTAAAGTCT - 3'

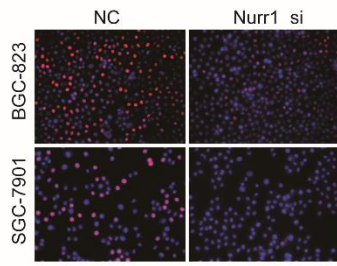
---

**Table 4: Antibodies used in study**

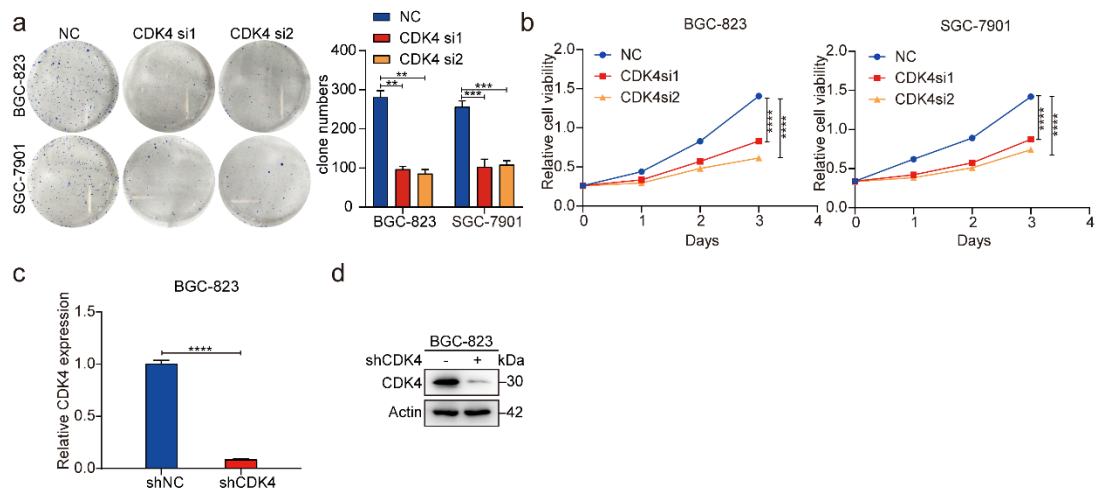
Antibody	Company	Identifier
Nurr1	Abcam	ab41917
CDK4	CST	12790
Ki67	Abcam	ab15580
$\beta$ -actin	Sigma-Aldrich	A1978
Sp1	Abcam	ab13370
AKT	CST	4691
P-AKT	CST	4060
CagA	Santa	sc-28368



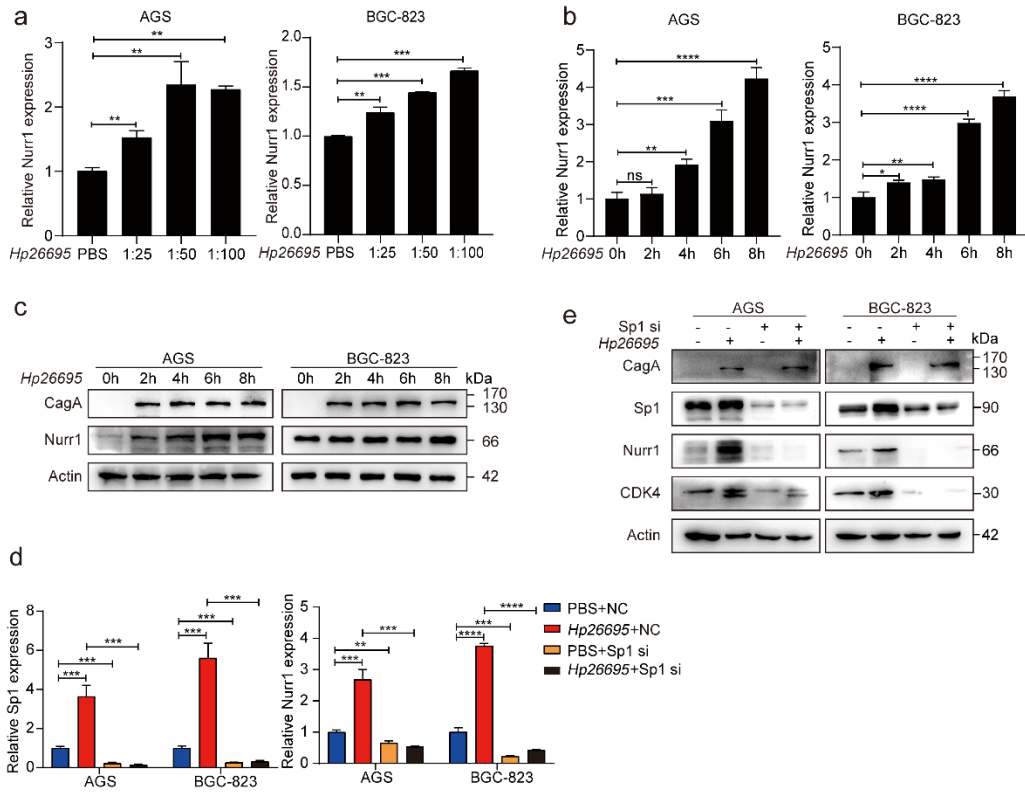
**Figure S1. Nurr1 expression in GC cells.** (a) Volcano map analyzed the expression and P value of 13 nuclear receptors in GC specimens with respect to the AG specimens (Nurr1  $P=0.008$ ). (b) Nurr1 mRNA expression in two GC lines (BGC-823, SGC-7901) and immortalized gastric cells GES-1. (c-d) Nurr1 mRNA expression in BGC-823 and SGC-7901 cells transfected with Nurr1 siRNA (c) and in GES-1 cells transfected with Nurr1-coding plasmid (d).  $***P<0.001$ ,  $****P<0.0001$ , by Student's t-test. (e-f) Western blot analysis of Nurr1 protein expression in BGC-823 and SGC-7901 cells transfected with Nurr1 siRNA (e) and in GES-1 cells transfected with Nurr1-coding plasmid (f).



**Figure S2. Nurr1 promotes GC cells proliferation.** EdU assay after cells transfected with Nurr1 siRNA in BGC-823 and SGC-7901 cells. Blue: DAPI, red: EdU-positive.

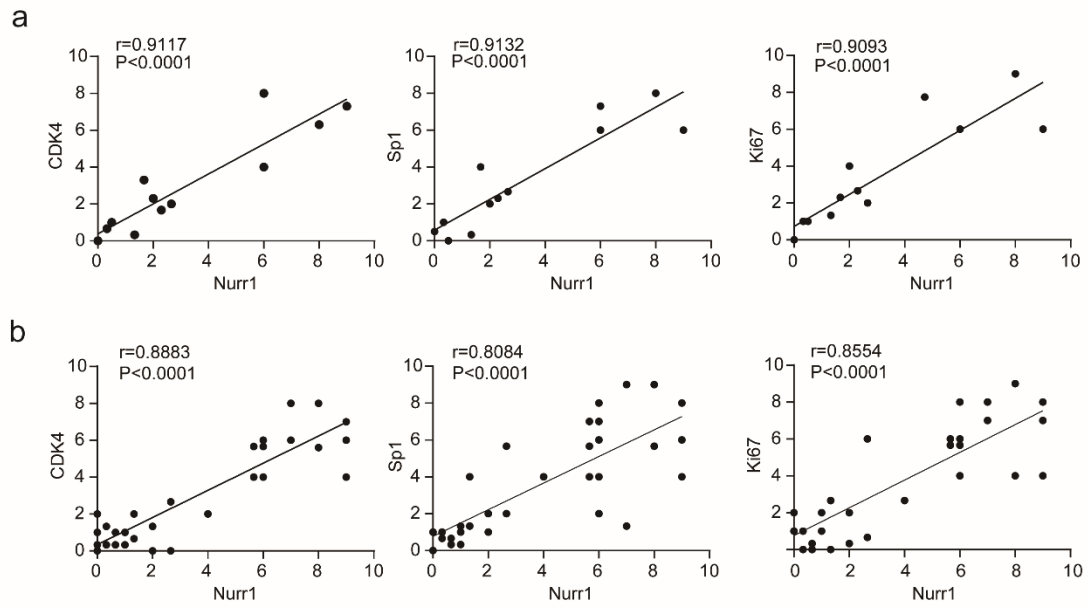


**Figure S3. CDK4 facilitates GC cells proliferation *in vitro*.** a-b Colony formation (a) and CCK8 assay (b) after cells transfected with CDK4 siRNAs. (c-d) CDK4 mRNA and protein expression in BGC-823 cells transfected with lenti-CDK4 shRNA. \*\* $P < 0.01$ , \*\*\* $P < 0.001$ , \*\*\*\* $P < 0.0001$ , by Student's t-test.



**Figure S4. Infection of *H. pylori* facilitates Nurr1 expression.** (a-b) mRNA expression of Nurr1 in AGS and BGC-823 cells infected with *H. pylori* (*Hp26695*) at different MOI (a) and different time points (b). \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ , \*\*\*\* $P < 0.0001$ , by Student's t-test. (c) Western blot analysis of Nurr1 expression in AGS and BGC-823 cells infected with *H. pylori* (*Hp26695*) at different time points. (d-e) Sp1 and Nurr1 mRNA (d) and protein (e) expression in AGS and BGC-823 cells transfected with Sp1 siRNA and *H. pylori* (*Hp26695*) treatment. \*\* $P < 0.01$ , \*\*\* $P < 0.001$ , \*\*\*\* $P < 0.0001$ , by Student's t-test.

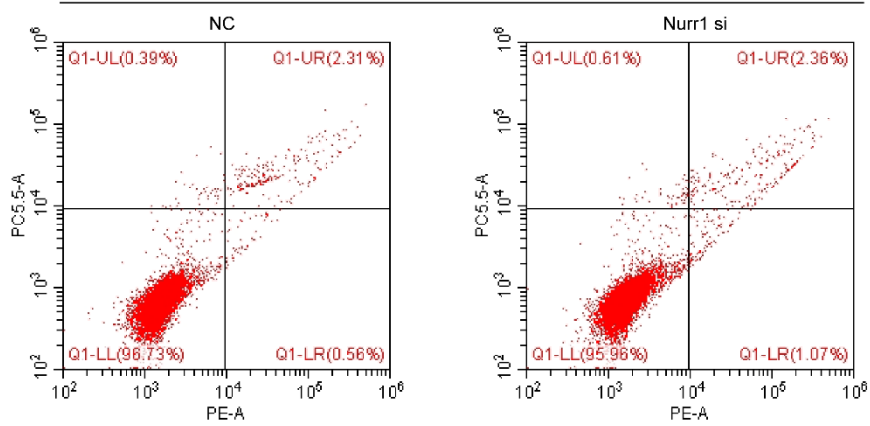




**Figure S5. Correlation analysis.** The correlation of CDK4, Sp1, Ki67 with Nurr1 in mucosal epithelial tissues of control, MNU and MNU-Hp treated mice (a). The correlation of CDK4, Sp1, Ki67 with Nurr1 in GC samples and corresponding normal samples (b).

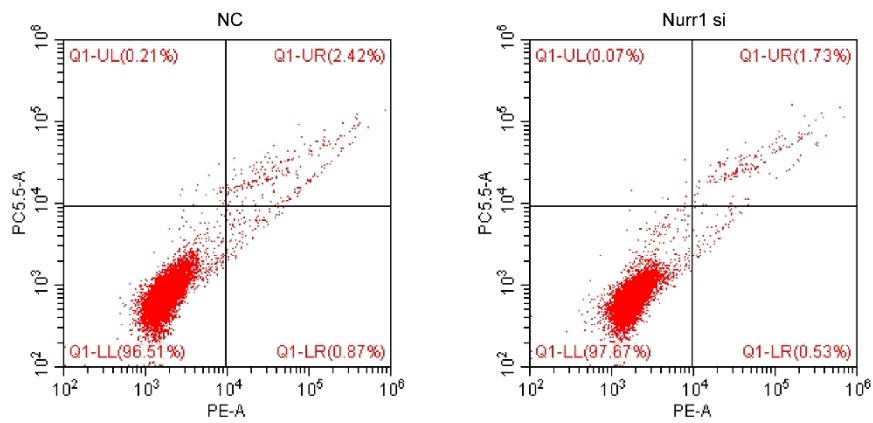
a

BGC-823



b

SGC-7901



**Figure S6. Nurr1 has no effect on GC cells apoptosis.** Cells apoptosis in BGC-823 (a) and SGC-7901 cells (b) transfected with Nurr1 siRNAs.